



Date: May 2, 2016

To: Travis Jensen (Acting PM for Wilf Sommerkorn)

Organization: Salt Lake County, Office of Regional Development

From: Michael Hintze, AICP, Zan Frackelton - Toole Design Group; Kordel Braley - RSG, Inc.

Project: Salt Lake County Active Transportation Implementation Plan

Re: Survey Results

MEMORANDUM

Executive Summary

Active transportation plays an important role in transportation systems. Bicycling and walking support and connect other modes such as transit, as well as offer a healthy option for getting around; and for some, active transportation is the only option available. Many cities and regions are increasingly interested in making bicycling and walking a more attractive mode of travel for a variety of reasons, including concerns about air quality, infrastructure costs, and public health issues.

As part of the Salt Lake County Active Transportation Implementation Plan (ATIP), the Salt Lake County Regional Development Office conducted a survey. The survey was open between March 7 and April 11, 2016.

The purpose of the survey was to help Salt Lake County understand where to focus efforts to improve bicycling throughout the Salt Lake Valley. Additionally, the County is interested in understanding which bicycling facilities are most comfortable for travelers of all ages and abilities, and particularly those people interested in bicycling, but concerned about safety and other barriers – the so called “interested, but concerned.”¹

This survey gathered information about where and how often people bike, as well as factors that affect why people do not bike more in the County. Overall, the results show that people prefer high-comfort facilities such as shared use paths, neighborhood streets, and separated/protected bike lanes. This trend is stronger when respondents are asked about riding with their children or their children riding alone. Results also show that people who ride less frequently feel more comfortable on higher comfort facility types. Results from this

¹ <https://www.portlandoregon.gov/transportation/article/158497>

survey support Salt Lake County’s major goal of developing a countywide network of high-comfort (low stress) bicycling routes that meet the needs of people of all ages and abilities.

Administration

The survey, developed using SurveyGizmo.com, was open between March 7 and April 11, 2016. It was publicized via the County’s Office of Regional Development website (www.slco.org/bikes), social media, notifications posted at all County libraries, and many bike shops throughout the County. In addition, targeted outreach and intercept surveying was conducted at select locations using tablets. The survey was available in both English and Spanish.

The following sections outline the survey distribution methodology.

Survey Incentives

Incentives were offered to encourage participation in the survey. The first 750 participants were offered a \$5 UTA FarePay card for taking the survey. Upon completion of the survey, 707 people requested a FarePay card. These cards were mailed to participants by Salt Lake County staff. Several hundred survey participants elected not to receive a card.

Postcard Distribution

Postcards were prepared for advertising the survey during targeted outreach. They were placed at several locations including public libraries, recreation centers, and bicycle shops. Postcards (as shown in Figure 1) were available in English and Spanish. Supplemental posters were also prepared in English and Spanish and posted at County libraries. Areas targeted for postcard distribution included locations with higher concentrations of low-income households, ethnic minorities, and fewer vehicles per household. Using census data, the consultant team mapped median household income, ethnicity, and vehicle ownership at the block group level. Target areas included portions of Magna, West Valley City, Salt Lake City (especially on the west side such as Rose Park, Glendale, and Poplar Grove), South Salt Lake City, Kearns, Taylorsville, West Jordan, and Midvale.

Postcards were delivered to 18 libraries, two recreation centers, and approximately 20 bicycle shops. They were also distributed at the Utah Bike Summit on April 5, 2016. In total, over 2,000 postcards and dozens of posters were distributed.

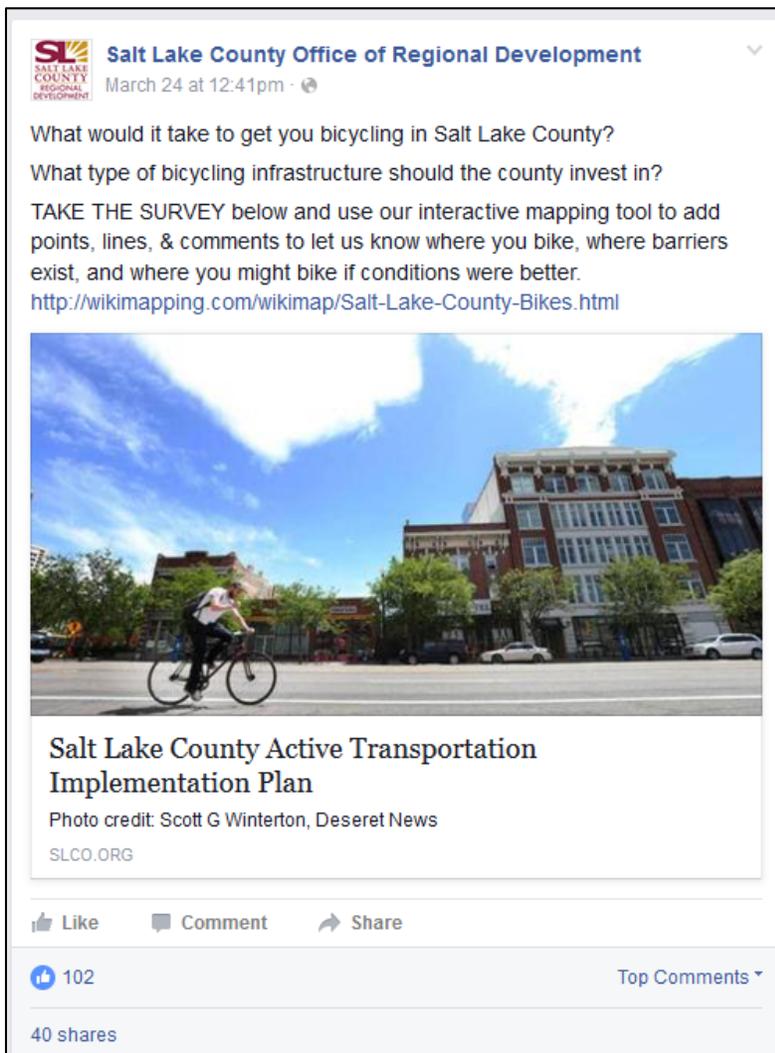
Figure 1 - Postcard for Survey (English)



Social Media and Community Outreach

Salt Lake County disseminated the link to the survey via its Salt Lake County Office of Regional Development Facebook page and its Twitter account, in both English and Spanish. Utah Transit Authority, Wasatch Front Regional Council, and the Utah Department of Transportation (Region 2) also disseminated the survey link through their respective social media channels. Other avenues of survey dissemination involved communication with community organizations and spaces, which include Centro de la Familia, the Sorenson Unity Center, the Horizonte Instruction and Training Center, and Alliances Community Services. Centro de la Familia agreed to distribute the information. No responses were received from the other organizations. The consultant team also contacted Granite School District on two social media platforms, but no responses were received. The consultant team contacted some local utility companies, but were unable to get permission in distributing survey information through them.

Figure 2 - Social Media Distribution Example



Intercept Survey Fieldwork

The consultant team identified UTA TRAX stations, grocery store parking lots, and Rio Tinto Stadium to conduct in-person surveys based on the focus areas discussed above. Unfortunately, permission could not be obtained for Rio Tinto Stadium. One grocery store was selected in Rose Park, but additional survey work was not performed at grocery stores due to low participation rates. UTA TRAX stations proved most effective and also had high percentages of target demographics. TRAX stations identified as survey intercept sites are listed in Figure 3. Each TRAX station is located within the focus areas previously discussed. Locations were also chosen that experience a high number of weekday bus transfers. The consultant team assumed that traveler dwell times between transfers would be substantial to allow participants to complete the in-person survey. The consultant team was not permitted to survey travelers on the UTA TRAX platforms due to UTA restrictions. Interviews were conducted in public areas between platforms and bus areas.

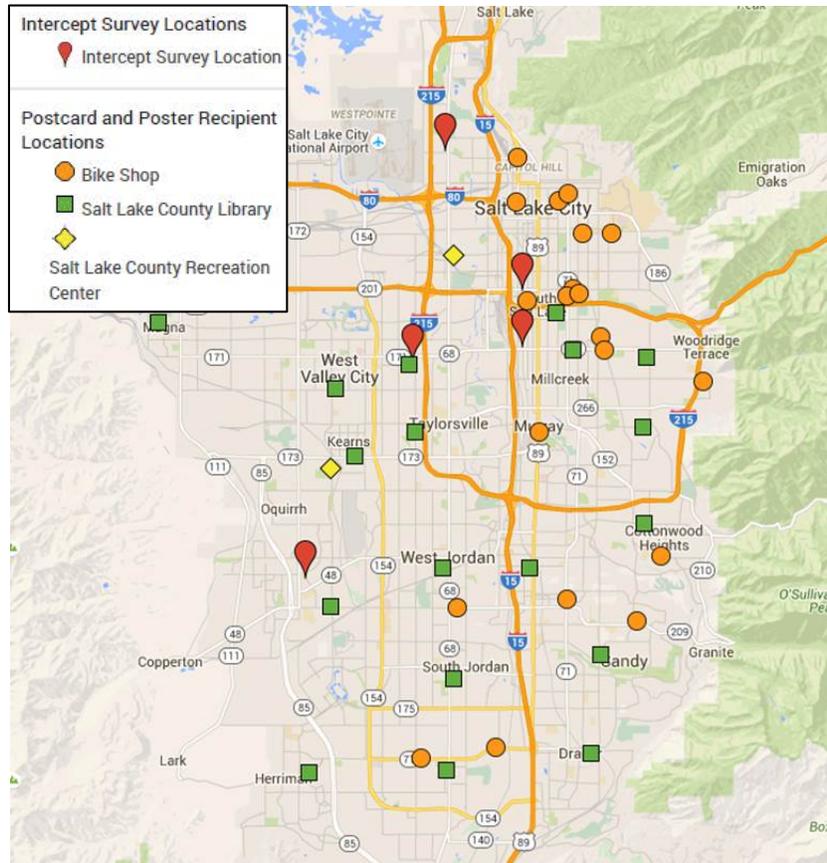
Figure 3 - Intercept Survey Details

Date	Location	Survey Times	Staff Hours	Number of Fliers Distributed		Number of In-Person Surveys Taken
				English	Spanish	
Wednesday, March 16, 2016	Super Savers (Salt Lake City)	4:00 PM to 6:00 PM	5	23	12	~10
Monday, March 21, 2016	Millcreek Trax Station (South Salt Lake City)	2:00 PM to 6:00 PM	8.5	23	30	~35
Thursday, March 24, 2016	Fairbourne Trax Station (West Valley City)	3:15 PM to 6:45 PM	7	2	5	~45
Wednesday, March 30, 2016	Center Pointe Trax Station (South Salt Lake City)	3:00 PM to 6:00 PM	6	5	5	~20
Wednesday, March 30, 2016	Fairbourne Trax Station (West Valley City)	2:00 PM to 6:00 PM	4	0	0	~20
Total			30.5	53	52	~130

Final Survey Locations

Figure 4 depicts the locations of postcard and poster recipients as well as intercept survey locations. As previously discussed, additional postcards and posters were delivered by county staff to other locations.

Figure 4 - Survey Distribution Locations



Data Preparation

Data was prepared and filtered, and incomplete surveys were removed.

Data Weighting

The survey was a “convenience” sample and the approach sought to maximize the total number of responses. As such, no data weights were developed or applied for the responses from the survey, nor are they recommended. This is because participants were able to self-select into the survey based on their interest, and no information was collected about the individuals who did not take the survey. While it could be possible to make some general comparisons between the survey respondents and the general population (for example, with Census data), there are numerous factors that influence a respondent’s perceptions of and use of non-motorized transportation that are not possible to determine.

Questionnaire & Analysis

The survey garnered 1,159 complete responses in total between the English and Spanish surveys. Of the completed surveys, 1,156 were taken in English and 3 were taken in Spanish. The survey outreach plan aimed to capture a percentage of responses from Latino/Hispanic constituents reflective of the proportion of

Latino/Hispanic residents in Salt Lake County. 6.6% of survey responses reflect individuals self-identified as Latino/Hispanic. According to recent census data, approximately 17% of county residents are Latino/Hispanic.

The survey consisted of four sections:

1. About You
2. Bicycle Habits
3. Bicycling Comfort Levels
4. Bicycling Preferences

About You

The survey asked demographic questions. These questions were included at the end of the survey because while they were important for analysis purposes, they did not affect how respondents were grouped within the main body of the survey. Questions included:

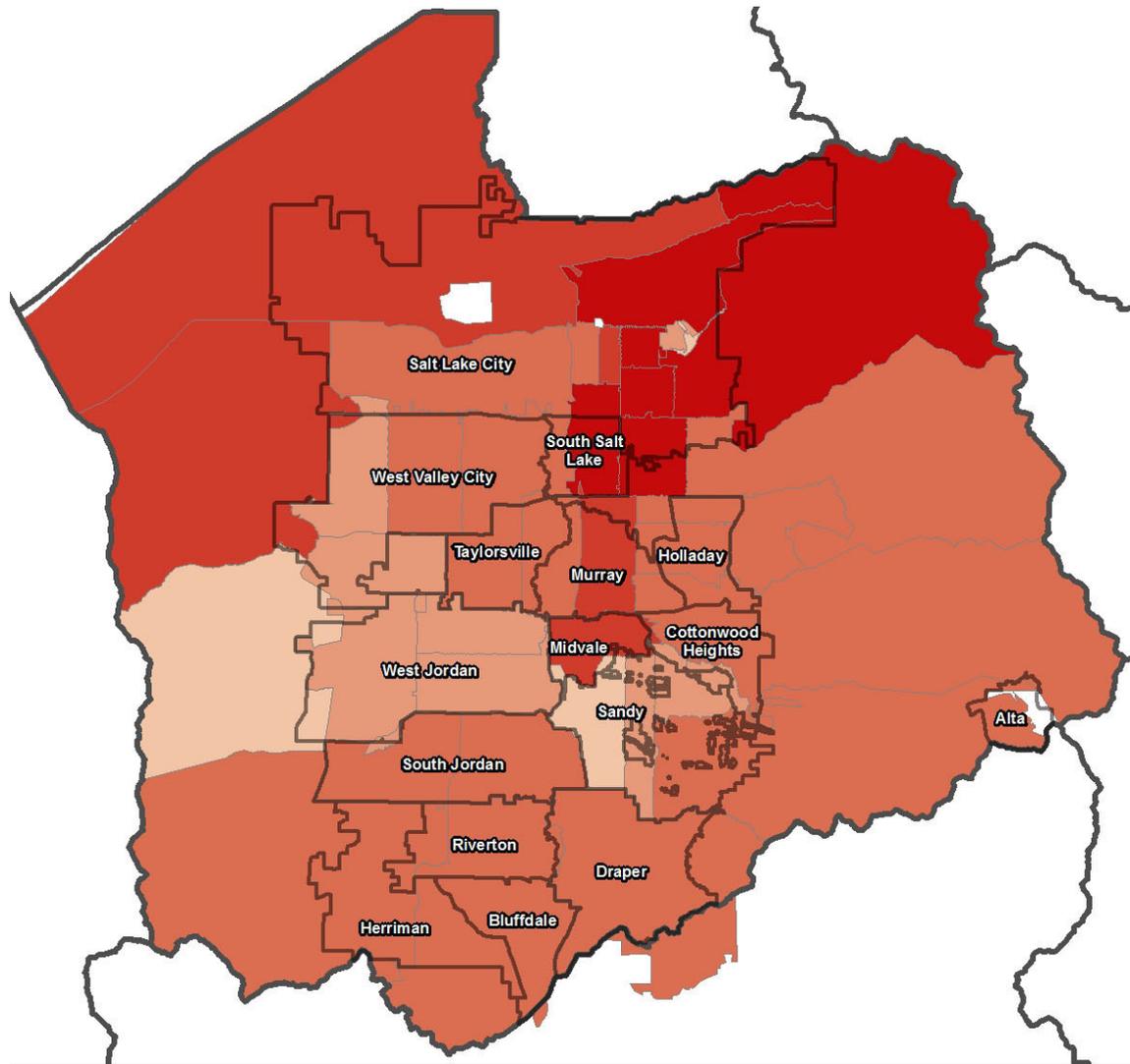
- What is the ZIP code where you live?
- How did you find out about this survey?
- Your gender?
- Your age?
- What is your race/ethnicity?
- Do you own a car?
- Are you currently enrolled in a college or university? If so, where?

As previously noted, this survey was administered as an open link and Salt Lake Valley residents were encouraged to participate through a variety of organizations and media (as described in section 1). It is likely that a large percentage of respondents chose to take the survey due to their interest in bicycling, which one should consider when interpreting survey results.

Many responses came from the eastern side of Salt Lake City and nearby communities. As shown in Figure 5, survey respondents represent all ZIP Codes within the county (with the exception of the airport and the Capitol). Salt Lake City and nearby communities likely have higher response rates due to more interest in bicycling, and potentially existing conditions such as bicycling facilities, traffic congestion, and population density. Seventy-nine respondents lived outside Salt Lake County, and two respondents reported living outside Utah.

Figure 6 through Figure 11 show answers to the remaining “About You” questions. As shown in Figure 6, nearly 50% of respondents found out about the survey through social media. Just over half of respondents identified as male, while 46.3% identified as female (Figure 7). The majority of respondents were white/non-Hispanic (79.3%), and the next largest racial/ethnic group was Hispanic/Latino (6.6%). The vast majority of respondents own a car (85%), as shown in Figure 10. Nearly 85% of respondents are not enrolled in college, while 7.3% and 3.2% are enrolled at the University of Utah and Salt Lake Community College, respectively (Figure 11).

Figure 5 - Completed Surveys by ZIP Code



Survey Respondents



Figure 6 - How did you find out about this survey?

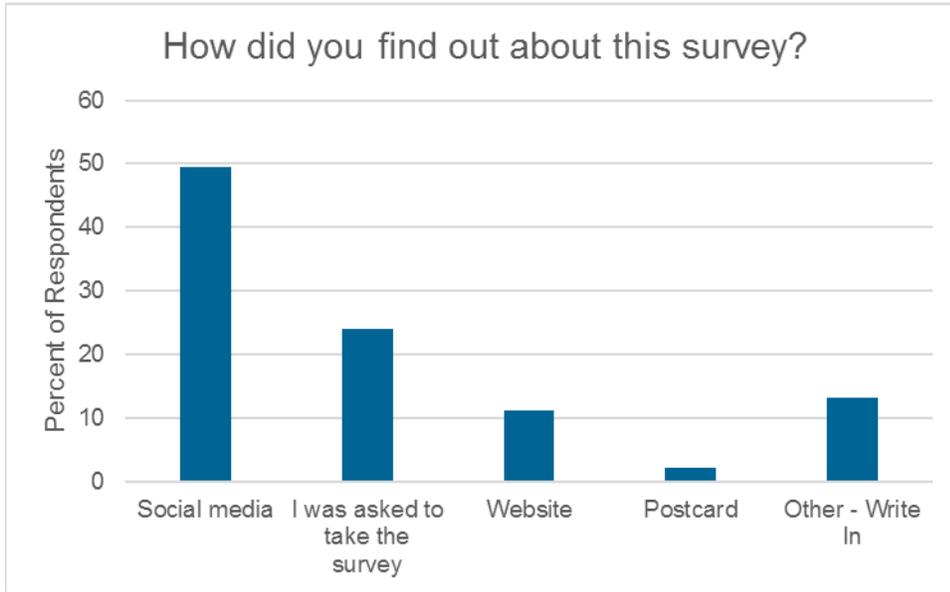


Figure 7 - Your Gender?

	Percent
Female	46.3
Male	52.4
Other	.6
Prefer not to answer	.7

Figure 8 - Your age?

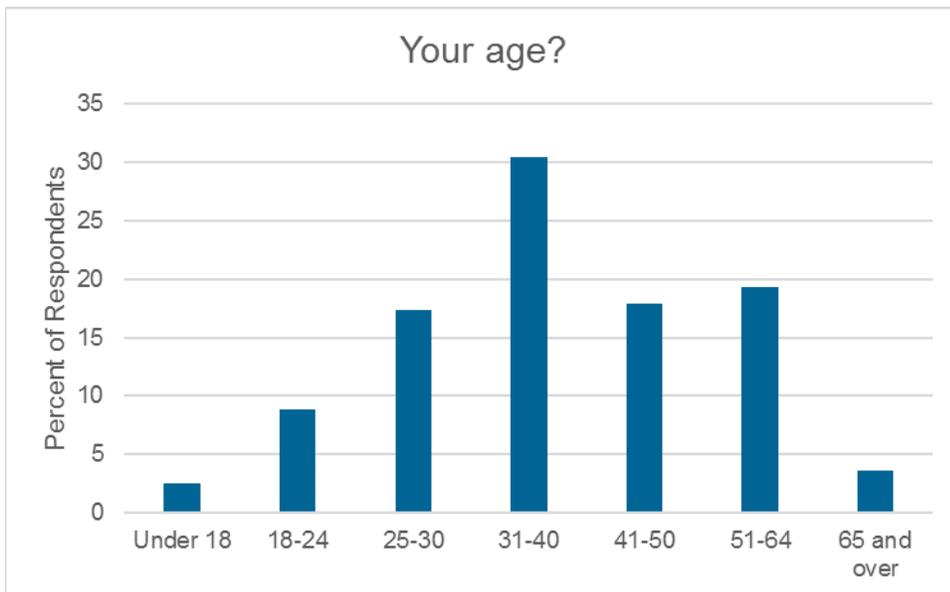


Figure 9 - What is your race/ethnicity?

	Percent
American Indian/Native American	1.2
Asian	2.7
Black/African-American	1.6
Hispanic/Latino	6.6
Pacific Islander	0.8
White (non-Hispanic)	79.3
Two or more ethnicities	2.1
Other - Write In	0.8
Prefer not to answer	5.1

Figure 10 - Do you own a car?

	Percent
Yes	85.0
No	15.0

Figure 11 - Are you currently enrolled in a college or university? If so, where?

	Percent
I'm not currently enrolled in a college/university	84.8
University of Utah	7.3
Salt Lake Community College	3.2
Everest College	0.3
LDS Business College	0.2
Eagle Gate College	0.1
Other - Write In (Required)	4.1

Bicycle Habits

The bicycle habits section of the survey asked respondents to report their typical bicycling habits (frequency and duration of rides, etc.), and whether they have school-age children.

As shown in Figure 12, 84% of respondents rode a bicycle within the last year, of which most ride seasonally (during the spring, summer, and/or fall). Figure 13 and Figure 14 show the frequency and duration of bicycling by respondents. Over 1/3 of respondents bicycle 3-4 days a week, while an additional 20% of respondents report bicycling 1-2 days a week. Approximately 40% of respondents report bicycling 30-60 minutes each day that they ride. As shown in Figure 15 and Figure 16, the vast majority of those respondents with children (32%) say their children ride a bike (84%).

Figure 12 - Have you bicycled in Salt Lake County in the last year?

	Percent
Yes	84.4
<i>Seasonally</i>	<i>53.0</i>
<i>All Year</i>	<i>31.4</i>
No	15.6

Figure 13 - How often do you bike?

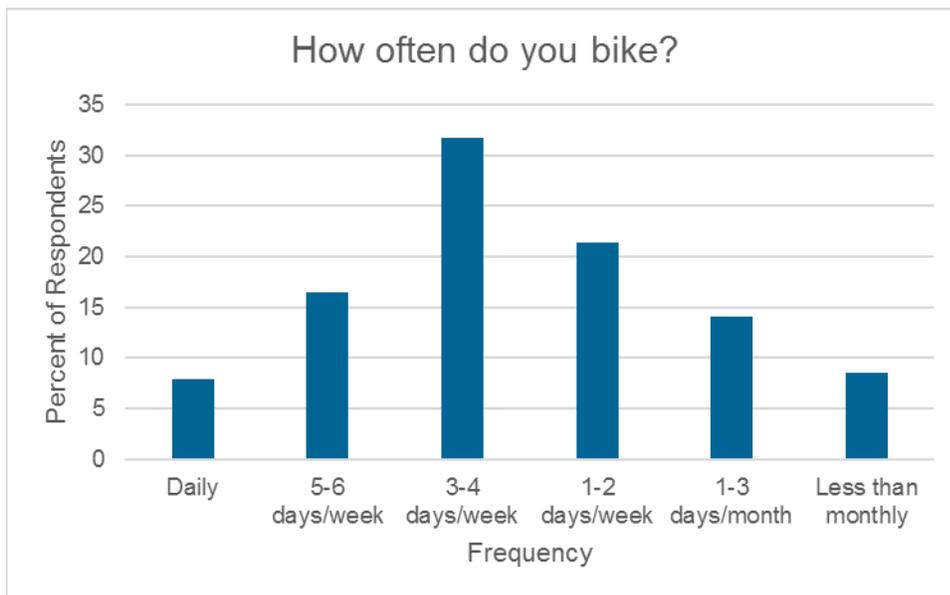


Figure 14 - How many minutes do you typically bicycle each day that you ride?

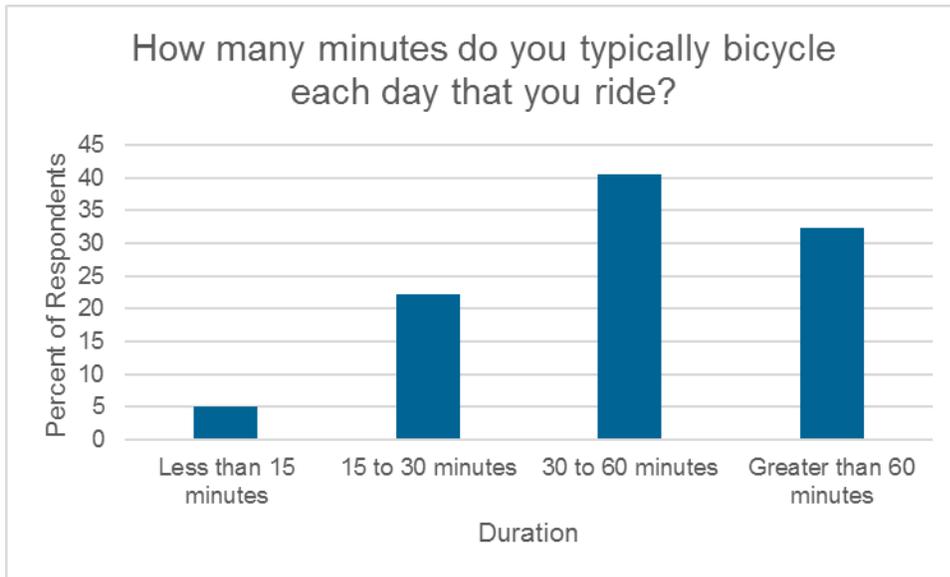


Figure 15 - Do you have school-age children (i.e. under age 18)?

	Percent
Yes	32.2*
7 and under	16.2
8 to 12	14.4
12 to 16	11.6
Over 16	6.2
No	67.8

**Total is greater than 'yes' category since respondents may have children from more than one age bracket*

Figure 16 - Does your child(ren) ride a bike?

	Percent
Yes	83.8*
<i>On his/her own</i>	<i>53.7</i>
<i>On his/her own bike, but only with an adult</i>	<i>50.2</i>
<i>On a bike seat, trailer, attached bike, etc</i>	<i>20.9</i>
No	16.2*
<i>Doesn't know how or doesn't want to</i>	<i>8.1</i>
<i>There are no safe places for him/her to bike</i>	<i>2.2</i>
<i>Doesn't have a bike</i>	<i>1.6</i>
<i>Because no one else in our household bikes</i>	<i>0.3</i>
<i>Other - Write In</i>	<i>5.7</i>

**Total is greater than 'yes' category since respondents may have children from more than one age bracket*

Bicycle Comfort Levels

The bicycle comfort levels section of the survey asked respondents how comfortable they would feel biking on a variety of facilities including various bike lane and roadway configurations, including multi-use trails and separated/protected bike lanes (see Figure 17). Available responses varied from “Very Comfortable” to “Very Uncomfortable,” as shown in Figure 18. If respondents had school-age children all questions were asked for “Me,” “Child along with me,” and “Child alone.”

Figure 17 - Bike Facilities

Bike Lane



Multi-Use Trail with Separated Walking Area



Sharing a Lane with Motor Vehicles



Bike Lane with Painted Buffer Next to Vehicle Lane



Bike Lane with Painted Buffer and Vertical Objects



Neighborhood Street with Low Traffic Volumes and Slower Speeds



Bike Lane with Curb Barrier Next to Vehicle Lane



Multi-Use Trail



Shared Lane with Enhanced Pavement Markings



Figure 18 - Example Question

10. Bike Lane
How comfortable would you feel biking here?



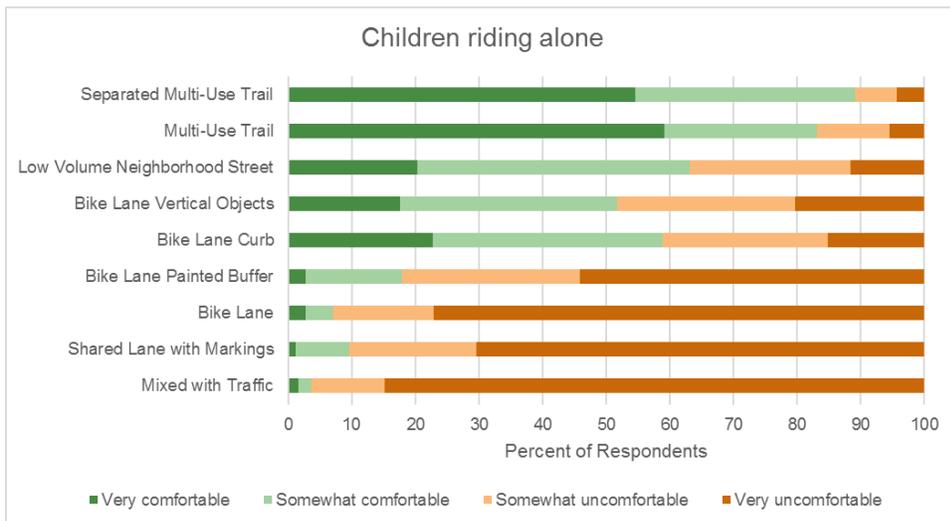
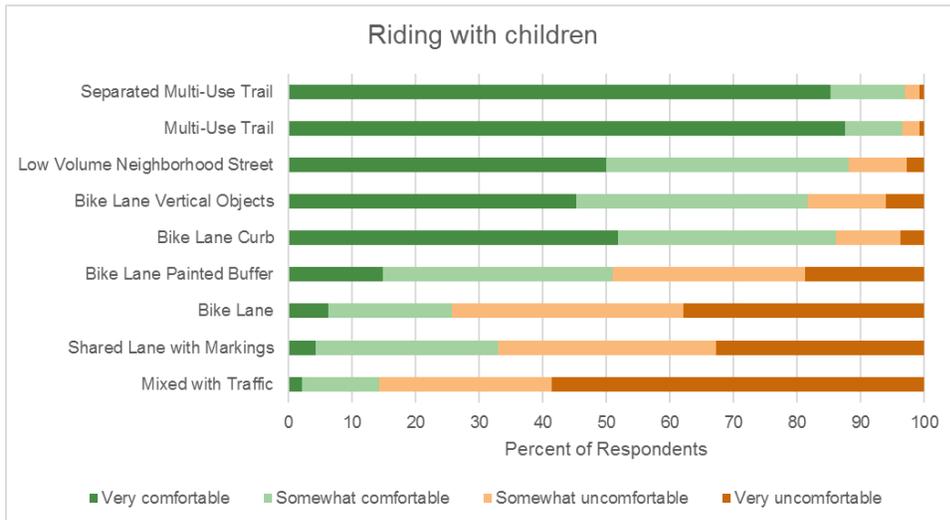
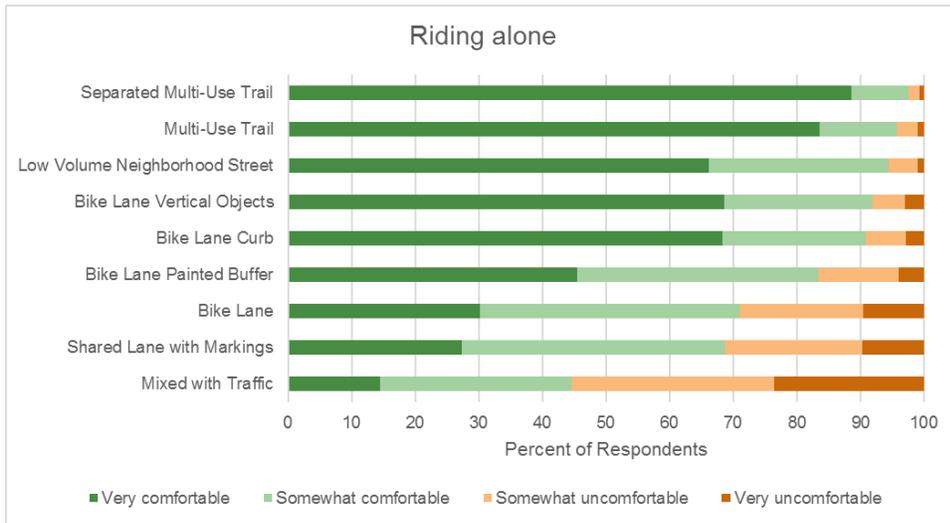
	Very comfortable	Somewhat comfortable	Somewhat uncomfortable	Very uncomfortable
Me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Child along with me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Child alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Comfort levels for various bicycle facility types are shown in Figure 19 for respondents riding alone. As shown in Figure 19, multi-use trails (with or without separated pedestrian areas) were rated as the most comfortable for respondents, followed by low volume neighborhood streets, then bike lanes with various types of buffers (vertical objects, curbs, and painted buffers, respectively). Bike lanes, shared-lane pavement markings, and riding with traffic were rated as least comfortable.

Additionally, respondents with children were also asked the same bicycling comfort level questions for the respondent riding with child(ren), and the respondents' child(ren) riding alone.

The ordered ranking of preference remains fairly similar, except that the respondents' comfort level decreases for the scenario of riding with their child(ren), and even more so when asked about their child(ren) riding alone. While respondents' comfort level decreases across all facilities when riding with their child(ren) and child(ren) riding alone, the four most uncomfortable facilities (bike lane with painted buffer, bike lane, shared lane with markings, and mixed with traffic) experience significantly greater decreases. Additional insight is provided below in the crosstab analysis.

Figure 19 - Comfort Level: “How comfortable would you feel biking here?”



Crosstab Analysis

Cross-tabulation was used to summarize the relationship between two categorical variables. A cross-tabulation (or crosstab for short) is a table that depicts the number of times each of the possible category combinations occurred in the sample data.

The consultant team compared comfort levels for various bicycle facility types by different demographic groups. As shown in Figure 20 through Figure 22, multi-use trails (separated or non-separated), low volume neighborhood streets, and separated bike lanes (with vertical objects or curbs) were rated as similarly comfortable across all demographic groups. For bike lanes (with painted buffers or standard bike lanes), shared lanes with markings, and riding mixed with traffic, comfort levels varied significantly between demographics. Respondents who are male (riding alone) or bike frequently are significantly more comfortable in these facility types.

Figure 20 Crosstab - Facility Type and Gender



Figure 21 shows that while frequent riders (those that ride more than four times per week) are generally comfortable on most types of facilities, those that are infrequent riders (that ride less than four times per month) do feel comfortable on multi-use trails (separated or non-separated), low volume neighborhood streets, and separated bike lanes (with vertical objects or curbs). Similarly, Figure 22 shows that respondents that don't own cars tend to feel more comfortable with bike lanes and mixed flow riding. However, we also know that respondents without cars tend to be more frequent riders (as is discussed later in the report), which could help explain this correlation.

Figure 21 Crosstab - Facility Type and Biking Frequency

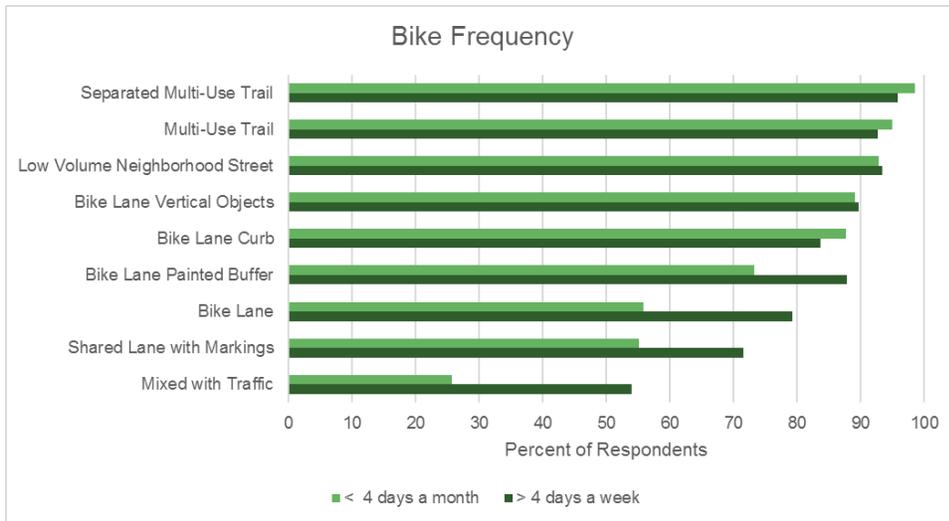
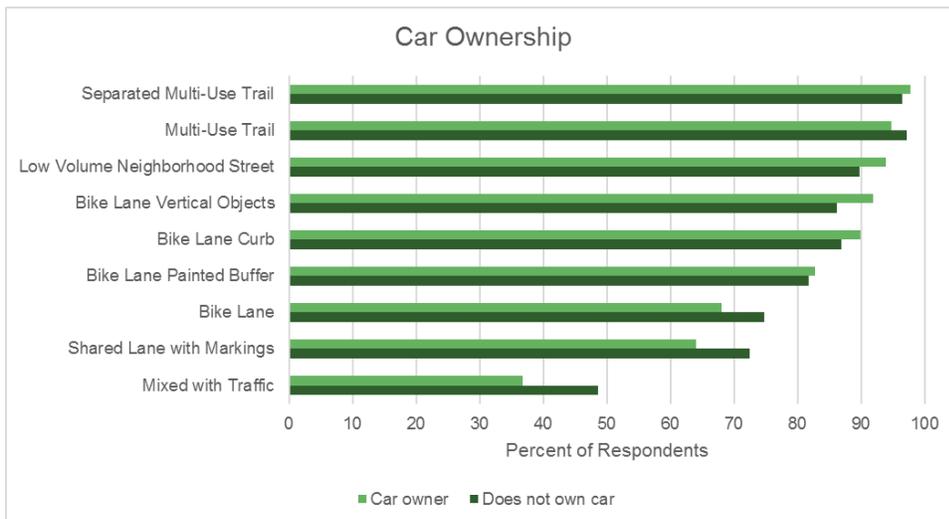


Figure 22 Crosstab - Facility Type and Car Ownership



Bicycle Preferences

The bicycling preferences section of the survey asked the respondents what type of facility they usually ride on in Salt Lake County (see Figure 23). As shown in the graphic, the top three responses were neighborhood streets, major streets with bike lanes, and paved multi-use paths/trails.

For those that were less frequent riders (2 days per week or less), the survey asked for reasons why they don't ride more often. Figure 24 shows responses from those that ride less than monthly up to 2 days per week, and responses from people that have not ridden in the last year. Typical reasons given include safety concerns such as not wanting to ride near cars, concerns over driver inattentiveness, or difficulty in crossing roads. Other less cited reasons include concerns over distance, routes, or the lack of end of trip facilities at their destinations.

Figure 23 - Where do you usually ride in Salt Lake County? (Choose any that apply)

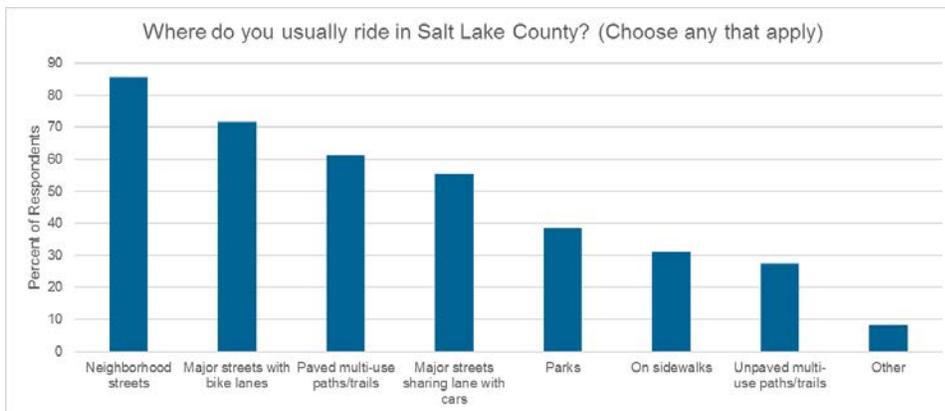


Figure 24 - Please indicate why you don't want to (or can't) bicycle in Salt Lake County? (choose your top three)



Additional Analysis

Bicycling Frequency

The consultant team used cross-tab analysis to investigate additional relationships between categorical variables. The first set of crosstabs examined was “How often do you bike”. This crosstab offers valuable insight into the frequency someone bikes in relation to their demographic group. Crosstabs for whether the respondent has children, gender, race/ethnicity, car ownership, and age are presented below in Figure 25 through Figure 29.

Figure 25 and Figure 26 show fairly similar distributions of ridership frequency between people with and without children. However, the results indicate that men are more likely than women to bike more frequently. Figure 27 shows that although a larger percentage of the White (non-Hispanic) populations surveyed are more likely to bike frequently when compared to non-White populations (3 to 4 days a week), non-White populations are actually more likely to ride daily. Figure 28 shows that, as expected, those without a car are more likely to ride daily than those with a car. In fact, very few people with cars indicated that they ride daily. Figure 29 shows little correlation between age and frequency, except that daily riders were more likely to be younger than 30 years old, while respondents that ride three to four days per week tend to be older than 40.

Figure 25 - Crosstab, Bike Frequency and Children

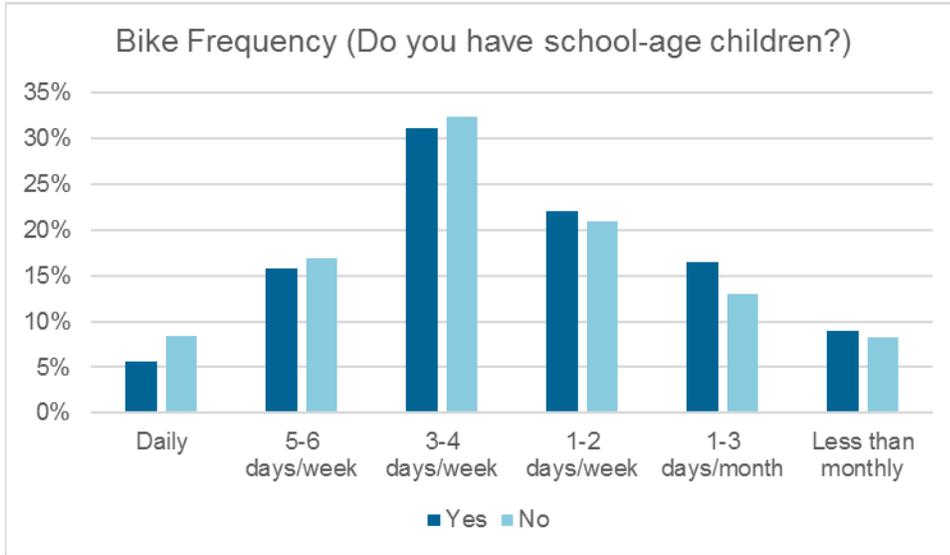


Figure 26 - Crosstab, Bike Frequency and Gender

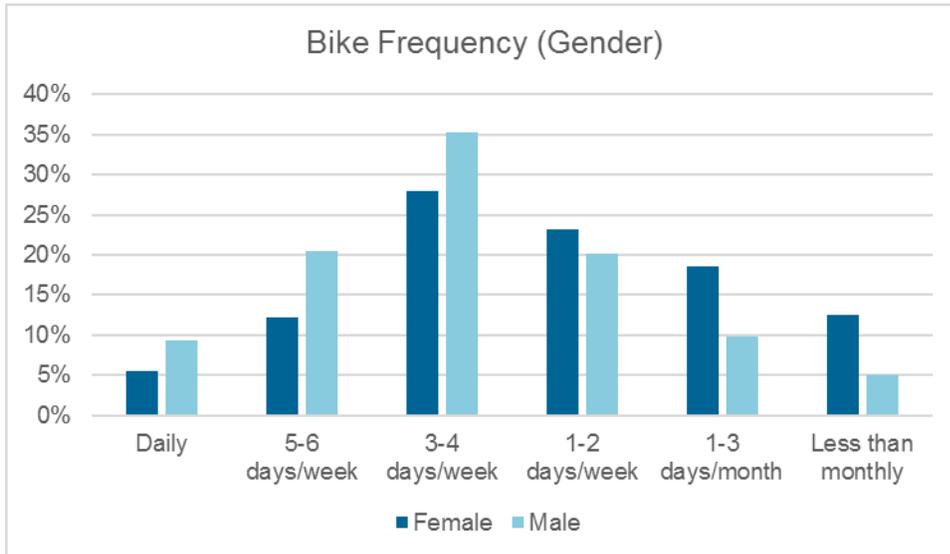


Figure 27 - Crosstab, Bike Frequency and Race/Ethnicity

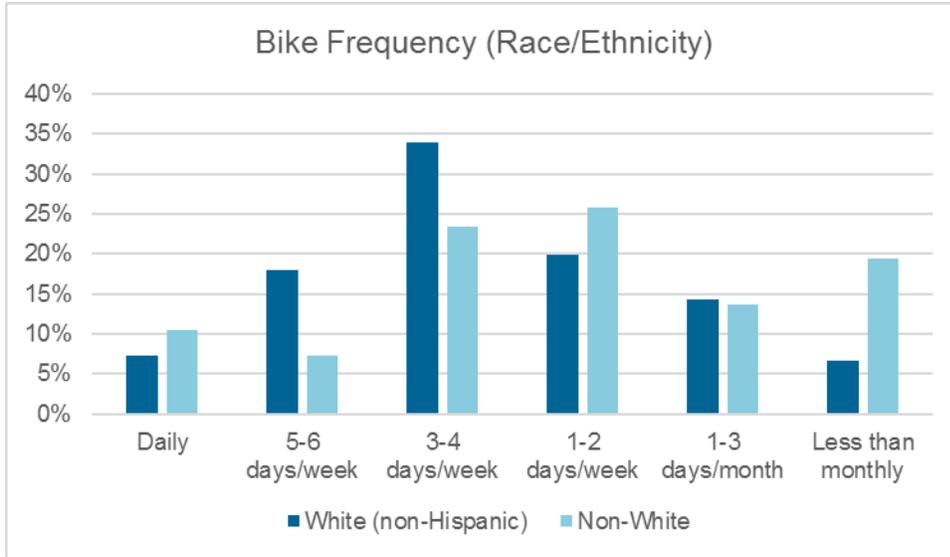


Figure 28 - Crosstab, Bike Frequency and Car Ownership

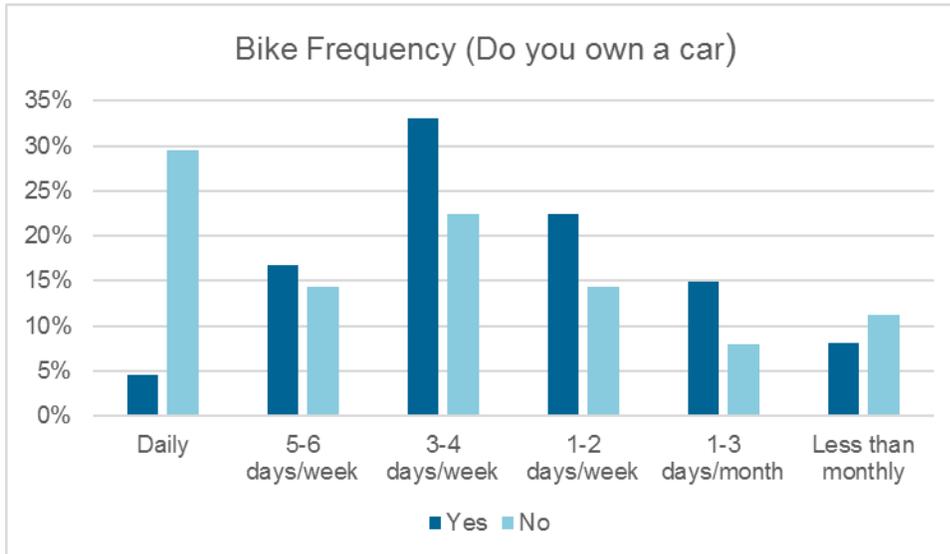
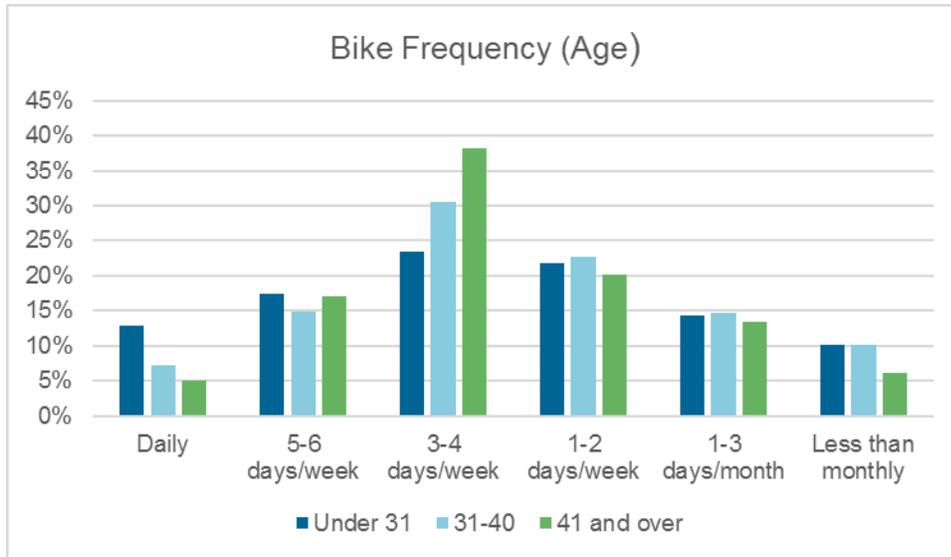


Figure 29 - Crosstab, Bike Frequency and Age



Bicycling Comfort & Barriers

This section discusses the correlation between comfort levels on various facility types, and the barriers identified by respondents for why they don't ride more frequently.

Figure 30 includes responses from the following respondents:

- Respondents riding alone.
- Respondents who ride less frequently (less than once per month up to two days per week).
- Respondents who indicated they are “uncomfortable” or “very uncomfortable” with bike lanes (with painted buffers or standard bike lanes), shared lanes with markings, or riding in mixed traffic.

For each respondent, the reasons why they do not ride more frequently in the county are listed. Although the survey did not specifically ask respondents why these four facilities made them uncomfortable, these figures show the correlation between people that are not comfortable on these facility types and common reasons they don't ride more often. The four highest reasons can be generally characterized as safety related:

- “I don't want to bicycle close to cars;”
- “Drivers are inattentive;”
- “It's difficult or unsafe getting across major roads;” and
- “Speeding traffic.”

Figure 31 shows the same responses, except for respondents that haven't ridden in the last year. The three highest responses were identical to those of the less frequent riders discussed above. The fourth highest response was “Too much traffic” instead of “Speeding traffic.” The same mitigation measures discussed

above would apply to these concerns raised by the non-rider respondents. It is interesting to note that the least selected response was "I'm physically unable to bike."

Figure 30 - Reasons Respondents Don't Ride More

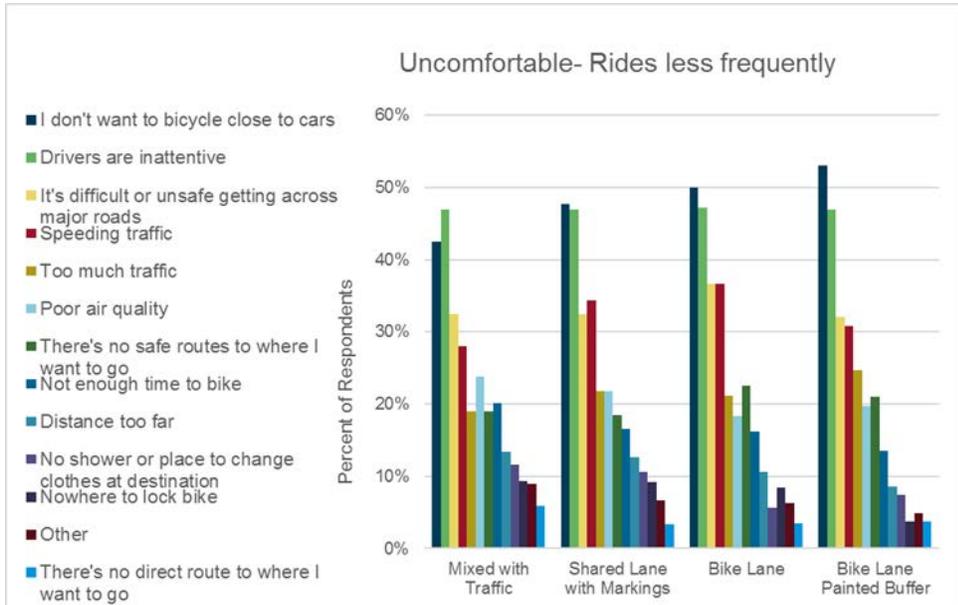
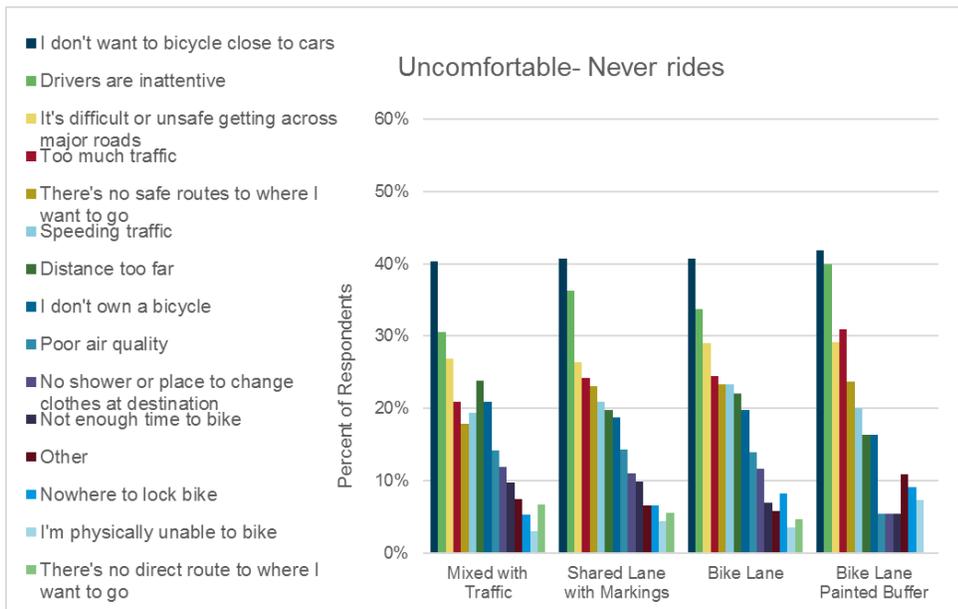


Figure 31 - Reasons Respondents Don't Ride



Discussion and Conclusion

The survey results and analysis found that across all demographic groups, people feel more comfortable on multi-use paths, neighborhood streets, and separated bike lanes. This trend was stronger for people biking with kids, and even more so when respondents were asked about their children biking alone. Generally, men were more likely than women to be comfortable riding in traffic. This finding echoes the national People for Bikes survey² results that women are more likely to be concerned about bicycling safety than men. However, all groups ranked painted bike lanes, shared lane markings, and riding in mixed traffic as the least comfortable facilities. Respondents that were uncomfortable riding in these higher stress environments reported that they didn't bike more often because of safety concerns and difficulty crossing major roads.

The vast majority of respondents owned a car and have biked in Salt Lake County within the last year. Compared with national survey findings, it is likely that respondents in Salt Lake County had greater access to an operational bicycle.³ Currently, most respondents ride on neighborhood streets, trails, and major roads with bike lanes. This finding is consistent with existing facilities in Salt Lake County.

Nearly half of respondents were women, one-third had school-age children, and nearly 7% were Hispanic/Latino. Most respondents bike seasonally. Over 80% of respondents with kids bike with their kids. Women were less likely to bike frequently, and people of color, young adults, and people who don't own a car were more likely to bike every day. The People for Bikes survey found that men are more likely to bike frequently, Hispanic people are more likely to have bicycled in the last year, and that lower income people rode more frequently. These results are generally consistent with results from the Salt Lake County survey. Although the Salt Lake County survey did not include a question on income, people who don't own cars are more likely to have lower incomes.

In comparison with the 2012 Utah Travel Survey, this survey had a greater percentage of respondents that reported bicycling frequently. This trend may reflect regional differences or self-selection. Additionally, respondents rated safety as a much greater concern when compared to the statewide travel survey (related to barriers to bicycling). However, both the Utah Travel Survey and the Salt Lake County survey respondents rated multi-use paths and separated bike lanes highly. Finally, the Salt Lake County survey respondents were much more likely to hear about the survey from social media than through other methods when compared to Utah Travel Survey respondents (slightly less than over 50% compared with 6.9%).

Salt Lake County respondents who bike less frequently are less comfortable on painted bike lanes and in mixed traffic, while all respondents are comfortable on low-stress facilities (separated/protected bike lanes, multi-use paths, and neighborhood streets). Overall, multi-use paths/trails are rated as the most comfortable facility. Respondents report that the top reasons they don't bike (or don't bike more) include safety concerns and difficulty in crossing roads. This finding echoes the results from the People for Bikes survey, which found that concerns about traffic safety were a key barrier to bicycling.

Based on these results, Salt Lake County could focus on high-comfort (low-stress) facility types to attract people who don't ride frequently today. Developing bicycle facilities on lower speed roadways or providing more protection between bicycle lanes and motor vehicles on roadways with higher vehicle speeds and

² <http://www.peopleforbikes.org/pages/u.s.-bicycling-participation-benchmarking-report>

³ Nearly 50 percent of respondents to the People for Bikes survey did not have access to an operational bicycle. In contrast, only 15.6% of Salt Lake County respondents did not bicycle in the County within the last year, of which approximately 25 percent reported access to a bicycle as a barrier to bicycling.

volumes, and improving crossings of major roads may be areas that would improve ridership among the “interested but concerned” group that are generally uncomfortable with bicycle facilities on busier roadways that offer little to no separation from motor vehicles. Bicycle infrastructure improvements would also have a positive impact on people of color, young adults, and people without a car since these are among the groups bicycling most frequently today. Lastly, the County and its partners can affect changes to drivers’ attentiveness (a major barrier for many respondents) through education and enforcement of distracted driving laws.