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Davis Amtrak Station Pilot Project Evaluation: Informing Long Term Solutions to the Davis Amtrak Station Access Barriers

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Region University Transportation Center

Susan Pike, University of California, Davis



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TABLE OF CONTENTS

About the Pacific Southwest Region University Transportation Center	6
U.S. Department of Transportation (USDOT) Disclaimer	7
California Department of Transportation (CALTRANS) Disclaimer	7
Disclosure	7
Acknowledgements.....	7
Abstract	8
Davis Amtrak Station Pilot Project Evaluation: Informing Long Term Solutions to the Davis Amtrak Station Access Barriers.....	9
Executive Summary	9
Introduction	11
Background	12
Transit Access.....	12
Ridehailing Partnerships	13
Methods	14
Sample Selection and Response Rates	14
Survey Content	17
Analysis and Results.....	18
Conclusions	24
References	25
Weblinks	26
Data Management	27
Appendix A Final Survey.....	28

List of Tables

Table 1. Respondents’ Likelihood of Using Planned and Potential Programs	9
Table 2. Sample Characteristics	15
Table 3. Respondents’ Likelihood of Using Planned and Potential Programs	20
Table 4. Expected Program Use by Trip Type ¹	20
Table 5. Household and Demographic Characteristics by Expected Program Use ^{1, 2}	21
Table 6. Respondent Use of Amtrak and COVID-19 Risk Perception by Expected Program Use ^{1,2}	22
Table 7. Reasons for Not Using Train for Those with Train Available	23

List of Figures

Figure 1. Survey Question Describing the Planned Carpool Program 19

About the Pacific Southwest Region University Transportation Center

The Pacific Southwest Region University Transportation Center (UTC) is the Region 9 University Transportation Center funded under the US Department of Transportation's University Transportation Centers Program. Established in 2016, the Pacific Southwest Region UTC (PSR) is led by the University of Southern California and includes seven partners: Long Beach State University; University of California, Davis; University of California, Irvine; University of California, Los Angeles; University of Hawaii; Northern Arizona University; and Pima Community College.

The Pacific Southwest Region UTC conducts an integrated, multidisciplinary program of research, education, and technology transfer aimed at *improving the mobility of people and goods throughout the region*. Our program is organized around four themes: 1) technology to address transportation problems and improve mobility; 2) improving mobility for vulnerable populations; 3) improving resilience and protecting the environment; and 4) managing mobility in high growth areas.

U.S. Department of Transportation (USDOT) Disclaimer

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Disclosure

Susan Pike, PhD, conducted this research titled, “Davis Amtrak Station Pilot Project Evaluation: Informing Long Term Solutions to the Davis Amtrak Station Access Barriers,” at the University of California, Davis, Institution of Transportation Studies. The research took place from February 2019 to June 2020 and was funded by a grant from the California Department of Transportation in the amount of \$66,551.00. The research was conducted as part of the Pacific Southwest Region University Transportation Center research program.

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Abstract

This study investigates barriers to accessing the Davis Amtrak Station to inform a program designed to increase access to the station with on-demand alternatives. The program aims to decrease private vehicle use to access the station and for travel to locations outside of Davis through partnerships with a carpool/rideshare app, as well as a ridehail app. Motivations for the program stem from the high passenger usage at the Davis station that may be impacted by parking capacity and other challenges. The city has limited interest in or ability to add new parking capacity, however pricing will be introduced to the lot in the future. Due to the COVID-19 pandemic, the City has not yet set a launch date for the program. This report evaluates the potential for the program using survey data collected from Davis residents about their travel expectations once COVID-19 is no longer a threat. The results of this study provide insights into residents' interest in the planned pilot programs. Residents are most likely to use a free ridehail program to travel to the train station, while some are also likely to use a carpool/rideshare program and/or a free shuttle to downtown. Those with higher perceived risks associated with riding the train during COVID-19 are less likely to use these programs. City planners are already considering these issues, and these results underscore the importance of these issues in the final design and outreach for this pilot program.

Davis Amtrak Station Pilot Project Evaluation: Informing Long Term Solutions to the Davis Amtrak Station Access Barriers

Executive Summary

The Davis Amtrak station, a stop on the regional Capital Corridor (CC) line has the third highest passenger usage along the Capitol Corridor and up until early 2020, ridership was increasing. However, the station’s parking lot fills up before 6am on weekday mornings and this poses an access challenge to passengers. Transportation staff at the City have planned a shared use mobility program as a cost-effective solution that will make commuting by train easier, more productive, affordable, and travel-time competitive. However, plans to implement this program are on hold until COVID-19 is no longer a threat. This study explores the level of interest expressed by City residents, as well as the impacts on the potential use of the programs arising from concerns about the pandemic.

Three programs were explored in a survey of Davis residents. With approximately 280 complete responses, the majority survey participants reported they were likely or very likely to use a free ridehail program and a free shuttle to downtown, however most participants reported they were unlikely or very unlikely to use a carpool/traditional rideshare program. In this report analysis of factors associated with these stated preferences are explored.

Table 1. Respondents’ Likelihood of Using Planned and Potential Programs

Program	Very likely	Likely	Not apply	Unlikely	Very unlikely	Total
Carpool	11 (4%)	21 (7%)	39 (13%)	64 (21%)	158 (54%)	293
Ridehail	70 (24%)	107 (37%)	21 (7%)	47 (16%)	44 (15%)	289
Shuttle	66 (24%)	79 (29%)	13 (5%)	66 (24%)	48 (18%)	272

Due to the COVID-19 pandemic, the City has not yet set a launch date for the program, however this report evaluates the potential for the program using survey data collected from Davis residents about their travel expectations once COVID-19 is no longer a threat. The results of this study provide insights into residents’ interest in the planned pilot programs. Key findings include:

1. Residents are most interested in a program that provides free access to the station through a ridehail company.
2. The impacts of COVID-19 are somewhat inconclusive. Respondents reporting higher levels of risk using the train during COVID-19 are less likely to use the carpool program, however there is no apparent pattern for the use of the ridehail program.

3. The use of the ridehail program is most likely for those that were not using the train as part of their commute in January 2020, before COVID-19.
4. Those that had used the Capitol Corridor for other trips reported higher levels of likelihood of use than those that did not.

Both programs, in addition to the downtown shuttle garnered interest from the participants in this survey and will likely be used once implemented. The nature of stated preference surveys means that we cannot know precisely how much the programs will be used, but the other important factors, such as income, and the use of the Capitol Corridor can help inform the outreach and implementation of the program.

Results suggest that there are individuals who would begin using the train if this program is introduced, and that the program would benefit those who do not use the train for regular travel, but who do make trips outside of Davis with the train.

Introduction

The Davis Amtrak station, a stop on the regional Capital Corridor (CC) line has the third highest passenger usage along the Capitol Corridor and up until early 2020, ridership was increasing. However, the station's parking lot fills up before 6am on weekday mornings and this poses an access challenge to passengers. Indeed, since the early 2000s, the city has received complaints about getting to the train station. Transportation staff at the City have planned shared use mobility options as a cost-effective solution that will make commuting by train easier, more productive, affordable, and travel-time competitive. However, plans to implement this program are on hold until COVID-19 is no longer a threat. This study explores the level of interest expressed by City residents, as well as the impacts on the potential use of the programs arising from concerns about the pandemic.

Prior surveys by the City indicate that 50% of those that park at the train station are Davis residents, 15% are residents from elsewhere in Yolo County, and 35% are from outside Yolo County (City of Davis unpublished data). Differences in cost are likely the primary reason many travel to the Davis Amtrak station from outside of Yolo County. Both single and multi-ride fares for westbound trips towards San Jose cost, on average, 20% less when travelling from Davis rather than Sacramento, but the price of parking is also likely a major factor, as parking at the Davis station is free, compared to a daily maximum of \$10 at the Sacramento station, or a \$110 monthly parking pass. In addition, for some commuters, the Davis station may be easier to access than the Sacramento station.

The City has limited interest or ability in adding new parking capacity to accommodate more cars and is thus planning to introduce pricing in the parking lot in the future. With the pandemic's effect on Capitol Corridor ridership and parking, there isn't a policy justification for implementing paid parking in the near term, though this will not occur before the end of 2020.

To improve access to the station, shared-use mobility solutions were developed over several months beginning in the fall of 2017, and extending through the late spring of 2018. The in-depth discussions and workshops with transportation professionals from throughout the region, were convened by the Sacramento Area Council of Governments to help solve local transportation problems, in a collaborative environment. The City put out a request for proposals and ultimately opted to launch a program with two elements. The planned pilot will include 1. free rides with a ridehail company (such as Uber or Lyft), and 2. guaranteed parking for passengers arriving at the station with a local rideshare/carpool application. In addition, the city may consider a downtown shuttle that connects residents to the Amtrak station.

The pilot programs were undergoing final details of planning in early 2020 but were delayed due to the COVID-19 pandemic. As a result, this study has adapted to cover potential impacts on the use of transit and on the Amtrak Capitol Corridor in the wake of the pandemic. This study also aims to address the potential use of the pilot program as well as the reported factors that limit current use of the station and the rail line.

Background

In this study I explore the factors affecting use of the CC train by Davis and area residents, as well as the experiences of those who do use the train for commuting. Further, I evaluate changes in travel patterns resulting from COVID-19, and planned travel behavior “Once COVID-19 is no longer a threat.” Finally, in the same post-coronavirus context, this study identifies key factors that will contribute to the use of the programs planned by the City of Davis.

Transit Access

In addition to barriers related specifically to the use of rail transit, access to the station can impact ridership. Issues related to motorized access to the transit station often pertain to parking availability and pricing, issues that are likely to be more acute in areas with higher demand for transit. Park-and-ride lots at transit stations, as opposed to park-and-ride lots as carpool gathering areas are likely to increase transit ridership, but existing literature suggests nuances to this outcome.

One study suggests that provision of station parking is practical and results in increased patronage ([Duncan 2010](#)). This is in contrast with other studies (for example, [Wilson and Menotti 2007](#)) that the localized context of station-area housing and the real estate market to be more influential than parking availability. Although the question of how much park-and-ride lots contribute to transit ridership is an important one, many transit agencies are faced with the issue that once park-and-ride lots are in place, they tend to fill up.

Possibly the most straightforward approach to reducing parking demand is introducing parking pricing, charging travelers for using the lots. Factors like trip purpose and the availability of alternative modes and their relative utility will determine whether riders choose to use other modes for the entire trip rather than pay for parking, or switch to an alternative access mode. In a stated preference study performed at busy park-and-ride stations in Vancouver, model results showed that pricing parking at most park-and-ride lots made users switch to an alternative form of transit for their entire long-distance commute trip (instead of driving all-way) ([Habib et al. 2013](#)). But the alternative mode adopted by the displaced park and ride users might not always be sustainable; if the alternative transit all the way takes longer or requires additional transfers. In the case of BART, the regional rail of the San Francisco Bay Area, parking pricing has not discouraged riders from taking transit ([Duncan 2010](#)). There is evidence this is the case in other high-density areas, with utilization rates of 90% and above however, when parking utilization drops below that level parking pricing may contribute to reductions in ridership ([Coffel et al. 2012](#)). Other potential issues with pricing strategies include spillover into areas in the vicinity of the target lot ([Jacobson and Weinberger 2016](#)).

Access to stations can also be improved through the provision of bike racks, secure bike lockers, better signage, and safe walking infrastructure. But access mode choice is dependent on distance to the station, and walking and cycling are replaced by car or transit when longer distances are involved ([Givoni and Rietveld, 2007](#)). Although multimodal integration, for example, bus-rail linkage, can reduce the need to drive to access commuter rail, issues of

irregular service frequencies, perceptions of bus service, and the burden of transfer, among other factors, pose challenges ([Blainey et al. 2012](#)).

Ridehailing Partnerships

The programs the City of Davis is planning are not the only ones of their kind. Partnerships between transit agencies and/or municipalities and shared use mobility services have formed in a number of locations throughout the US. Schwieterman et al. (2018) provide a good overview of the partnerships as of 2018. The potential benefits of these programs include opportunities and/or support for riders to plan their trips, pay with 1-click, and ensure transit availability, for example through guaranteed rides home (Shaheen and Cohen 2020). Most partnerships form to launch pilots that improve first/last mile connections (Pike and Kazemian 2019), though other motivations include cost savings and improving existing programs (Blodgett et al. 2017). Schwieterman et al. (2018) categorize partnerships by what they are supposed to do, including: encourage connections and fill in gaps, develop trip planning apps, address parking shortages, and assist those who are mobility impaired.

Two examples that are similar to the Davis programs include Summit New Jersey: rather than building additional parking for regular users of Summit train station, the city subsidized the cost of rides to and from the station for all parking permit holders. Users pay an equivalent of the parking cost of \$4 per day—\$2 each for the trips to and from the station ([City of Summit 2017](#)). BART and MTC’s partnership with Scoop, a rideshare company is also similar to planned pilot in the City of Davis in that it guarantees parking for passengers using the rideshare application to carpool to the station (McCoy et al. 2018).

There are a variety of benefits of these programs, but there are also potential issues that can arise during implementation including the need for good marketing and outreach, the experimental nature of these partnerships, monitoring and quality control needs, and limited access/tech-savvy of some user groups, as well as the longer term uncertainty about these companies (Blodgett et al. 2017). For elderly passengers limited smartphone fluency or long wait times to reach concierge reservation systems may become challenges (Curtis et al. 2018).

Thus far, notable best practices include the “fit” of the program. For example, in dense urban locations fixed route transit services may be best supplemented by on-demand ride services operating late at night, whereas suburban locations are likely to be best served through pilots that improve first- and last-mile connections ([Feigon and Murphy 2018](#)). However, there have been limited evaluations of these programs (Schwieterman et al. 2018). Indeed, in one study, only 27% of respondents (representing transit agencies) had a formal evaluation although 47% reported surveying passengers (Curtis et al. 2018). In a similar finding: “While these companies, particularly Lyft, have partnered with several transit operators around the United States to offer first mile/last mile connections to line-haul transit service, their net effect on transit use remains uncertain. (To be clear, the effects are certainly knowable but the TNCs have been loath to publicly release their ridership data.)” (Manville et al. 2018). In related work, we found that agencies had positive views of ridehail following partnerships (Pike and Kazemian 2019). But largely, the work related to these kinds of partnerships has focused on the transit agencies

themselves; perhaps rightly so, however in this study begins to shed light on passenger perspectives.

These partnerships are still new, and studies like this one will help evaluate the impact of these types of partnerships on travel and transportation systems. In line with these early findings, the City of Davis program will be a first- and last-mile program for commuters travelling to the Sacramento area or the Bay Area. This study is one of the first that will evaluate travel behavior and passenger concerns as a panel study, before, during and after the introduction of a pilot program. While this report covers only the before behavior, and is affected by COVID-19, the future waves of this study will be informative evaluation tools for the City of Davis and will provide important insights for others interested in these types of partnerships.

The current study fills a gap in the literature by investigation the potential use of a pilot program that would improve access and potentially the use of regional rail. In addition, I add to the growing literature on the impacts of COVID-19 by gathering information about planned travel once the threat has ended, well as how perceptions of risk during the pandemic might affect travel patterns in the longer term.

Methods

This study is based on data collected through a survey of Davis (and area) residents conducted in July 2020. Originally, the survey was developed in 2017-18 and aimed to collect information from residents prior to the launch of the City's planned pilot program. The survey was designed to inform the design of the programs. Unfortunately, the City had not set a date to launch the pilot before the COVID-19 pandemic led to widespread shelter-in-place orders. Thus, the "before" survey was not implemented during pre-COVID-19 circumstances. As a result, this study reflects the conditions faced by residents and potential Amtrak users during this time.

Sample Selection and Response Rates

The survey sample was randomly drawn from a list of addresses provided by the City of Davis. The full list of addresses was scanned for land use types. Those that were commercial or other non-residential uses were removed. A postcard invitation was mailed to 6,000 randomly selected residences in Davis in July 2020. The postcard included a brief description of the study, information about incentives, and a QR code that could be used to directly launch the survey in a smartphone or tablet. The postcard invitation also included information on how to access the survey via my personal website, as the survey is much more user friendly when completed with a computer. The survey was also advertised online through various channels including Twitter, Nextdoor and Facebook. This online publicization of the survey was very limited. While it is not known how many residents viewed the online recruitment materials, nor how many accessed the survey from these online advertisements, it is thought to be quite a small number. As of early September 2020, a total of 373 individuals had participated in the survey. Additional responses were collected through mid-October 2020 and these will be incorporated into future analysis. Of the 373 in the sample used for this report, 280 responded to most of the key survey questions, giving a response rate of about 5%, based on the 6,000 postcard invitations.

The sample is made up of 51% males and 45% females. The remainder of the sample (12) who answered the question declined to state their gender. Most (37.5%) respondents drive alone as their usual commute mode, followed by bike (24.9%), and the Amtrak Capitol Corridor (13.8%). Note that the sample size is very small for the usual commute mode. This was due to a survey error, where respondents were presented with a question to select all that apply, with options: “I live in Davis”, “I work in Davis”, “I work outside of Davis”, “I go to school in Davis or elsewhere”. Those who did not say that they work were not asked the sections of the survey related to commutes; however, many of these individuals later reported an occupation type. A follow-up to the survey was sent out to these individuals and future analysis will be updated with these responses.

Interestingly, 65% of the sample used the Capitol Corridor for some trips, more than four times the number that used the Capitol Corridor for their commutes. About half of the remaining sample (16.9%) considered using the train, while 18% of the sample did not. The high use of the train in the sample may be due to a selection bias, since survey invite materials described the survey’s relationship to the Capitol Corridor.

Table 2. Sample Characteristics

Sample Characteristic	Count	Percent
Gender	281	100.0%
Decline to answer	12	4.3%
Female	125	44.5%
Male	144	51.2%
Usual commute mode in January 2020	189	100.0%
Amtrak Capitol Corridor	26	13.8%
Bike	47	24.9%
Bus	16	8.5%
Carpool	5	2.6%
Drive alone	71	37.6%
Electric bike	1	0.5%
Get ride	2	1.1%
Other:	14	7.4%
Walk	7	3.7%
Used Capitol Corridor for some trips	295	100.0%
Didn’t consider	53	18.0%
Considered, didn't use	50	16.9%
Did use	192	65.1%
Occupation type	282	100.0%
Clerical and administrative support	3	1.1%
Education (K-12)	11	3.9%
Management or administrative	24	8.5%

Sample Characteristic	Count	Percent
Other (please write in)	35	12.4%
Production/construction or crafts	4	1.4%
Professional or technical	92	32.6%
Retired	55	19.5%
Sales or marketing	2	0.7%
Services or repair	3	1.1%
Student	13	4.6%
University faculty or staff	40	14.2%
Days working during COVID-19	306	100.0%
None	93	30.4%
1 day	4	1.3%
2 days	6	2.0%
3 days	12	3.9%
4 days	13	4.2%
5 days	135	44.1%
6 days	24	7.8%
7 days	19	6.2%
Days working in person during COVID-19	213	100.0%
None	137	64.3%
1 day	20	9.4%
2 days	13	6.1%
3 days	12	5.6%
4 days	9	4.2%
5 days	18	8.5%
6 days	3	1.4%
7 days	1	0.5%
Highest level of education	288	100.0%
Associates degree or technical school certificates	11	3.8%
Current graduate student	10	3.5%
Current undergraduate student	4	1.4%
Four-year bachelor's degree	72	25.0%
Grade school or junior high school	1	0.3%
Graduate degree(s)	182	63.2%
High school diploma or equivalent	8	2.8%

One-third of the sample are employed in professional or technical types of employment, while 14.2% are university faculty or staff. Respondents tend to be highly educated, with nearly 90% having completed a four-year degree or higher. During COVID-19 a large portion of the sample (70%) was working or doing schoolwork at home at least one day a week. Of those, 65% did not

go to work or school in person during COVID-19, however approximately 35% of the sample went to work or school in person during COVID-19.

There are some limits to the conclusions that can be made from this study, since the sample is not representative of the Davis population. The primary difference is the lack of students; due to the timing of the survey, few students participated. Typically, in pre-COVID conditions, students make up approximately half of the Davis population.

In addition, approximately 20% of respondents are retired. This is likely higher than the proportion of retired individuals in Davis. It is possible that this group has higher levels of interest in issues surrounding the Capitol Corridor and/or the Davis Amtrak station.

The lack of students is not expected to impact the results related to the use of Amtrak for commutes – since students who commute using Amtrak primarily live outside of Davis and are therefore not part of the target population. Data about travel to the UC Davis campus is collected in an annual campus travel survey; the 2019 report for the survey indicates less than 1% of trips to campus are made by train (Lee 2019), though this is for travel to campus, and is not expected to be for students who live in Davis.

Survey Content

Information about the original survey developed for this project can be found in an earlier report that details the survey development and implementation plan (Pike and Kothawala 2019). The actual survey was modified from the planned version to reflect travel behavior changes made by residents during COVID-19, and the potential long term impacts of those changes, as well as the pandemic at large and lingering concerns about safety using public transit as well as Amtrak.

The survey questions were anchored in three distinct time frames. For background travel patterns: typical travel in January 2020, “prior to any changes you made to your usual routines due to COVID-19.” Interestingly, the survey was launched just as the restrictions on activities in California were beginning to be lifted, although as of the writing of this report, the restrictions have since been largely put back in place. Questions related to changes in patterns were framed as “during COVID-19”. Finally, when asking about future (post-pandemic) travel patterns, the survey asked about travel expectations, “once COVID-19 is no longer a threat.”

The survey had eight sections, as follows:

1. Introduction and screening questions: this section asked respondents if they lived, worked, or went to school in Davis in January 2020; or if they worked/went to school elsewhere.
2. Travel patterns prior to COVID-19: available modes of transportation, days travelling to work, and usual commute mode.
3. Amtrak Capitol Corridor commutes: only viewed by those who reported using the train for at least some commutes. This section covered access and egress modes, the

boarding and alighting stations and time of boarding, as well as the frequency of a set of potential issues experienced by passengers, such as the train being late, or not being able to find a seat on the train.

4. Non-commute travel: frequency of trips in January 2020 for purposes such as dining, non-commute work or school trips, and shopping. This section also asked if the respondent had considered using or ultimately used the train.
5. COVID-19 routines: workdays during the pandemic, and whether or not the respondent physically went to work or school; modes used for those trips. Planned workdays, and modes of transportation after the pandemic.
6. Planned City of Davis programs: brief description of the three programs that will be launched by the City, and the likelihood of use. Those that don't currently use the train were asked if the program would increase their use.
7. Perceptions of risk for performing different activities during COVID-19, and attitudes towards issues related to the pandemic such as whether individuals should wear masks, and if society is overreacting.
8. Socio-demographics: age, gender, profession, household structure, household vehicles and similar socio-demographic and background transportation questions were covered in this section.

Analysis and Results

This analysis includes two parts. First, descriptive analysis of the key dependent variables, and the factors expected to be relevant to those outcomes. Namely, the expected use of the programs planned by the City, and how demographics, previous commute patterns and concerns about COVID-19 relate to those expectations. Many respondents did not answer the screening questions correctly and did not report that they work in Davis or elsewhere, thus they did not see the entire section of the survey related to January 2020 commute patterns. However, many reported occupations in a later survey question, as well as planned future workdays and other information indicating they do indeed work in Davis or elsewhere. Of this group, those who provided contact information will be contacted in order to gather responses to the second and third sections of the survey.

The survey presented three programs to respondents, though the third is not specifically geared to train passengers. Figure 1 shows the survey question related to the carpool program.

Figure 1. Survey Question Describing the Planned Carpool Program



Carpool program with guaranteed parking: in this program drivers and passengers are matched for carpools based on time and geographic location, and will have **guaranteed parking at the Davis Amtrak station.**

Once COVID-19 is no longer a threat, how likely are you to use a **carpool program with guaranteed parking?**

Very likely	Likely	Not applicable	Unlikely	Very unlikely
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The second program was described as: **“Free on-demand ride service:** using an app-based ride service such as **Uber or Lyft**, passengers will ride for **free to or from the Davis Amtrak station.**” The third program: **“Free downtown shuttle:** Davis residents could **connect to downtown and the Amtrak station for free**, with flexible schedules and routes.”

Following these questions that asked how likely they would be to use the program, for the first two programs the survey asked respondents who did not report commuting with the Capitol Corridor, if they would increase their use following the implementation of the program. Possible responses were No, Yes for regular commute, and Yes for non-commute trips.

The free on-demand ride service had the highest level of potential users, with 60% reporting they were likely or very likely to use it. There was also a high level of interest in the shuttle program with more than 50% reporting they were likely or very likely to use it. While only 11% of the sample reported they would be very likely or likely to use the carpool app program. It is possible that the names of the programs play a role in respondents’ interest; both the on-demand and shuttle programs start with the word “free”. The carpool program might be perceived as less user-friendly since carpools typically are arranged ahead of time, and respondents may also have concerns about serving as a driver. It is also possible that COVID-19 has impacted interest in carpooling.

Table 3. Respondents’ Likelihood of Using Planned and Potential Programs

Program	Very likely	Likely	Not apply	Unlikely	Very unlikely	Total
Carpool	11 (4%)	21 (7%)	39 (13%)	64 (21%)	158 (54%)	293
Ridehail	70 (24%)	107 (37%)	21 (7%)	47 (16%)	44 (15%)	289
Shuttle	66 (24%)	79 (29%)	13 (5%)	66 (24%)	48 (18%)	272

The second component of these question is related to whether respondents who did not typically use Amtrak before COVID-19 would increase their use of the train once COVID-19 is no longer a threat. Again, we see differences in the level of interest, and expected use. Three times as many respondents (158 versus 51) reporting they would use the ridehail program than the carpool program.

Table 4. Expected Program Use by Trip Type¹

Program	Yes, Non-commute	Yes Commute	No	Total
Carpool	33 (14%)	18 (8%)	189 (79%)	240
Ridehail	107 (43%)	41 (17%)	98 (40%)	246

1. Note the smaller sample size for these questions, as those who reported commuting with the Capitol Corridor did not see these questions when taking the survey.

Next, I examine how factors expected to be important in the decision to use these programs relate to responses about the potential interest in these programs. Factors such as age and gender that are known to impact travel behavior are explored, as well as income. In addition, respondents’ sentiments of risk associated with using the train during COVID-19 are potential factors that will limit their likelihood of using these programs. In Table 5 the sample is adjusted to include only those individuals who answered all of the questions presented here.

In Table 5 demographic and household information is presented according respondents’ reported likelihood of using the carpool and ridehail programs. First, household vehicle holdings may play a role in whether individuals foresee using the programs, however the results do not show a clear pattern, and neither is statistically significant. Similarly, there are not different outcomes likely for men versus women, when it comes to the use of the programs. Household income, however, may lead to different levels of use of the programs; in particular, the carpool program is likely to have more potential participants among those in the lowest income categories.

Table 5. Household and Demographic Characteristics by Expected Program Use^{1, 2}

Household Vehicles	Expected Use of the Amtrak Access Program (Carpool Ridehail)				
	Very likely	Likely	Not applicable	Unlikely	Very unlikely
Carpool (N = 280; p = 0.148)					
None (N = 12)	0 (0%)	0 (0%)	4 (33%)	2 (17%)	6 (50%)
1 Car (N = 96)	3 (3%)	6 (6%)	14 (15%)	16 (17%)	57 (59%)
2 Cars (N = 121)	4 (3%)	9 (7%)	15 (12%)	32 (26%)	61 (50%)
3 Cars (N = 31)	1 (3%)	0 (0%)	3 (10%)	5 (16%)	22 (71%)
4 or more (N = 20)	2 (10%)	4 (20%)	1 (5%)	4 (20%)	9 (45%)
Ridehail (N = 279; p = 0.882)					
None (N = 12)	1 (8%)	6 (50%)	2 (17%)	1 (8%)	2 (17%)
1 Car (N = 98)	23 (23%)	35 (36%)	6 (6%)	17 (17%)	17 (17%)
2 Cars (N = 119)	31 (26%)	46 (39%)	8 (7%)	20 (17%)	14 (12%)
3 Cars (N = 31)	7 (23%)	14 (45%)	2 (6%)	4 (13%)	4 (13%)
4 or more (N = 19)	5 (26%)	4 (21%)	2 (11%)	3 (16%)	5 (26%)
Gender					
Carpool (N = 278; p = 0.203)					
Decline to answer (N = 11)	2 (18%)	1 (9%)	1 (9%)	2 (18%)	5 (45%)
Female (N = 123)	4 (3%)	10 (8%)	19 (15%)	28 (23%)	62 (50%)
Male (N = 144)	4 (3%)	7 (5%)	16 (11%)	29 (20%)	88 (61%)
Ridehail (N = 277; p = 0.535)					
Decline to answer (N = 11)	4 (36%)	3 (27%)	1 (9%)	2 (18%)	1 (9%)
Female (N = 124)	37 (30%)	44 (35%)	8 (6%)	18 (15%)	17 (14%)
Male (N = 142)	25 (18%)	58 (41%)	10 (7%)	25 (18%)	24 (17%)
Income					
Carpool (N = 263; 0.091)					
\$25,000 to \$49,999 (N = 27)	2 (7%)	3 (11%)	6 (22%)	3 (11%)	13 (48%)
\$50,000 to \$74,999 (N = 28)	3 (11%)	4 (14%)	3 (11%)	5 (18%)	13 (46%)
\$75,000 to \$99,999 (N = 33)	2 (6%)	0 (0%)	4 (12%)	6 (18%)	21 (64%)
\$100,000 to \$149,999 (N = 66)	1 (2%)	6 (9%)	10 (15%)	17 (26%)	32 (48%)
\$150,000 or more (N = 109)	1 (1%)	5 (5%)	10 (9%)	25 (23%)	68 (62%)
Ridehail (N = 262; p = 0.314)					
\$25,000 to \$49,999 (N = 26)	5 (19%)	11 (42%)	3 (12%)	2 (8%)	5 (19%)
\$50,000 to \$74,999 (N = 27)	7 (26%)	11 (41%)	4 (15%)	0 (0%)	5 (19%)
\$75,000 to \$99,999 (N = 33)	10 (30%)	10 (30%)	1 (3%)	6 (18%)	6 (18%)
\$100,000 to \$149,999 (N = 67)	13 (19%)	21 (31%)	7 (10%)	15 (22%)	11 (16%)
\$150,000 or more (N = 109)	30 (28%)	44 (40%)	5 (5%)	18 (17%)	12 (11%)

1. Samples differ due to missing responses on each item. Percent values add to 100 across rows
2. P-values shown for chi-squared tests of distributions across categories

Next, we turn to how the reported likelihood of using the program relates to past use of Amtrak as well as to the risk of using the train during COVID-19 (Table 6).

Table 6. Respondent Use of Amtrak and COVID-19 Risk Perception by Expected Program Use^{1,2}

Used Amtrak in Commutes	Expected Use of the Amtrak Access Program (Carpool Ridehail)				
	Very likely	Likely	Not applicable	Unlikely	Very unlikely
Carpool (N = 282; p = 0.478)					
No (N = 260)	10 (4%)	19 (7%)	35 (13%)	58 (22%)	138 (53%)
Yes (N = 22)	0 (0%)	1 (5%)	2 (9%)	3 (14%)	16 (73%)
Ridehail (N = 279; p = 0.132)					
No (N = 257)	63 (25%)	100 (39%)	19 (7%)	40 (16%)	35 (14%)
Yes (N = 22)	3 (14%)	6 (27%)	1 (5%)	5 (23%)	7 (32%)
Used Amtrak for Some Trips					
Carpool (N = 278; p = 0.201)					
Didn't consider (N = 52)	2 (4%)	0 (0%)	8 (15%)	8 (15%)	34 (65%)
Considered, didn't use (N = 48)	2 (4%)	7 (15%)	6 (13%)	12 (25%)	21 (44%)
Did use (N = 178)	6 (3%)	13 (7%)	23 (13%)	39 (22%)	97 (54%)
Ridehail (N = 275; p < 0.001)					
Didn't consider (N = 49)	4 (8%)	9 (18%)	7 (14%)	9 (18%)	20 (41%)
Considered, didn't use (N = 74)	14 (30%)	18 (38%)	3 (6%)	8 (17%)	4 (9%)
Did use (N = 179)	49 (27%)	76 (42%)	9 (5%)	27 (15%)	18 (10%)
Perceived Risk of Using the Train during COVID-19					
Carpool (N = 286; p = 0.005)					
Low (N = 16)	3 (19%)	0 (0%)	1 (6%)	4 (25%)	8 (50%)
Medium (N = 104)	1 (1%)	8 (8%)	19 (18%)	22 (21%)	54 (52%)
High (N = 118)	1 (1%)	9 (8%)	14 (12%)	24 (20%)	70 (59%)
Very high (N = 48)	5 (10%)	4 (8%)	3 (6%)	11 (23%)	25 (52%)
Ridehail (N = 282; p = 0.479)					
Low (N = 18)	3 (19%)	4 (25%)	1 (6%)	3 (19%)	5 (31%)
Medium (N = 96)	27 (26%)	43 (42%)	8 (8%)	15 (15%)	9 (9%)
High (N = 121)	25 (21%)	46 (39%)	8 (7%)	18 (15%)	21 (18%)
Very high (N = 47)	15 (31%)	13 (27%)	3 (6%)	10 (20%)	8 (16%)

1. Samples differ due to missing responses on each item. Percent values add to 100 across rows
2. P-values shown for chi-squared tests of distributions across categories

First, those who have used Amtrak in their commutes responded that they will be less likely to use the ridehail program; with more than 60% of those who have not used Amtrak in their

commutes reporting they are likely or very likely to use the ridehail program, compared to closer to 47% reporting they would use the program among those who have used Amtrak for their commutes. This likely indicates that there are many individuals who would use the capitol corridor if the parking capacity challenges were removed – which is the intended goal of these programs, after all.

The opposite pattern occurs for those who reported using Amtrak for some trips. This could include some who have used Amtrak for commute trips, but this question was asked in a section of the survey that focused on non-commute travel. Those that reported using Amtrak or had considered using Amtrak have much higher levels of potentially using the programs than those who haven't considered using Amtrak. Here, the opposite result is likely due to those who use Amtrak for non-commute travel having less of a routine than those who use Amtrak for their commute; and may also be because these trips are probably made at a variety of times during the day, including during the later morning, or middle of the day when the parking lot is known to be fully occupied. Using ridehail is probably viewed as an easier alternative to driving and finding parking somewhere outside of the Amtrak station parking lot. Interestingly, there are no differences in the perceived risks of using the train during COVID-19 and the anticipated use of the ridehail program, however, the results for the carpool program suggest that those who perceive a lower risk of riding the train may be more likely to use the carpool program. There are so few respondents that indicated they are likely or very likely to use this program however, that it is not clear what might be driving this result.

Finally, looking specifically at those who do not use Amtrak for any of their commute trips, even when it was available, participants were asked to select reasons for not using Amtrak.

Table 7. Reasons for Not Using Train for Those with Train Available

Reason for not using Amtrak (select all that apply) N = 25	Not selected	Selected
The Davis Amtrak station is too far from my home	18	7
The nearest station is too far from my work or school	12	13
I do not like the train	25	0
The train schedule does not match my schedule	15	10
The train takes too much time	19	6
I need to go to multiple destinations during the day	17	8
The train is too expensive	11	14
I would have had to make a transfer to BART, or another transit system	23	2

Though there were only 25 respondents who answered these questions, there are some notable patterns: a little over half of the respondents indicated the station is too far from their work or

school location, and that the train is too expensive. In addition, 10 out of the 25, or 60%, selected that their schedule does not match that of the train. No respondents reported that they do not like the train, and only two reported having to make a transfer as the reason for not using the Capitol Corridor.

Conclusions

The results presented here suggest that there is a high level of interest in a program involving the use of on-demand ridehailing to get to and from the Davis Amtrak station, and that there is some potential for this type of program to increase the use of the Capitol Corridor for both commute and non-commute travel. A program involving ridehail may have more support than a program involving traditional rideshare/carpool since there is less work involved for participants. The carpool program may be perceived as more involved for potential users, since some participants would be the driver, whereas with the ridehail program, program users would always be a passenger.

The use of the ridehail program is most likely for those that were not using the train as part of their commute in January 2020, before COVID-19. However, those that had used the Capitol Corridor for other trips reported higher levels of expected use than those that did not. These results suggest that there are individuals who would begin using the train if this program is introduced, and that the program would benefit those who do not use the train for regular travel, but who do make trips outside of Davis with the train.

The risk of using the train during COVID-19 was more strongly related to the use of the carpool program, in the expected direction – those that perceive a lower level of risk are more likely to use the program. For the ridehail program, results were not significant, and do not show any clear patterns. However, the City should take these concerns into account when finalizing the design and launch of the programs.

Both programs, in addition to the downtown shuttle garnered interest from the participants in this survey and will likely be used once implemented. The nature of stated preference surveys means that we cannot know precisely how much the programs will be used, but the other important factors, such as income, and the use of the Capitol Corridor can help inform the outreach for and implementation of the program.

Further work will involve comparing these results to data collected by the City in the summer of 2019. The next stages of analysis will include modeling the expectation to use the programs in consideration of factors such as past use of Amtrak, current travel behavior, and socio-demographic characteristics. In the future, the remaining phases of this study will be launched in coordination with the City's implementation of the programs examined here. These phases will evaluate the programs once they have been launched and at the end of the pilot period; to inform the longer-term implementation.

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Weblinks

- CCJPA Capitol Corridor On-Board Surveys, December, 1999 through May 2018
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- Davis Amtrak Station Details <https://www.capitolcorridor.org/stations/davis/>
- U.S. Census 2011 Quick Facts
<https://www.census.gov/quickfacts/fact/table/daviscitycalifornia/PST045217>
- David MacKenzie <https://faculty.washington.edu/dwhm/2017/04/17/rethinking-the-park-and-ride-for-the-21st-century-part-i/>
- Capitol Corridor Schedule https://www.capitolcorridor.org/wp-content/uploads/2018/05/Weekdays_May2018.pdf.pdf
- City of Summit <https://www.cityofsummit.org/formcenter/parking-services-8/summit-ridesharing-program-52>
- ACS 2017 1-year estimate for C08006 Sex of Workers By Means of Transportation to Work:
https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_1YR_C08006&prodType=table

Data Management

Products of Research

The data collected for the study include responses to a survey administered online to Davis residents in the summer of 2020. The survey covers topics related to travel patterns before, and during the COVID-19 pandemic, and participants sentiments about risks associated with different activities and transportation modes resulting from the pandemic. In addition, the survey includes information related to the use of the Amtrak Capitol Corridor and the potential for respondents to use two programs that will improve access to the station. Finally, the survey gathers information about participants' plans for returning to work and expected travel patterns once the pandemic is no longer a threat.

Data Format and Metadata Standards

The data was collected using the survey platform Qualtrics and downloaded into Microsoft CSV files. The data has been processed using R statistical software and saved into updated clean Microsoft Excel files.

Data Access and Sharing

The project data will be made available through the Dryad Digital Repository with the title: Davis Amtrak Station Pilot Project Evaluation. The publicly available data will have no identifying information for survey participants. The data has been made public with the following citation:

Pike, Susan (2020), Davis Amtrak station pilot project evaluation, Dryad, Dataset, and access link: <https://doi.org/10.25338/B8ZS7R>.

Reuse and Redistribution

There are no restrictions on how the data can be reused and redistributed by the general public.

Appendix A: Final Survey

The survey begins on the next page.

City of Davis Amtrak Access

Start of Block: Introduction

Q1.1 Welcome to City of Davis Amtrak Station Access Survey!

This survey is intended for anyone living in, working in, or commuting through Davis, CA.

The results of this survey will provide city transportation planners with important insights about how people like you get to the Davis Amtrak station. Your input will inform programs set to launch this fall that that will improve access to the station. Please take 10-15 minutes to complete this survey. Your input is important!

Participating in this survey is voluntary, and all responses are completely confidential. 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.

As a small thank you for your participation, you will be entered into a drawing for one of 10 \$25 Visa gift cards! If you are unable to complete the survey but would like to be included in the drawing, please email Dr. Susan Pike at scpike@ucdavis.edu to be entered.

Thanks for participating!

Susan Pike PhD, Researcher, Institute of Transportation Studies (scpike@ucdavis.edu) Brian Abbanat, Senior Transportation Planner, City of Davis (BAbbanat@cityofdavis.org)

End of Block: Introduction

Start of Block: Screening Questions

Q2.1

We will start with a few questions about where you live and work.

Do you live, work or go to school in the city of Davis? (check all that apply)

- I live in the City of Davis (1)
 - I work in the City of Davis (2)
 - I go to school in the City of Davis (3)
-

Display This Question:

If If We will start with a few questions about where you live and work. Do you live, work or go to school in the city of Davis? (check all that apply) q://QID427/SelectedChoicesCount Is Less Than 1

Q2.2 Does your regular commute to work or school go through Davis? In other words, could you use the Davis Amtrak station and take the Capitol Corridor for part of your commute to work or school?

- Yes, my regular commute goes through Davis. (2)
- No, my regular commute does not go through Davis. (1)

Display This Question:

If If We will start with a few questions about where you live and work. Do you live, work or go to school in the city of Davis? (check all that apply) q://QID427/SelectedChoicesCount Is Less Than 1

And Does your regular commute to work or school go through Davis? In other words, could you use the D... = No, my regular commute does not go through Davis.

Q110 Do you live elsewhere in Yolo County (outside of Davis)?

- Yes, I live in Yolo County, outside of Davis (23)
- No, I do not live in Yolo county (24)

Display This Question:

If Does your regular commute to work or school go through Davis? In other words, could you use the D... = No, my regular commute does not go through Davis.

And We will start with a few questions about where you live and work. Do you live, work or go to school in the city of Davis? (check all that apply) q://QID427/SelectedChoicesCount Is Less Than 1

And Do you live elsewhere in Yolo County (outside of Davis)? = No, I do not live in Yolo county

Q2.3

Thank you for your interest in this survey! This study aims to address factors impacting the use of the Davis Amtrak station, however based on your answers to these first few questions, it appears that you don't have any travel for which you might use the Davis Amtrak station or the

Capitol Corridor. We do not need any additional information from you at this time. You are still eligible to enter into our gift card drawing.

Please contact Susan Pike at scpike@ucdavis.edu if you would like more information about this survey or our gift card drawing.

Skip To: End of Survey If Thank you for your interest in this survey! This study aims to address factors impacting the use...() Is Displayed

End of Block: Screening Questions

Start of Block: Section 3 - Available Transportation Modes

Q3.1

Next, we have a few questions about the transportation options available to you for your regular commute to work or school. For these questions think about your usual commute. If you sometimes travel to other locations, we'll ask you about that later.



Q3.2 Which of the following transportation options are available to you for getting to work or school, whether or not you use them? (check all that apply)

- Walk (1)
 - Skate or skateboard (2)
 - Bike (3)
 - Electric bike (5)
 - Bikeshare - for example Jump Bikes (4)
 - Motorcycle or scooter (6)
 - Drive alone in a car (or other vehicle) (7)
 - Carpool or vanpool with others also going to your (or a nearby) destination (either as driver or passenger) (8)
 - Get a ride (someone drops you off and continues on elsewhere) (9)
 - Bus (10)
 - Train or light rail (11)
 - Taxi, Uber, Lyft or other ride services (12)
 - Other (please write in) (13) _____
-



Q3.3 Do you currently have a driver's license?

- Yes (1)
 - No (0)
-



Q3.4 During a typical week, how many days do you go to work or school?

- Less than once a week (0)
 - 1 day per week (1)
 - 2 days per week (2)
 - 3 days per week (3)
 - 4 days per week (4)
 - 5 days per week (5)
 - 6 days per week (6)
 - 7 days per week (7)
-



Q3.5 What means of transportation do you usually use to travel to work or school? (If you use more than one mode of transportation, please select the one you usually use for most of the distance).

- Walk (1)
- Skate or skateboard (2)
- Bike (3)
- Electric bike (4)
- Bikeshare - for example Jump Bikes (5)
- Motorcycle or scooter (6)
- Drive alone in a car (or other vehicle) (7)
- Carpool or vanpool with others also going to your (or a nearby) destination (either as driver or passenger) (8)
- Get a ride (someone drops you off and continues on elsewhere) (9)
- Bus (10)
- Train or light rail (11)
- Taxi, Uber, Lyft or other ride services (12)
- Other: (13) _____

End of Block: Section 3 - Available Transportation Modes

Start of Block: Section 4 - Travel Modes Last Week

Q4.1 Next, let's consider your travel to work or school, specifically for last week.



Q4.2 On what days last week did you travel to work or school?

- Monday (1)
- Tuesday (2)
- Wednesday (3)
- Thursday (4)
- Friday (5)
- Saturday (6)
- Sunday (7)

Display This Question:

*If On what days last week did you travel to work or school?
q://QID364/SelectedChoicesCount Is Greater Than 1*



Q4.3 **First think back to the entire week.** 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 school or work location -- even if it was just for part of the way -- on any day last week. (check all that apply)

- Walk (1)
- Skate or skateboard (2)
- Bike (3)
- Electric bike (4)
- Bikeshare - for example Jump Bikes (5)
- Motorcycle or scooter (6)
- Drive alone in a car (or other vehicle) (7)
- Carpool or vanpool with others also going to your (or a nearby) destination (either as driver or passenger) (8)
- Get a ride (someone drops you off and continues on elsewhere) (9)
- Bus (10)
- Train or light rail (11)
- Taxi, Uber, Lyft or other ride services (12)
- Other: (13) _____

Carry Forward Selected Choices from "On what days last week did you travel to work or school?"

Carry Forward Selected Choices from "First think back to the entire week. 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 school or work location -- even if it was just for part of the way -- on any day last week. (check all that apply)"



Q4.4 Next, consider each day specifically. Select the means of transportation you used on your way to work or school each day. (If you used more than one means, select whatever you used for **most of the distance.**)

	Walk (1)	Skateboard (2)	Bike (3)	Electric bike (4)	Bikes share - for example Jump Bikes (5)	Motorcycle or scooter (6)	Drive alone in a car (or other vehicle) (7)	Carpool or vanpool with others going to your (or a nearby) destination (either as driver or passenger) (8)	Get a ride (someone drops you off and continues elsewhere) (9)	Bus (10)	Train or light rail (11)	Taxi, Uber, Lyft or other ride services (12)	Other: (13)
Monday (x1)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tuesday (x2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wednesday (x3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thursday (x4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friday (x5)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Saturday (x6)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunday (x7)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Display This Question:

If First think back to the entire week. Please tell us all the different means of transportation you... = Train or light rail

Or Next, consider each day specifically. Select the means of transportation you used on your way to... [Train or light rail] (Count) >= 1

Q4.5 Which train service(s) did you use on your way to work or school last week? (check all that apply)

- Amtrak Capitol Corridor (1)
 - Bay Area Rapid Transit (BART) (2)
 - Sacramento Regional Transit (Sac RT) (3)
 - Other: (4) _____
-

Display This Question:

If Which of the following transportation options are available to you for getting to work or school,... = Train or light rail



Q68 Compared to $\{Q3.5/ChoiceGroup/SelectedChoices\}$ for your commute, **taking the train would be...**

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Faster	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Slower
Convenient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Inconvenient
Productive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unproductive
Comfortable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Uncomfortable
Safe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unsafe
Flexible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Inflexible
Relaxing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Stressful
Environmentally friendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not environmentally friendly
Pleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unpleasant
Social	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Anti-social

End of Block: Section 4 - Travel Modes Last Week

Start of Block: Section 5 - Capitol Corridor Commute

Display This Question:

If Next, consider each day specifically. Select the means of transportation you used on your way to... [Train or light rail] (Count) >= 1

Or First think back to the entire week. Please tell us all the different means of transportation you... = Train or light rail

Q5.1 In this section we'll ask you about your commutes using the Amtrak Capitol Corridor.

Display This Question:

If First think back to the entire week. Please tell us all the different means of transportation you... = Train or light rail

Or Next, consider each day specifically. Select the means of transportation you used on your way to... [Train or light rail] (Count) >= 1

Q5.2

On the days last week that you used the Capitol Corridor, at what station and at what time did you **get on** the train?

(If you got on the train at different times on different days, please select the *time that you most often got on* the train.)

Boarding station (17)

Time of boarding (11)

▼ Roseville (through bus) (1) ... Fairfield-Vacaville ~ 10:45:00 AM (29)

Display This Question:

If First think back to the entire week. Please tell us all the different means of transportation you... = Train or light rail

Or Next, consider each day specifically. Select the means of transportation you used on your way to... [Train or light rail] (Count) >= 1



Q5.3

On the days last week that you used the Capitol Corridor, what means of transportation did you use to travel between your home and the station? (If you used different means of transportation on different days, please select the means of transportation you *usually* used to get to the station.)

- Walk (1)
- Skate or skateboard (2)
- Bike (3)
- Electric bike (4)
- Bikeshare - for example Jump Bikes (5)
- Motorcycle or scooter (6)
- Drive alone in a car (or other vehicle) (7)
- Carpool or vanpool with others also going to your (or a nearby) destination (either as driver or passenger) (8)
- Get a ride (someone drops you off and continues on elsewhere) (9)
- Bus (10)
- Taxi, Uber, Lyft or other ride services (12)
- Other: (13) _____

Display This Question:

If First think back to the entire week. Please tell us all the different means of transportation you... = Train or light rail

Or Next, consider each day specifically. Select the means of transportation you used on your way to... [Train or light rail] (Count) >= 1

Q5.4

On the days last week that you used the Capitol Corridor, at what station did you **get off** the train? ((If you got off the train at different stations on different days, please select the *station that you most often got off* the train.)

Alighting Station (1)

▼ San Jose (1) ... Roseville (through-bus) ~ 10:00:00 PM (127)

Display This Question:

If First think back to the entire week. Please tell us all the different means of transportation you... = Train or light rail

Or Next, consider each day specifically. Select the means of transportation you used on your way to... [Train or light rail] (Count) >= 1



Q5.5

On the days last week that you used the Capitol Corridor, what means of transportation did you use to travel between the station and your final destination (If you used different means of transportation on different days, please select the means of transportation you *usually* used to travel from the station to work or school.)

- Walk (1)
- Skate or skateboard (2)
- Bike (3)
- Electric bike (4)
- Bikeshare - for example Jump Bikes (5)
- Motorcycle or scooter (6)
- Drive alone in a car (or other vehicle) (7)
- Carpool or vanpool with others also going to your (or a nearby) destination (either as driver or passenger) (8)
- Get a ride (someone drops you off and continues on elsewhere) (9)
- Bus (10)
- Taxi, Uber, Lyft or other ride services (12)
- Other: (13) _____

Display This Question:

If First think back to the entire week. Please tell us all the different means of transportation you... = Train or light rail

Or Next, consider each day specifically. Select the means of transportation you used on your way to... [Train or light rail] (Count) >= 1



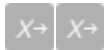
Q5.6 Last week, you commuted using the Capitol Corridor on some days, but not others. Which of the following caused you to not use the Capitol Corridor on those days? Select all that apply, even if they are appropriate for different days.

- I worked at home. (1)
- I worked in a different location. (2)
- I worked out of town. (3)
- I had a different schedule. (4)
- I did not work that day. (5)
- I needed a vehicle during the day. (6)
- I needed a vehicle before or after work. (7)
- My usual means of getting to the station was not available. (8)
- Other (please write in) (9) _____

Display This Question:

If First think back to the entire week. Please tell us all the different means of transportation you... = Train or light rail

Or Next, consider each day specifically. Select the means of transportation you used on your way to... [Train or light rail] (Count) >= 1



Q67 Compared to driving for my commute, **taking the train is...**

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	
Faster	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Slower
Convenient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Inconvenient
Productive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unproductive
Comfortable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Uncomfortable
Safe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unsafe
Flexible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Inflexible
Relaxing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Stressful
Environmentally friendly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Not environmentally friendly
Pleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Unpleasant
Social	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Anti-social

Display This Question:

If First think back to the entire week. Please tell us all the different means of transportation you... = Train or light rail

Or Next, consider each day specifically. Select the means of transportation you used on your way to... [Train or light rail] (Count) >= 1



Q5.7 Now, think back to the past month. When using the Capitol Corridor for commuting **in the past month**, how often did you experience any of the following?

	Never (1)	One time (2)	A few (2-3) times (3)	Several (4-5) times (4)	More than 5 times (5)
I couldn't find car parking at the station. (Q5.7_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I couldn't find bicycle parking at the station. (Q5.7_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I missed the train due to parking my car off-site. (Q5.7_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I missed the train due to parking my bike off-site. (Q5.7_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My train was late. (Q5.7_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had difficulty finding a seat on the train. (Q5.7_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My train was delayed en route. (Q5.7_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other (please write in) (Q5.7_8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Display This Question:

If First think back to the entire week. Please tell us all the different means of transportation you... = Train or light rail

Or Next, consider each day specifically. Select the means of transportation you used on your way to... [Train or light rail] (Count) >= 1

Q5.8 Use the space below to tell us anything else about your commutes to or from the Davis Amtrak station on the Capitol Corridor.

End of Block: Section 5 - Capitol Corridor Commute

Start of Block: Section 6 - Recreational / Non-commute Travel

Q6.1

In this section, we will ask you about your travel outside of Davis, to locations that might be reached using the Davis Amtrak station and the Capitol Corridor train.

Think about your travel for social or recreational activities **and non-commute trips** for work or school, such as for a special event, meeting, or class.

Q6.2 During the past month, how often did you make trips with the following purposes to locations outside of Davis?

	None (1)	One time (2)	2-3 times (3)	4-9 times (4)	10 or more times (5)
Work or school (non-commute) (Q6.2_1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dining (Q6.2_2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social (Q6.2_3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreational (Q6.2_4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entertainment (Q6.2_5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal business (Q6.2_6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shopping (Q6.2_7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vacation travel (including travel to airports) (Q6.2_9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Carry Forward Unselected Choices from "During the past month, how often did you make trips with the following purposes to locations outside of Davis? "



Q6.3 Thinking of **your most recent trip outside of Davis** for each of the purposes you noted above, which means of transportation did you use? (If you used more than one means of transportation, please select the one you used for *most of the distance*.)

	Bike, Electric bike or Bikeshare (3)	Motorcycle or Scooter (6)	Drive alone, Carpool or Get a ride (7)	Bus (10)	Capitol Corridor Train (11)	Taxi, Uber, Lyft, or other ride services (12)
Work or school (non-commute) (x2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dining (x1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Social (x3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreational (x4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entertainment (x5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal business (x6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shopping (x8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vacation travel (including travel to airports) (x9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q114 For any of the non-commute trips you made during the past month, did you consider using the Capitol Corridor train?

- Yes (1)
- No (3)

Q7.1 For your recent non-commute trips to places outside of Davis, why didn't you use the Capitol Corridor train? (check all that apply)

- I didn't make any recent non-commute trips outside of Davis (10)
- There were no trains to my destination (1)
- The nearest station was too far from my final destination (2)
- I do not like the train (3)
- My schedule did not match the train schedule (4)
- The train takes too much time (5)
- I went to multiple destinations (6)
- The train is too expensive (8)
- I would have had to make a transfer to BART, or another local transit system (11)
- Other (please write in) (9) _____

End of Block: Section 6 - Recreational / Non-commute Travel

Start of Block: Section 7 - Amtrak Access Programs

Q7.2 Later this fall, the City of Davis will introduce programs designed to make it easier to get to and from the Davis Amtrak station and downtown Davis. For each of these programs, described below, tell us how likely you would be to use them.



Q58 Carpool program with guaranteed parking: drivers and passengers are matched for carpools based on time and geographic location, and will have **guaranteed parking at the Davis Amtrak station.**

How likely are you to use a **carpool program with guaranteed parking?**

- Very likely (1)
 - Likely (2)
 - Not sure (3)
 - Unlikely (4)
 - Very unlikely (5)
-



Q59

Free on-demand ride service: using an app-based ride service such as **Uber or Lyft**, passengers will ride for **free to or from the Davis Amtrak station**.

How likely are you to use a **free on-demand ride service**?

- Very likely (1)
 - Likely (2)
 - Not sure (3)
 - Unlikely (4)
 - Very unlikely (5)
-



Q60 Free downtown shuttle: Davis residents could **connect to downtown and the Amtrak station for free**, with flexible schedules and routes.

How likely are you to use a **free downtown shuttle**?

- Very likely (1)
 - Likely (2)
 - Not sure (3)
 - Unlikely (4)
 - Very unlikely (5)
-



Q7.5 For the programs you may use, how often would you use them?

	Less than once a month (1)	About once a month (2)	About once a week (3)	2-3 times a week (4)	4 or more times a week (5)
<p><i>Carpool program with guaranteed parking: drivers and passengers are matched for carpools based on... = Very likely</i> Or <i>Carpool program with guaranteed parking: drivers and passengers are matched for carpools based on... = Likely</i></p> <p>Carpool program with guaranteed parking (Q7.5_1)</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><i>Free on-demand ride service: using an app-based ride service such as Uber or Lyft, passengers will... = Very likely</i> Or <i>Free on-demand ride service: using an app-based ride service such as Uber or Lyft, passengers will... = Likely</i></p> <p>Free on-demand ride service (Q7.5_2)</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<p><i>Free downtown shuttle: Davis residents could connect to downtown and the Amtrak station for free... = Very likely</i> Or <i>Free downtown shuttle: Davis residents could connect to downtown and the Amtrak station for free... = Likely</i></p> <p>Free downtown shuttle (Q7.5_3)</p>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q7.7 Is there anything else you would like the City to consider when planning programs such as those described above?

End of Block: Section 7 - Amtrak Access Programs

Start of Block: Section 8 - Attitudes and Opinions

Q8.1 In this section we ask you about your opinions about some transportation topics. There are no right or wrong answers; select the answer that best describes your own thoughts.

Q8.2 Indicate your agreement with the following statements. There are no right or wrong answers.

	Strongly agree (25)	Agree (26)	Neither agree nor disagree (27)	Disagree (28)	Strongly disagree (29)
The social environment of my current commute is pleasant. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would like my commute to take less time. (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My commute is convenient for me. (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would like my commute to be more comfortable. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My commute is a useful transition between home and the rest of my day. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I do not have any other commute options. (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Many people I know commute by \${Q3.5/ChoiceGroup/SelectedChoices} . (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to make good use of the time I spend commuting. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q112

Please indicate your level of agreement with the following statements. There are no right or wrong answers.

	Strongly agree (5)	Agree (4)	Neither agree nor disagree (3)	Disagree (2)	Strongly disagree (1)
I like driving a car. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My schedule makes it hard for me to use public transportation. (22)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like riding a bicycle. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I try to limit my driving as much as possible. (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I need my car to do many of my daily activities. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer to be a driver rather than a passenger. (21)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Travel time is generally wasted time. (14)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like using public transit. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I need my car to carry items I cannot transport by other means. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am committed to an environmentally-friendly lifestyle. (24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The Capitol Corridor train is popular among people I know. (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of Block: Section 8 - Attitudes and Opinions

Start of Block: Section 9 - Demographic Characteristics

Q10.1 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 Davis community and surrounding areas, as a whole. Your answers are confidential and will not be used for any other purposes.



Q10.2 In what year were you born?



Q10.6 What is the highest level of education you have completed?

- No formal education (1)
 - Grade school or junior high school (2)
 - High school diploma or equivalent (3)
 - Associates degree or technical school certificates (4)
 - Current undergraduate student (5)
 - Four-year bachelor's degree (6)
 - Current graduate student (7)
 - Graduate degree(s) (8)
-

Display This Question:

If What is the highest level of education you have completed? != Current undergraduate student

And What is the highest level of education you have completed? != Current graduate student



Q10.7 Which of the following options best describes your current employment?

- Management or administrative (1)
 - Professional or technical (2)
 - Clerical and administrative support (3)
 - Services or repair (4)
 - Sales or marketing (5)
 - Production/construction or crafts (6)
 - Education (K-12) (7)
 - Other (please write in) (8) _____
-

Which of the following most closely resembles your work schedule?

- Part time (less than 35 hours per week) (1)
 - Conventional full time (2)
 - Alternative or variable full time (3)
 - Other (please write in) (4) _____
-

JS

Q117 Type an address, cross street, or drag the marker to your work or nearest intersection to your work. (This information will only be used to look at general travel patterns, and will not be used for any other purposes)



Q10.9 What type of housing do you live in?

- Stand alone house (1)
 - Attached home/duplex/towhhouse (2)
 - Apartment or condo (3)
 - Dormitory or group housing (4)
 - Accessory dwelling unit (i.e. “granny flat” or an “in-law unit”) (5)
 - Mobile home (6)
 - Other (please write in) (7) _____
-



Q115 Type an address, cross street, or drag the marker to your home or nearest intersection to your home. (This information will only be used to look at general travel patterns, and will not be used for any other purposes)

Q10.11 Do you live alone or with other people?

- I live alone (1)
 - I live with roommate(s), housemate(s), or in a dorm (2)
 - I live with family, a partner, or others with whom I share some income -- *we'll call them your household* (3)
-

Display This Question:

*If Do you live alone or with other people? = I live with family, a partner, or others with whom I share some income -- **we'll call them your household***

Q10.12 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 less than 6 (1) _____
- Age 6-15 (2) _____
- Age 16-17 (3) _____
- Age 18-25 (4) _____
- Age 26-65 (5) _____
- Age 66 or older (6) _____

Q10.10 How many operational motor vehicles (cars, trucks, motorcycles, etc.) are owned by you or other members of your household? (*Remember, your household includes you and the people you share income with, and **does not include roommates or housemates** with whom you don't share income*).

- 1 (1)
- 2 (2)
- 3 (3)
- 4 or more (4)



Q65 Which of the following categories contains your approximate annual household income before taxes? (*Remember, your household includes you and the people you share income with, and **does not include roommates or housemates** with whom you don't share income*).

- Less than \$25,000 (1)
- \$25,000 to \$49,999 (2)
- \$50,000 to \$74,999 (3)
- \$75,000 to \$99,999 (4)
- \$100,000 to \$149,999 (5)
- \$150,000 or more (6)

Q10.5 How do you most closely identify?

- Female (1)
- Male (2)
- Not listed (please write in) (3)

- Decline to answer (4)

Q64

Please tell us which race/ethnicity best describes you (select all that apply):

- Asian/Pacific Islander/Native Hawaiian (1)
- Black/African American (2)
- Hispanic/Latino (6)
- Native American (3)
- White/Caucasian (4)
- Other (please write in): (5) _____

End of Block: Section 9 - Demographic Characteristics

Start of Block: Section 10 - Follow up



Q11.2 Can we contact you....

	Yes (1)	No (0)
If you win one of the gift cards? (1)	<input type="radio"/>	<input type="radio"/>
If we have questions about your survey responses? (3)	<input type="radio"/>	<input type="radio"/>
To invite you to participate in a follow-up survey about the Davis Amtrak station programs? (2)	<input type="radio"/>	<input type="radio"/>

Display This Question:

If Can we contact you.... [Yes] (Count) >= 1

Q11.3 Please provide us with your preferred means of contact:

- Name (1) _____
- Email address (2) _____
- Phone number (6) _____
- Mailing Address (3) _____

Q11.5 Is there anything else you would like to tell us about transportation in the City of Davis, or the Davis Amtrak station and Capitol Corridor train?

We welcome any additional comments in the space below.

Skip To: End of Survey If Is there anything else you would like to tell us about transportation in the City of Davis, or th... =

End of Block: Section 10 - Follow up