

SmartTrips: West Eugene

Evaluation Summary

Overview

To evaluate changes in travel behavior and attitudes about transportation, the project team administered pre- and post-program surveys to all households in the SmartTrips: West Eugene program target area. The project team also administered baseline and follow-up surveys to program participants. The target area and participant surveys provide insights on changes in respondents' travel behavior; participants' level of readiness to change (or Stage of Change¹); confidence in using transportation options; and general feedback about the SmartTrips: West Eugene program.

Over the course of the program, target area survey respondents reported the following key results:

- **Drive-alone mode share decreased 10.9 percentage points during the program.**
- **Transit, walking, bicycling, carpooling, and "other" mode shares increased.** The project team observed increases of 3.6 percentage points in transit mode share, 2.4 percentage points in walking mode share, 2.3 percentage points in bicycling mode share, and 1.1 percentage points in carpooling mode share. There was a 1.6 percentage point increase in "other" mode share (including motorcycles, skateboard, etc.).
- Assuming the decrease in drive-alone mode share is sustained, the project team estimates that **target area residents will drive 2,894,800 fewer miles annually, resulting in a reduction of 2,351,108 pounds of Carbon Dioxide emissions per year.**
- The majority of respondents (85%) reported agreeing that it is a good idea for the City of Eugene to help residents walk and bike more.
- The majority of respondents (89%) reported agreeing that they are aware of the transportation options available to them in their community, an increase of 3% from pre-program survey responses.

Program participant survey respondents reported the following findings:

- Almost all respondents (97%) reported that the travel tools they received were useful. Furthermore, two in three respondents (67%) reported that using the Travel Tool Kit was their favorite part of the SmartTrips: West Eugene program.
- Of respondents who attended events, over half (54%) reported that the events helped them make more of their trips using transportation options.
- Two in three respondents (66%) reported "now considering all trip options before deciding how to travel."

¹ Prochaska, J.O. & DiClemente, C.C. (1983) Stages and Processes of Self-Change of Smoking: Toward an Integrative Model of Change. *Journal of Consulting and Clinical Psychology*, 51, 390-395.

Survey Methodology

Target Area Surveys

All 4,490 households in the program target area received pre- and post-program surveys (including those who did not participate in the program) those who participated in the program). To avoid influencing the opinions of respondents, the project team designed the surveys using generic “City of Eugene” branding.

The project team mailed the pre-program survey in May 2018 prior to any program outreach, and mailed the post-program survey in October 2018 after the outreach ambassadors had delivered all Travel Tools Kits. Table 1 summarizes the target area survey response rates.

Table 1: Survey Response Summary

	Pre-Program Survey	Post-Program Survey
Mail Date	May 2018	October 2018
Number of Surveys Delivered	4,490	4,490
Number of Surveys Completed	555	448
Response Rate	12%	10%

The target area surveys had three sections: a one-day trip diary; questions about opinions and awareness around walking and bicycling; and basic demographic questions.

The one-day trip diary portion of the target area surveys asked respondents to report all the trips they made the previous day, by prompting for their destination, the travel mode used, and distance in miles for each trip. The surveys defined a trip as each time the respondent left one place and arrived at another place. Based on these self-reported trips, the project team calculated the mode share and daily vehicle miles traveled for both the pre- and post-program surveys. To demonstrate increases or decreases in the use of each particular mode, the team calculated the change in mode share between the pre- and post-program surveys, also known as the mode shift.

Participant Surveys

To supplement the target area survey results, the project team administered baseline and follow-up surveys to individuals who participated in the program. The baseline survey was incorporated into the SmartTrips order form and 513 participants submitted the survey and order form on an ongoing basis from June to October 2018. The project team sent the follow-up participant survey in October 2018 to the 4,490 target area households (after the outreach ambassadors had delivered all Travel Tools Kits) and saw a 10% response rate.

Travel Behavior Results

Average Number of Trips

The average number of daily trips taken by survey respondents was 3.52 in the pre-program survey and 3.32 in the post-program survey, both of which are within the normal range for similar programs in Oregon. The consistency between the pre- and post-program surveys further validates the two datasets.

Mode Share and Mode Shift Analysis

Figure 1 shows the share of trips made by each mode in the pre- and post-program target area surveys. Figure 2 shows the corresponding mode shift in the target area based on those self-reported trips. “Other” trips may include those made by taxis, skateboards, or motorcycles.

As seen in Figure 2, drive-alone mode share decreased 10.9 percentage points between the pre- and post-program surveys. The project team observed corresponding increases of 3.6 percentage points in transit mode share, 2.4 percentage points in walking mode share, 2.3 percentage points in bicycling mode share, and 1.1 percentage points in carpooling mode share. There was a 1.6 percentage point increase in unspecified “other” mode share.

When asked what barriers prevented respondents from using transportation options, the top three responses were “other” reasons (45%), “personal safety” (27%) and “inclement weather” (25%). Some reasons specified in the “other” category include age, disabilities, and schedule issues.

Figure 1: Mode Share

As reported in the pre- and post-program target area surveys

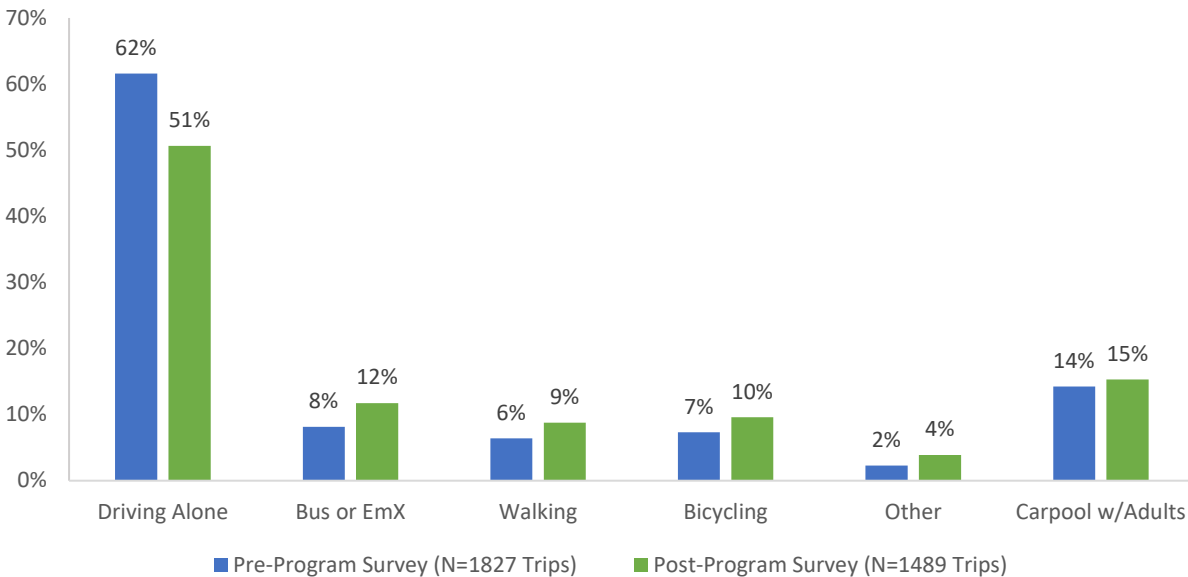
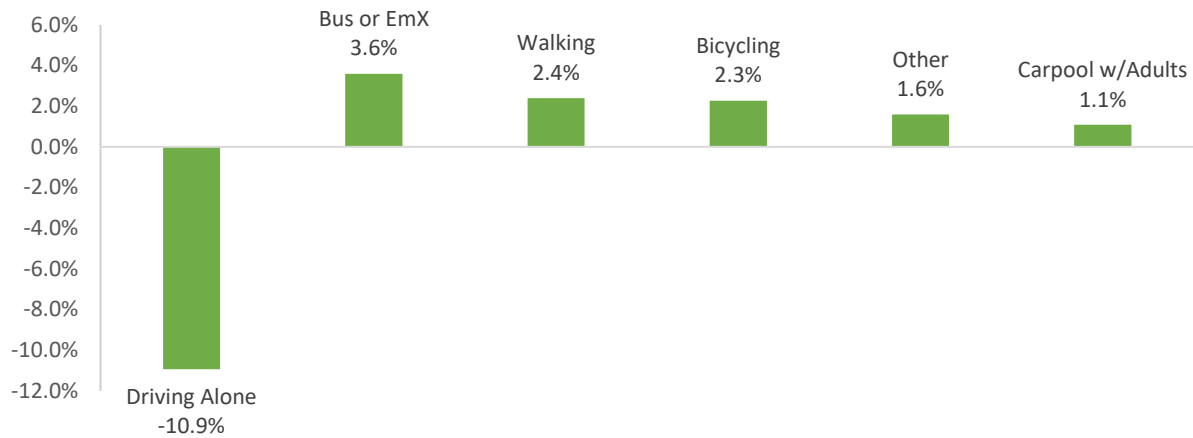


Figure 2: Mode Shift²

As reported in the pre- and post-program target area surveys

**Frequency of Transportation Options Use**

To complement the target area mode shift analysis, the baseline and follow-up participant surveys included a question to evaluate more nuanced behavior change among program participants. The participant surveys asked program participants to report the number of days that they walked, biked, or took transit in the week prior to taking the survey. By conducting a panel analysis of the 65 respondents who answered this question in both participant surveys, the project team found these respondents increased their use of transportation options by an average of 0.11 days during the program. This indicates that program participants may have been encouraged by the SmartTrips: West Eugene program to use transportation options for more of their trips.

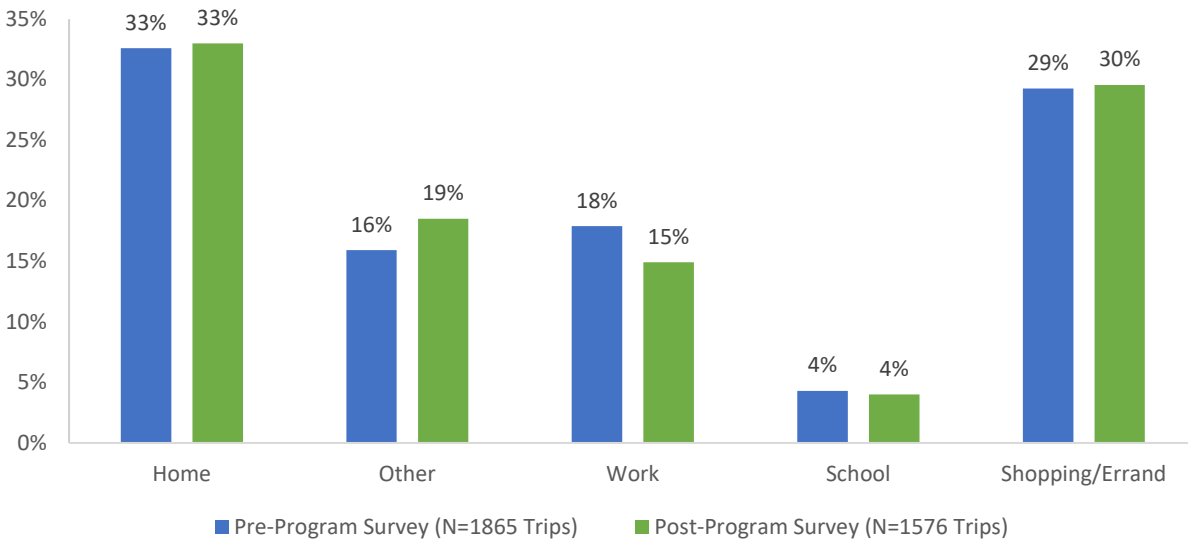
Trip Purpose Analysis

In addition to the mode share data gathered in the target area surveys, each reported trip was attributed to one of five purposes: home, shopping/errands, school, and work, and other. Figure 3 shows the distribution of trip purposes reported by respondents in the pre- and post- program surveys. The trip purposes reported remained fairly consistent between the two surveys, meaning that respondents took similar types of trips in each survey. Similar to results from the 2015 SmartTrips: South Central and 2017 SmartTrips: River Road programs, “home” and “shopping/errand” trips represented the top two trip purposes.

² Percentages in this chart are rounded to one decimal place. For this reason, some values may vary slightly from the changes shown in Figure 1.

Figure 3: Distribution of Trips by Purpose

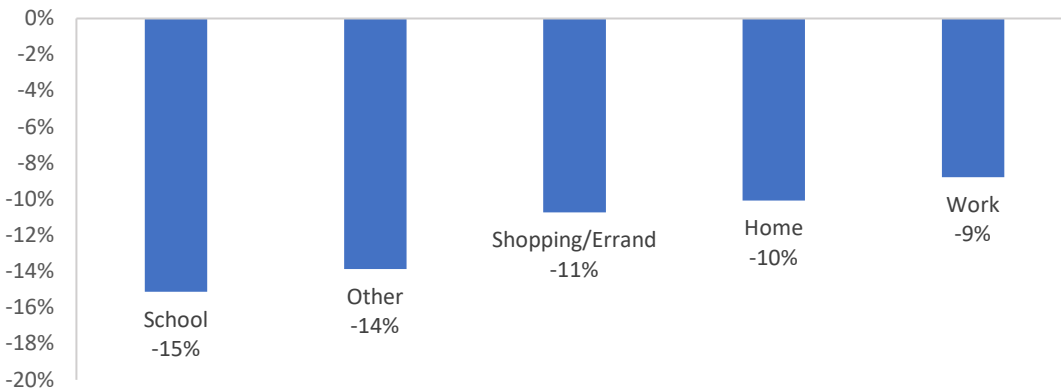
As reported in the pre- and post-program target area surveys



For a better understanding of changes in drive-alone travel behavior in the target area, the project team also analyzed the drive-alone mode shift by trip purpose, as seen in Figure 4. Drive-alone mode share for all trips decreased, with the largest decrease in school trips. The larger decrease in drive-alone mode share for school trips may be due to the small sample size for this trip type. With 54 drive-alone school trips reported in the pre-program survey and 33 drive-alone school trips reported in the post-program survey (out of 78 and 61 total school trips, respectively), the small shift in drive-alone trips may have impacted the mode shift.

Figure 4: Drive-Alone Mode Shift by Trip Purpose

As reported in the pre- and post-program target area surveys



Impact on Vehicle Miles Traveled and Carbon Dioxide Emissions

Based on the self-reported trip distances³ in the target area surveys, the estimated drive-alone vehicle miles traveled per person per day in the target area decreased 1.77 miles in the post-program survey. If it is assumed that the survey respondents are representative of the target area population, then this reduction could be extrapolated to all 4,490 target area households. Based on this assumption, the project team estimates target area household members will drive 7,931 fewer vehicle miles per day. If this behavior continues, target area households are estimated to drive 2,894,800 fewer vehicle miles annually, resulting in a reduction of 2,351,108 pounds of carbon dioxide emissions annually.⁴ This data is represented in Table 2.

Table 2: Reduction in Vehicle Miles Traveled and CO₂ Emissions

As reported in the pre- and post-program target area surveys

	Estimated Vehicle Miles Traveled (Per Person)		Estimated Vehicle Miles Traveled (Among All 4,490 Households in the Target Area)		Estimated Vehicle Miles Reduced in Target Area	Estimated Carbon Dioxide Emissions Reduced (In Pounds)
	Pre-Program	Post-Program	Pre-Program	Post-Program		
Per Day	11.21	9.36	49,947	42,016	7,931	6,441
Per Year	4,060	3,416	18,230,769	15,335,969	2,894,800	2,351,108

³ When compared to the regional trips distances reported by the Oregon Household Assessment Survey (OHAS), the self-reported trip distances were similar, with no average trip differences over 1 mile.

⁴ Carbon dioxide emission reductions are estimated based on vehicle miles traveled reduction calculations, as well as emission rates from the 2008 EPA Report 420-F-08-024, "Emission Facts: Average Annual Emissions and Fuel Consumption for Gasoline-Fueled Passenger Cars and Light Trucks."

Target Area Attitudes & Perceptions Towards Transportation Options

The target area surveys asked respondents a series of questions about their attitudes and perceptions towards active transportation. As Table 3 highlights, after participating in the SmartTrips program, the majority of respondents (85%) believe it is a good idea for the City of Eugene to help residents walk and bike more, and 88% indicate they are aware of the multitude of transportation options available to them in Eugene (an increase of 3% from the pre-program survey). In further support of this positive feedback, over 81% of post-program survey respondents reported making their neighborhood more walkable and bikeable is important to them. This question was only asked in the post-program survey.

Table 3: Reported Agreement with Attitudinal Questions

As reported in the pre- and post-program target area surveys

Statement	Pre-Program Survey			Post-Program Survey			Overall Agreement Percent Change
	Strongly Agree	Somewhat Agree	Overall Agreement	Strongly Agree	Somewhat Agree	Overall Agreement	
I think it is a good idea for the City of Eugene to help residents walk and bike more.	56.7%	21.3%	78.0%	64.6%	20.1%	84.7%	6.7%
I am aware of the transportation options available to me in my community.	56.1%	30.1%	86.2%	61.4%	27.4%	88.8%	2.5%

Participant Survey Analysis

As mentioned previously, the project team used the baseline survey (which was combined with the program order form) and follow-up participant survey to measure changes in respondents' level of readiness to change, or Stage of Change; their confidence in using transportation options; and their feedback about the SmartTrips: West Eugene program. The benefit of gathering data from program participants is that the project team can more directly attribute participants' responses to the program and its impacts.

Stages of Change

In both the baseline and follow-up participant surveys, participants answered a question that allowed the project team to segment them by their "Stage of Change." The Stages of Change theory, also known as the Transtheoretical Model, argues that individuals show varying levels of readiness to change behavior(s). These levels are identified as five distinct "stages of change" and are described in more detail below:

- **Pre-Contemplation** – The individual has no intention to change. They do not see a benefit to changing or care much about the costs of their current behavior.
- **Contemplation** – The individual is considering changing, but is either not motivated or does not know where to start.
- **Preparation** – The individual is intending to make a change and is motivated to give it a try.
- **Action** – The individual is trying the new behavior, but has been doing so for less than 6 months.
- **Maintenance** – The individual is already doing the desired behavior and has been doing so for more than 6 months.

To segment participants into a stage of change, the participant surveys asked participants to select the statement which best applied to them from the list below. The project team then categorized their response into one of the five corresponding stages of change.

- I drive for most of my trips, and I don't intend to make any changes. **[Pre-contemplation]**
- I drive for most of my trips. I am considering driving less often, but I'm not sure how to do it. **[Contemplation]**
- I drive for most of my trips, but I intend to drive less often. I know what I would like to do instead, but I haven't yet gotten started. **[Preparation]**
- I already use ways other than driving to get around for most trips, and I have been doing so for less than 6 months. **[Action]**
- I already use other ways of getting around for most trips, and I have been doing so for more than 6 months. **[Maintenance]**

Individuals in different stages require different messaging, support, and tools to help them progress along the behavior change continuum. After some experimentation with creative messaging tactics the previous year, the SmartTrips project team once again deployed the following stage-specific interventions:

- **Pre-Contemplation:** Participants in this stage need increased awareness to change. Participants in this category received a follow-up email with information on the annual costs of car ownership, the costs of commuting by bike, and the costs of annual transit use.
- **Contemplation & Preparation:** Participants in these two stages need increased motivation, confidence, and support. These participants were sent an email that included a message from another program participant who lives in their neighborhood and identifies with the Action or Maintenance stages. The encouraging

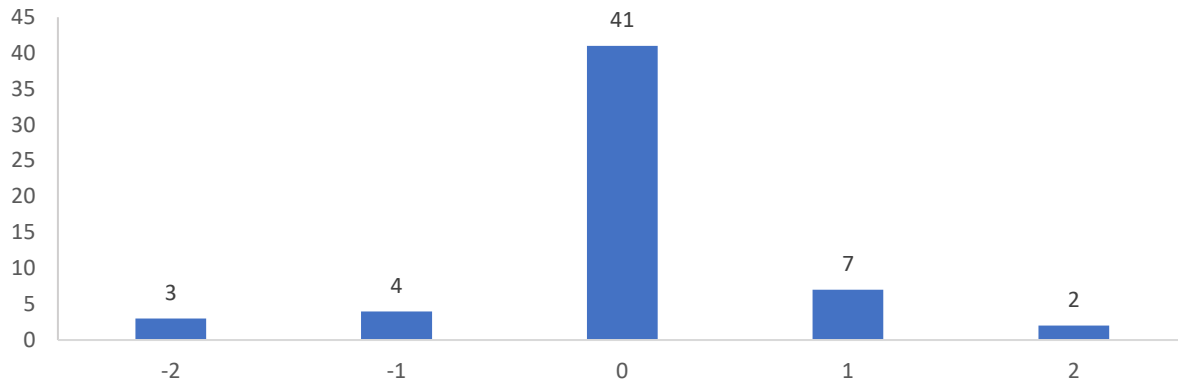
email included a photo of their neighbor, the street they live on, and a description of why they use active transportation regularly.

- **Action & Maintenance:** Participants in the Action or Maintenance stages need to reaffirm their commitment and find solutions to prevent relapsing into past habits. These participants were asked to share a story of why they use active transportation and why. Their responses were then formatted and shared via email, with fellow neighbors considering or preparing to use active transportation.

To analyze whether participants changed stages, the project team conducted a panel analysis of 57 respondents who identified with one of the Stages of Change statements above in both the baseline and follow-up participant surveys. As Figure 8 shows, seven respondents advanced forward by one stage, two respondents advanced forward by two stages, and 41 respondents did not change their stage.

Figure 8: Net Change in Stage (N=57)

As reported in the panel analysis of the baseline and follow-up participant surveys

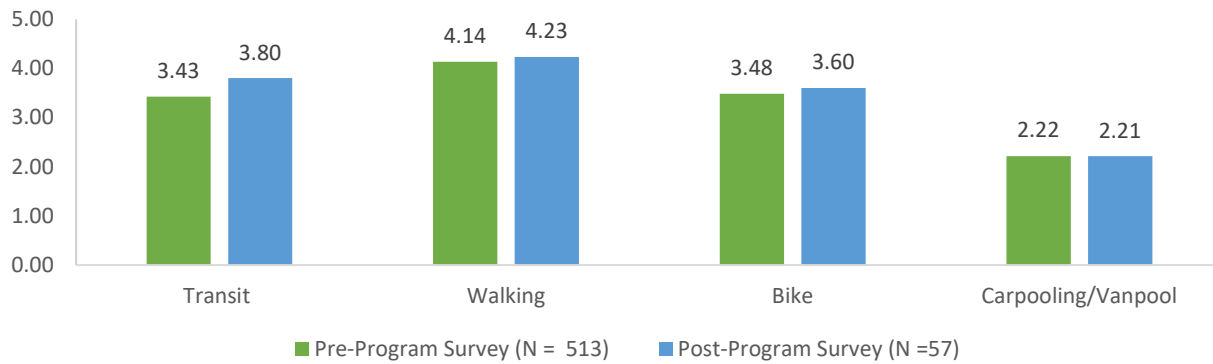


Transportation Options Confidence Levels

Both surveys asked respondents to rate their confidence using different transportation options on a scale of 1 to 5 (5 being very confident and 1 being not at all confident). As the average confidence ratings in Figure 7 show, panel respondents indicated greater confidence in transit, walking, and bicycling.

Figure 7: Respondents’ Average Confidence Rating in Using Transportation Option

As reported by the panel analysis of the baseline and follow-up participant surveys



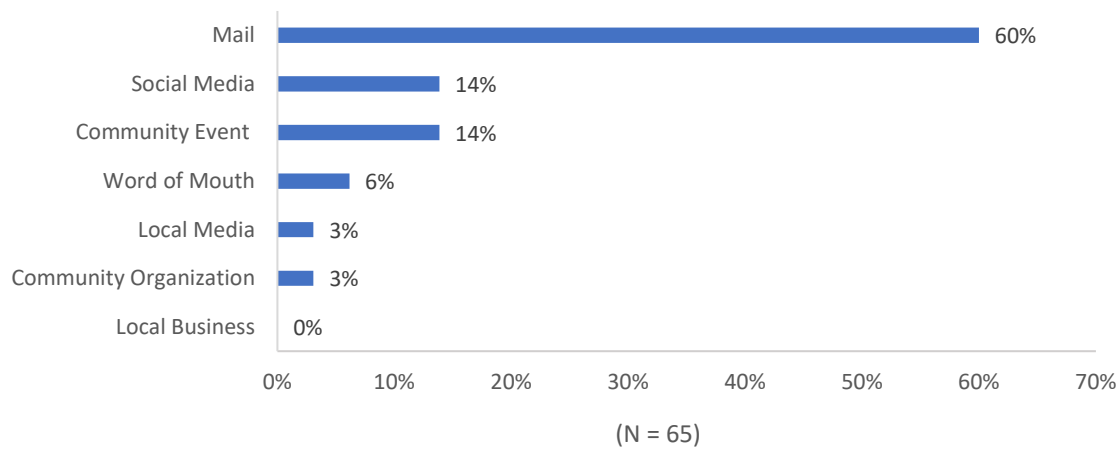
Participant Survey Program Feedback

The project team collected participant feedback on the effectiveness of various program elements, such as promotional strategies, the Travel Tool Kits, and events. The project team will consider this feedback when implementing future iterations of the SmartTrips: Eugene program.

As Figure 9 shows, six in ten respondents (60%) reported hearing about the SmartTrips program through mail. This result is expected and it should be noted that direct mail continues to be the top promotional strategy. Social media marketing of the program and community events were the second most common format for hearing about the program.

Figure 9: How Respondents Heard about the Program (N=74)

As reported in the follow-up participant survey (note: respondents could select multiple answer options)



Post-program survey respondents resoundingly reported the Travel Tools Kit were useful, with more than three in five respondents (61%) characterizing the kits as “very useful” and more than one in three respondents (35%) characterizing the kits as “somewhat useful.” Combined, the majority of respondents (97%) found the kits useful. Furthermore, over two in three respondents (67%) reported the Travel Tools Kit was their favorite aspect of the SmartTrips program. Of respondents who ordered a Travel Tools Kit, 94% reported receiving their kit in a timely manner after placing their order.

Figure 11: Usefulness of Travel Tools Kit (N=56)

As reported in the follow-up participants survey

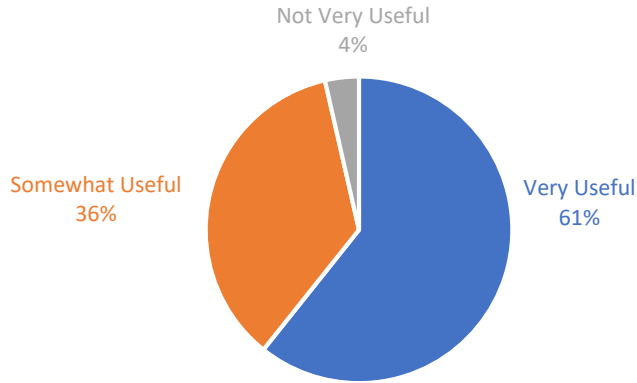
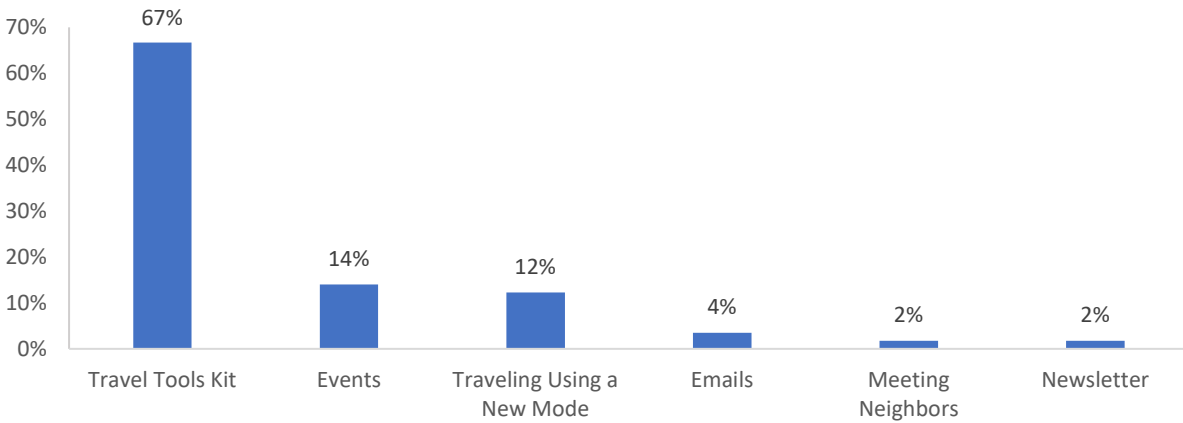


Figure 12: Respondents Favorite Part about the Program (N=57)

As reported in the follow-up participant survey



Demographics of Target Area Survey Respondents

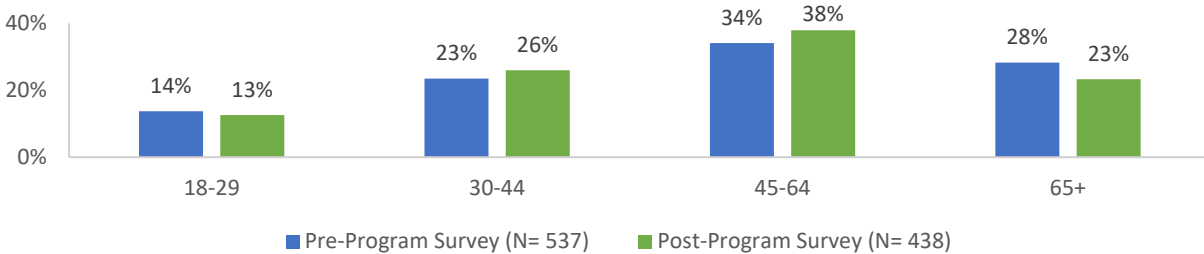
Both the pre- and post-program target area surveys, with 555 and 448 respondents respectively, asked a series of demographic questions. Results show high levels of consistency between the pre- and post-program survey respondents for most demographic fields. Data regarding how many adults live in the respondent’s household deviated the most from this trend, with the number of single adult person households dropping by roughly half (from 44% to 25%), and the remaining four answer categories (ranging from 2 to 5+ person households) collectively increasing 18%.

Age of Respondents

Respondents aged 45 to 64 years old comprised the largest age group bracket of the pre- and post-survey respondents (34% and 38%, respectively), followed by those 65+ and respondents 30 to 44 years old.

Figure 14: Age of Respondents

As reported in the pre- and post-program target area surveys

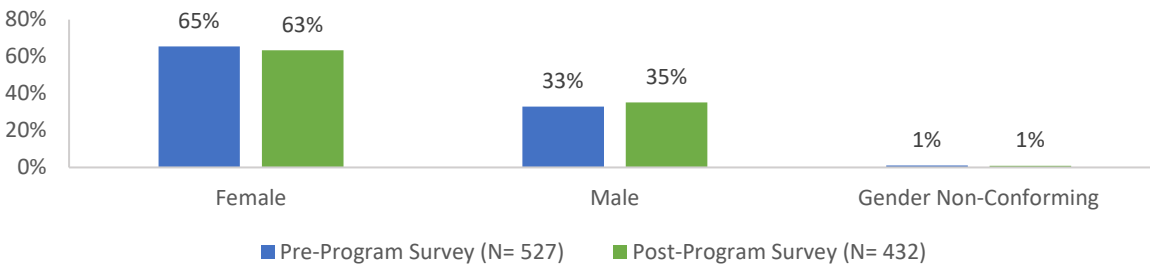


Gender of Respondents

The gender breakdown was two-thirds female and one-third male. The high percentage of female target area survey respondents is a common trend from similar transportation behavior change surveys in Oregon and SmartTrips programs. Because this is consistent between both the pre- and post-program surveys, it gives the project team more confidence that the two data sets are comparable.

Figure 15: Gender of Respondents*

*As reported in the pre- and post-program target area surveys (note: *Respondents could select multiple responses)*

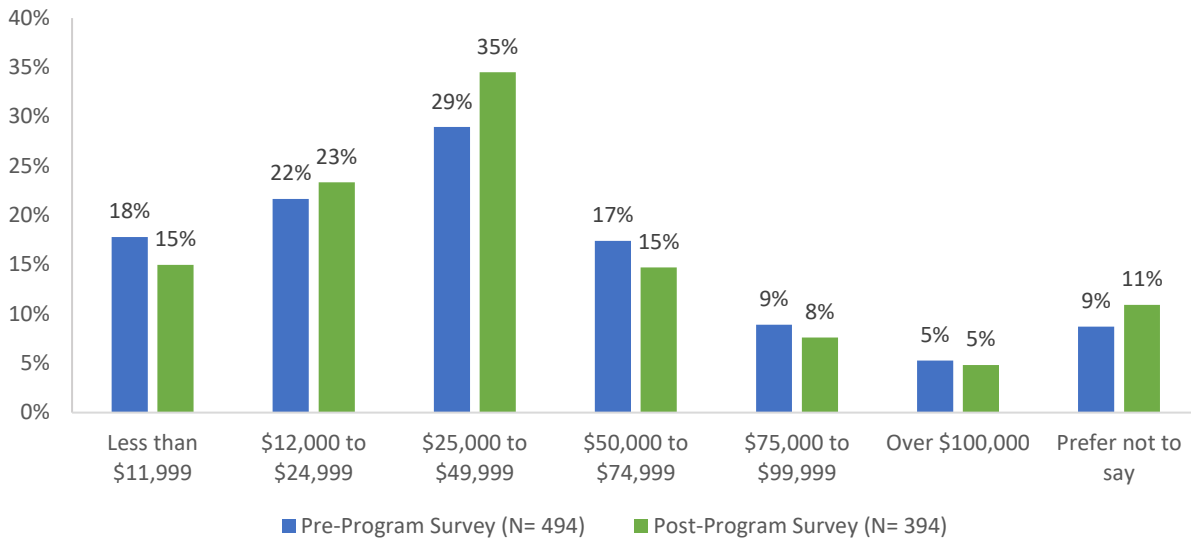


Income of Respondents

The highest percentages of responses (29% of pre- and 35% of post-survey respondents) came from households with annual incomes between \$25,000 and \$49,999, followed by those with annual incomes between \$12,000 and \$24,999. Household income remained relatively consistent between the pre- and post-program surveys, with the largest differences being a 6% difference between the \$25,000 to \$49,999 income categories.

Figure 16: Income of Respondents

As reported in the pre- and post-program target area surveys

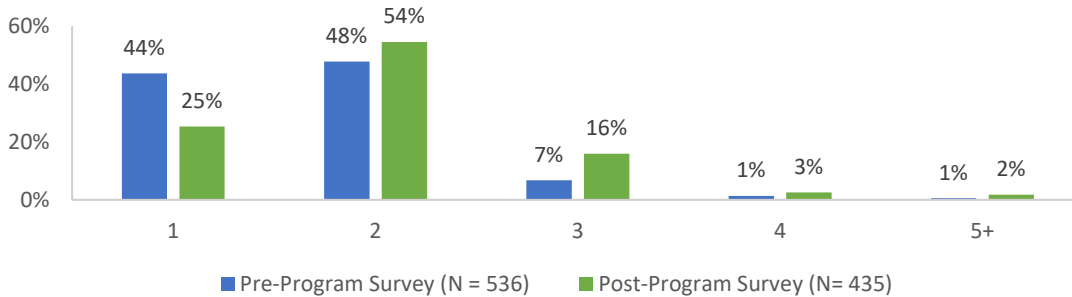


Adults in Household

Household size differed somewhat between the pre- and post-program target area surveys. In both surveys, approximately half of survey respondents live with one other adult. The proportion of single adult households, however, dropped by roughly half (from 44% to 25%) between the pre- and post-program survey.

Figure 17: Adults in Household

As reported in the pre- and post-program target area surveys

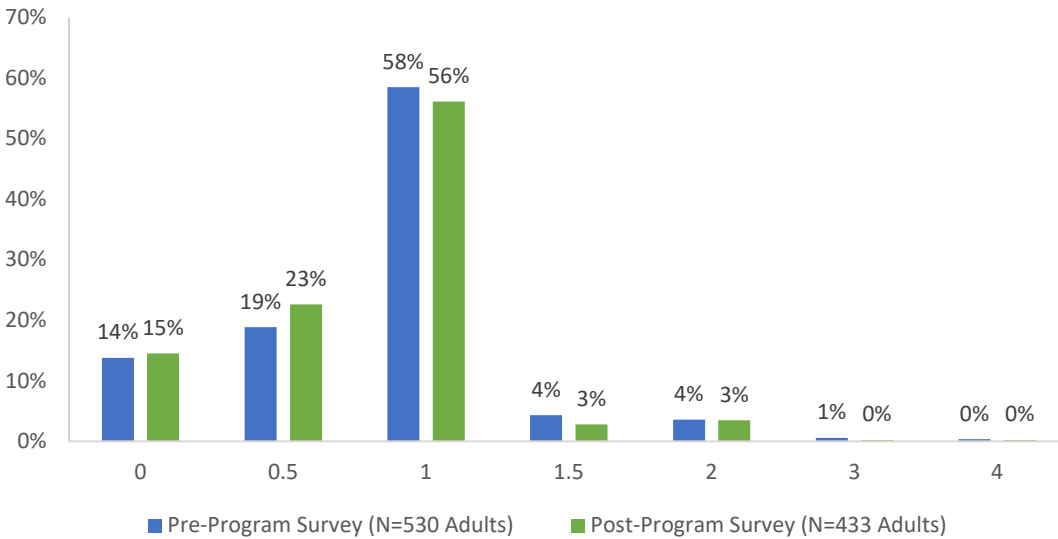


Vehicles per Adult

The number of vehicles per adult remained relatively consistent between the pre- and post-program surveys. Over half of pre- and post-program survey respondents have access to their own vehicle, followed by approximately one fifth of households having access to one vehicle per two adults (or 0.5 vehicles per person).

Figure 18: Vehicles per Adult

As reported in the pre- and post-program target area surveys

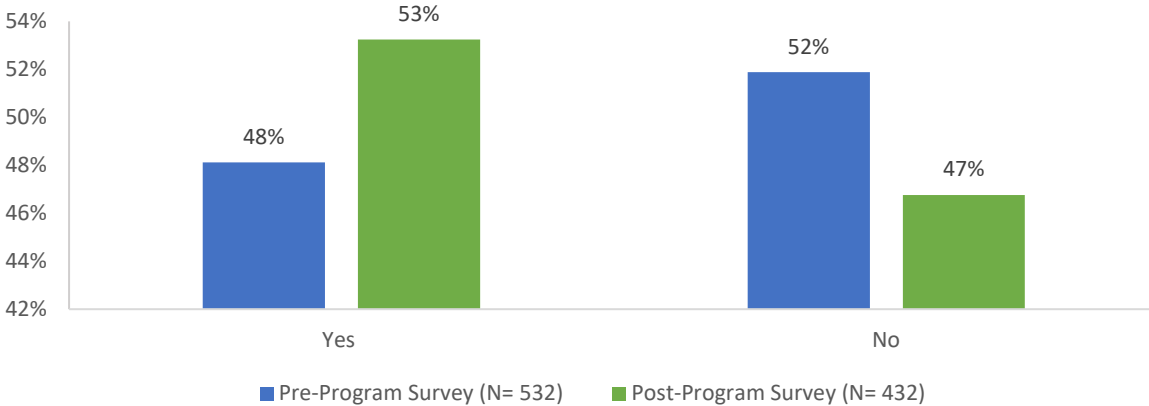


Access to a Working Bicycle

Over the course of the SmartTrips program, access to working bicycles increased for survey respondents from 48% to 53%. This leaves roughly half of respondents with the option of commuting and recreating by bike.

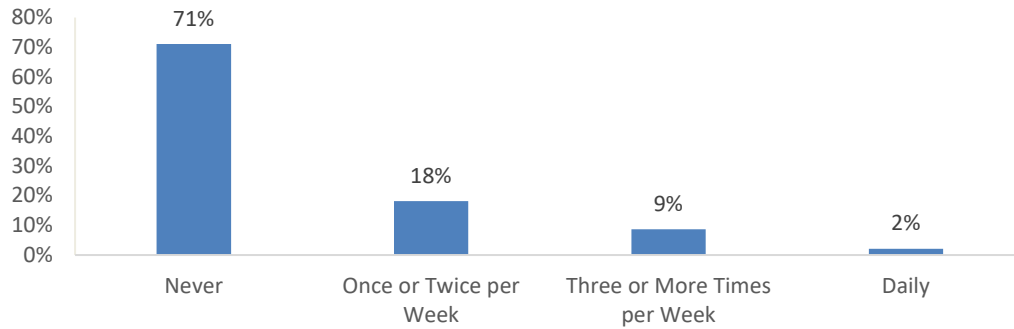
Figure 19: Access to a Working Bicycle

As reported in the pre- and post-program target area surveys

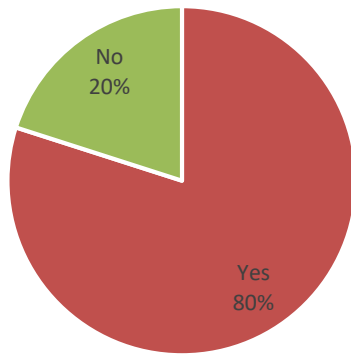


Appendix A: Additional Charts for Consideration

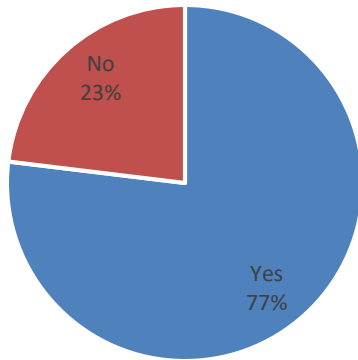
How often do you use the new West EmX service along W 11th? (N=380)



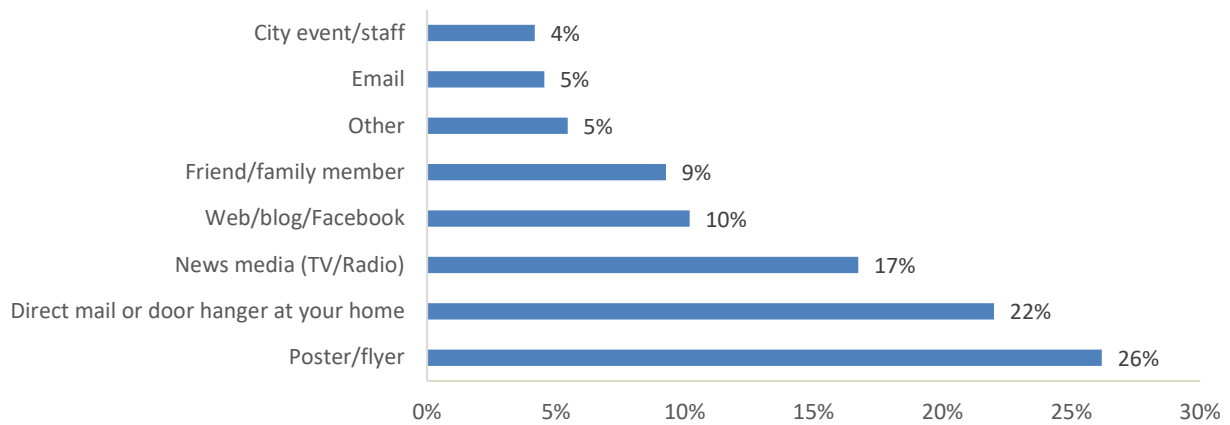
In the past six months, do you remember reading, seeing or hearing any information from the City of Eugene specifically about transportation options (walking, bicycling, carpooling, and transit) available in your neighborhood? (N=339)



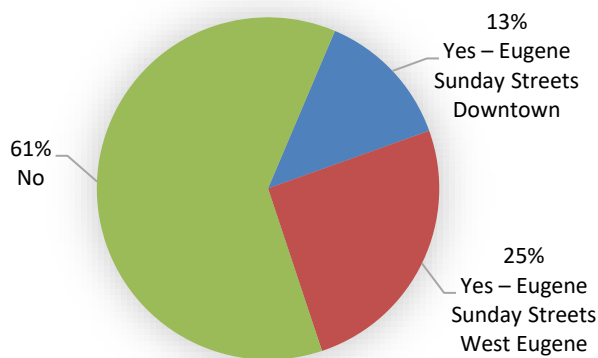
Have you heard about the Eugene Sunday Streets events that took place in Downtown on July 29 and/or West Eugene Neighborhood on September 23? (N=416)



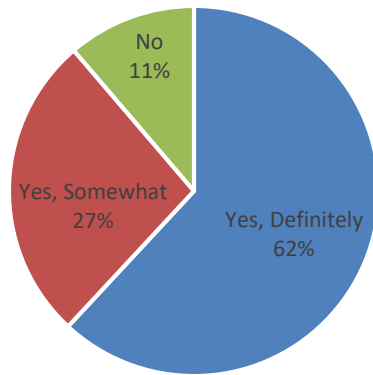
Where did you hear about Eugene Sunday Streets? (N=550)



Did you attend a Eugene Sunday Streets event this summer? (N=335)



When you walk or bike, do you consider it as part of your daily physical activity? (N=302)



Do you believe you received your Travel Tools Kit in a timely manner after you placed your order? (N=51)

