UNIVERSITY OF MARYLAND

National Transportation Center

Project ID: NTC2014-SU-R-01

HIGH OCCUPANCY TOLL LANES WITH A REFUND OPTION
A STATED PREFERENCE SURVEY OF THE PHOENIX-METROPOLITAN AREA

FINAL REPORT

by

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March 2015

ACKNOWLEDGEMENTS

The PI wishes to acknowledge the support from the National Transportation Center (NTC) @ Maryland for this project. The PI would also like to thank Dr. Ram Pendyala at the Georgia Institute of Technology for his inputs on the survey design, Ms Kale Aziz and Ms Hannah Housenga for their assistance in the survey development, and Ms. Sravani Vadlamai for her contribution to the data analysis.

DISCLAIMER

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EXCUTIVE SUMMARY

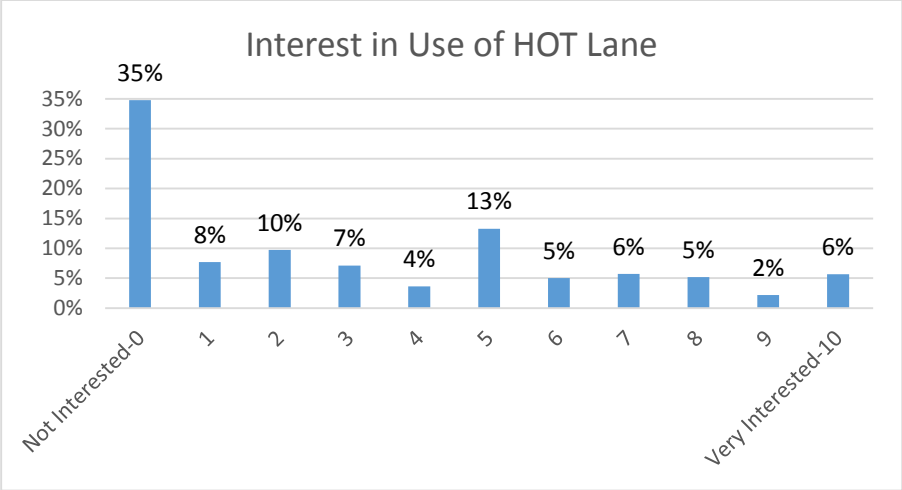
In recent years, managed lanes (MLs) have been increasingly advocated as a way to reduce congestion. In the past four years alone, the number of priced ML facilities in the United States has risen from 6 to 17 facilities, an increase of over 450 tolled miles (Federal Highway Administration, 2013a). Although priced MLs are prevalent in the United States, there is generally a negative bias for their implementation. In fact, many high-occupancy-vehicle (HOV) to high occupancy-toll (HOT) lane conversions have been halted in metropolitan areas due to perceived public opposition (Ungemah, Swisher, & Tighe, 2005). Reasons for negative public reaction vary. However, one plausible reason is that travelers may not receive expected benefits when using MLs due to uncertainties in traffic. For example, if a traveler on an HOT lane were to come upon a vehicle incident that is not reflected by the time display, travelers may be discouraged.

To further benefit the users and increase public acceptance of priced MLs, this study proposes an innovative pricing concept where a travel time refund (TTR) option is available. When choosing to pay to use MLs, a traveler is offered the chance to purchase an additional TTR, or "insurance". This insurance ensures that the user will arrive to a specified destination within a certain amount of travel time savings. If the user fails to arrive at the specified destination within that time savings due to disturbances in traffic, then the user would be refunded the toll amount, but not the additional cost of the TTR. The TTR cost would always be less than the toll amount.

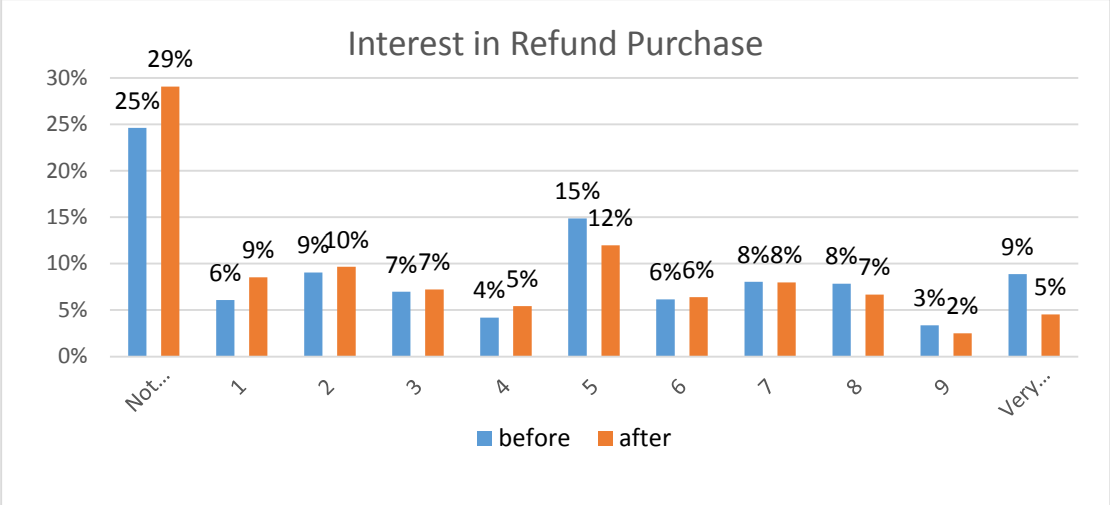
The purpose of this study is to investigate travelers' reactions to a possible refund option of priced MLs. To gauge general interest and concerns regarding this concept and to elicit travelers' choices of ML usage and refund claims under various situations, a stated preference survey was developed and distributed in the Phoenix, Arizona metropolitan area in the fall of 2014. The survey consisted of a total of 40 questions split into four different sections. The first section collected information on the respondents' last trip on the I-10 in the Phoenix-metro area within the past year, if one existed. The second section introduced and gathered preliminary interest on the refund option. The third section consisted of three or four stated preference scenarios where respondents had the choice to choose between driving in the general purpose lanes, ML lane without the refund option, or ML with the refund option given different levels of factors. The fourth and final section contained questions regarding demographic data.

A total of 2274 responses were gathered throughout the duration of the survey. Of those 2274 responses, about 80% (1816) were completed. This project also includes an exploratory data analysis. Descriptive analysis is performed regarding individual and household demographic variables, HOV usage and satisfaction levels, HOT usage and interests, and TTR interests. Cross-tabulation analysis is further conducted to examine trends and correlations between variables, if any.

The general interest in using HOT lane and TTR is shown in the two figures below, respectively. The observed general negative attitude towards HOT and TTR is in line with expectation. However, the figures have revealed that users are less negative about TTR than HOT, supporting the idea that TTR could make HOT facilities more appealing.



Percentage of Respondents Interested in Using an HOT Lane



Percentage of Respondents Interested in the Refund Option

Because most survey takers were in Arizona, the majority (53%) of respondents were unfamiliar with HOT lanes and their practices. This may have had an impact on the interest in the TTR, although it was not apparent when looking at the cross-tabulation between HOT knowledge and TTR interest. The concept of the HOT lane and "paying to travel" itself may have turned people away from the TTR option. Therefore, similar surveys implementing new HOT pricing strategies should be deployed where current HOT practices are already in existence. Moreover, introducing the TTR concept to current HOT users may also receive valuable feedback in its future deployment.

Future analysis will include weighting the data to account for sample bias, an exploration of the stated preference scenarios to determine what factors were significant in peoples' choices, and a predictive model of those choices based on demographic information.

1.0 INTRODUCTION

In recent years, managed lanes (MLs) have been increasingly advocated as a way to reduce congestion. In the past four years alone, the number of priced ML facilities in the United States has risen from 6 to 17 facilities, an increase of over 450 tolled miles (Federal Highway Administration, 2013a). As defined by the Federal Highway Administration (FHWA), MLs are lanes that use active management by an operating agency to manage demand and maintain a desired level of service (LOS), utilizing either new strategies or modifying existing ones (FHWA, 2013b). One type of MLs apply vehicle restrictions, including bus rapid transit lanes, truck only lanes, and high-occupancy vehicle (HOV) lanes. HOV lanes require a minimum number of generally two or more vehicle occupants to use a dedicated lane on an expressway. Another type of MLs employs pricing for demand management. Priced MLs commonly occur in the form of high-occupancy toll (HOT) lanes. HOT lanes are managed lanes that use tolls or a small fee to regulate access to the facility. High occupancy vehicles (HOVs), public transit buses, and emergency vehicles may all use HOT lanes at no charge.

Currently, 91 toll facilities exist in 21 different states and Puerto Rico (FHWA, 2013b). This results in over 5,400 lane miles of tolled roadway in the United States. Besides HOTs, these priced facilities include freeways where access to all lanes in the facility are tolled. One such example is that of the Dallas North Tollway in Dallas, Texas. In this system, all lanes in the 30 mile stretch are priced (FHWA, 2013a). HOT lanes, however, are dedicated lanes on an existing expressway next to cost-free general purpose lanes (GPLs).

Current HOT lanes invoke two main types of pricing strategies: static, or fixed, variable tolling and dynamic variable tolling. Static tolls set up prices based on time of day. However, they cannot be modified to adjust to real time traffic conditions (Burris et al., 2012). A typical example of static variable tolling is that of the Katy Freeway in Houston, TX. In 2008, the Katy Freeway expansion project added four MLs to the facility of the same name. The tolls on the MLs vary by time of day: $4.00 for peak, $2.00 for shoulder, and $1.00 for off times (Patil et al., 2011). On the other hand, dynamic tolling allows ML prices to be adjusted to fit current traffic circumstances. But roadway users only get to know prices upon arriving at MLs (Burris et al., 2012). Examples of dynamic tolling include the I-15 in San Diego and the I-394 in Minnesota. On the I-15, tolls vary as often as every six minutes, depending on traffic conditions. Similar MLs exist on the I-394 in Minnesota. The I-394 has prices that vary dynamically between $0.25 and $4.00, with a maximum of $8.00, as often as every 3 minutes (Yin and Lou, 2009).

There are a variety of technologies to collect tolls for priced MLs. In recent years, many facilities have given frequent riders the option to purchase electronic reader tags. These tags are mounted in the vehicle and when scanned, the system recognizes the vehicle and charges a small fee to a pre-registered account. Fees for registered vehicles offered by some facilities are even lower than the general toll. Other payment options include standard toll booth, infrared technologies, and pay-by-mail video tolling (FHWA, 2013b).

Although priced MLs are prevalent in the United States, there is generally a negative bias for their implementation. In fact, many HOV to HOT lane conversions have been halted in metropolitan areas due to perceived public opposition (Ungemah, Swisher, & Tighe, 2005). Reasons for negative public reaction vary. However, one plausible reason is that travelers may not receive expected benefits when using MLs due to uncertainties in traffic. For example, if a traveler on an HOT lane were to come upon a vehicle incident that is not reflected by the time display, travelers may be discouraged.

To further benefit the users and increase public acceptance of priced MLs, innovative pricing strategies are needed to make congestion pricing more appealing. Kockelman and Kalmanje (2005) conducted a survey on one such strategy where people would be offered a travel credit allowance every month in order to use the freeways. If at the end of the month the user did not use all of the credit up, the remaining amount would be given directly to the driver.

This study proposes a different pricing strategy where a travel time refund (TTR) option is available. When choosing to pay to use MLs, a traveler is offered the chance to purchase an additional TTR, or "insurance". This insurance ensures that the user will arrive to a specified destination within a certain amount of travel time savings. If the user fails to arrive at the specified destination within that time savings due to disturbances in traffic, then the user would be refunded the toll amount, but not the additional cost of the TTR. The TTR cost would always be less than the toll amount.

Aside from the user reliability incentives and potential lower fees, there are numerous possible benefits of the refund option. Firstly, it is anticipated that congestion in GPLs would be reduced if more users are willing to make use of less-congested HOTs. The TTR would also provide an additional source of funding for departments of transportation (DOTs) where lack of financial resources currently exists. Finally, the TTR option would hope to change negative attitudes towards managed lanes and priced roadways.

The purpose of this study is to investigate travelers' reactions to a possible refund option of priced MLs. To gauge general interest and concerns regarding this concept and to elicit travelers' choices of ML usage and refund claims under various situations, a stated preference survey was developed and distributed in the Phoenix, Arizona metropolitan area in the fall of 2014. This project report describes design of the questionnaire, administration of the survey, and preliminary results on demographic data and influencing factors.

2.0 LITERATURE REVIEW

Because the focus of this study is a stated preference survey to investigate travelers' reactions to a possible refund option of priced MLs, the literature review focuses on survey design methods and existing stated preference surveys of ML facilities.

Stated preference (SP) surveys are designed to give respondents hypothetical situations or scenarios in which they must make a choice, thus their preference is stated. Revealed preference (RP) studies, on the other hand, are studies that involved the actual choices users make, from which preferences can be revealed. In transportation, stated preference surveys commonly make people choose between different traveling alternatives, as is the case when choosing to pay for a priced ML or travel in the GPLs. In terms of congestion pricing, many surveys deploy SP surveys and develop models to understand respondents' willingness to pay.

2.1 SURVEY DESIGN METHODS

Patil et al. (2011) evaluated three different stated preference survey designs using the Katy Freeway as their backdrop: D-efficient design, random attribute level generation (random), and adaptive random experiment. To negate the effects of always choosing the cheapest option, adaptive random generation performed the best. Therefore, a variation of this approach, called branching, was used in the survey design of this paper. Hess et al. (2007) also evaluated three survey design methods: orthogonal design with random block, orthogonal design with non-random blocking, and efficient (or D-efficient design). Like Patil et al. (2011), they concluded that the efficient design fell short and a much better model fit was achieved through non-random blocking methods. Additionally, different survey designs led to differences in results.

2.2 PAST STATED- AND REVEALED- PREFERENCE SURVEYS

An extensive amount of literature exists on stated preference surveys where priced MLs did not exist at the time. One such example is that of the Katy Freeway in Houston, TX. Although the Katy Freeway currently has HOT lanes, surveys were previously deployed before their implementation. Burris et al. (2007) completed an earlier survey on the Katy Freeway than Patil et al (2011). Some of their results showed that for those interested in MLs, the main reasons were due to travel time savings and travel time reliability. Moreover, it's important to mention that they concluded additional incentives must be given to current carpoolers to remain in a carpool. Otherwise, with tolling costs constant, some HOV users are likely to convert to SOV. Therefore, if converting from an HOV lane to an HOT lane, it is better to allow HOVs to use the ML for free rather than having them pay the full toll amount.

Surveys about existing priced ML provide rich revealed preference data to infer information from choices made by users. Brownstone et al. (2002) used data from the I-15 in San Diego to infer a driver's willingness to pay. They found that the willingness to pay was roughly $30/hour,

a higher estimate than other studies (Calfee and Winston, 1998), which may be due to the demographic in the San Diego area. An even higher willingness to pay estimate derived from the I-15 empirical data is found in Burris et al. (2012). Median value of travel time, or willingness to pay, was much higher in the afternoon than other times of day at $71.41/hour. Burris et al. also looked at the value of travel time for I-394 in Minneapolis, where morning VOT was found to be $78/hour and afternoon VOT was $116/hour. Devarasetty et al. (2014) analyzed psychological variables to predict priced ML use on the I-15, as well as on the I-25 in Denver and the I-95 Miami.

3.0 SURVEY DESIGN AND ADMINISTRATION

3.1 BACKGROUND

The HOT Refund survey questionnaire was designed to gauge travelers' interest and concerns in the refund option, and to elicit travelers' choices of ML usage and refund claims under various stated-preference scenarios. Additionally, demographics data was gathered in order to develop a choice model to describe travelers' stated ML usage and TTR purchase.

Ideally, the survey would have been conducted in an area where HOT lane facilities currently exist, such as in San Diego, Minneapolis, or Houston, etc. However, due to limited project scope, Interstate 10 in the Phoenix metropolitan area was identified as the study area. I-10 currently has HOV lanes throughout the study area. The location of interest on the I-10 in the survey is shown in blue in Figure 1. This stretch extends from the Loop 101 Agua Fria Freeway west of Phoenix to the Loop 202 Santan Freeway in southeast of Phoenix.

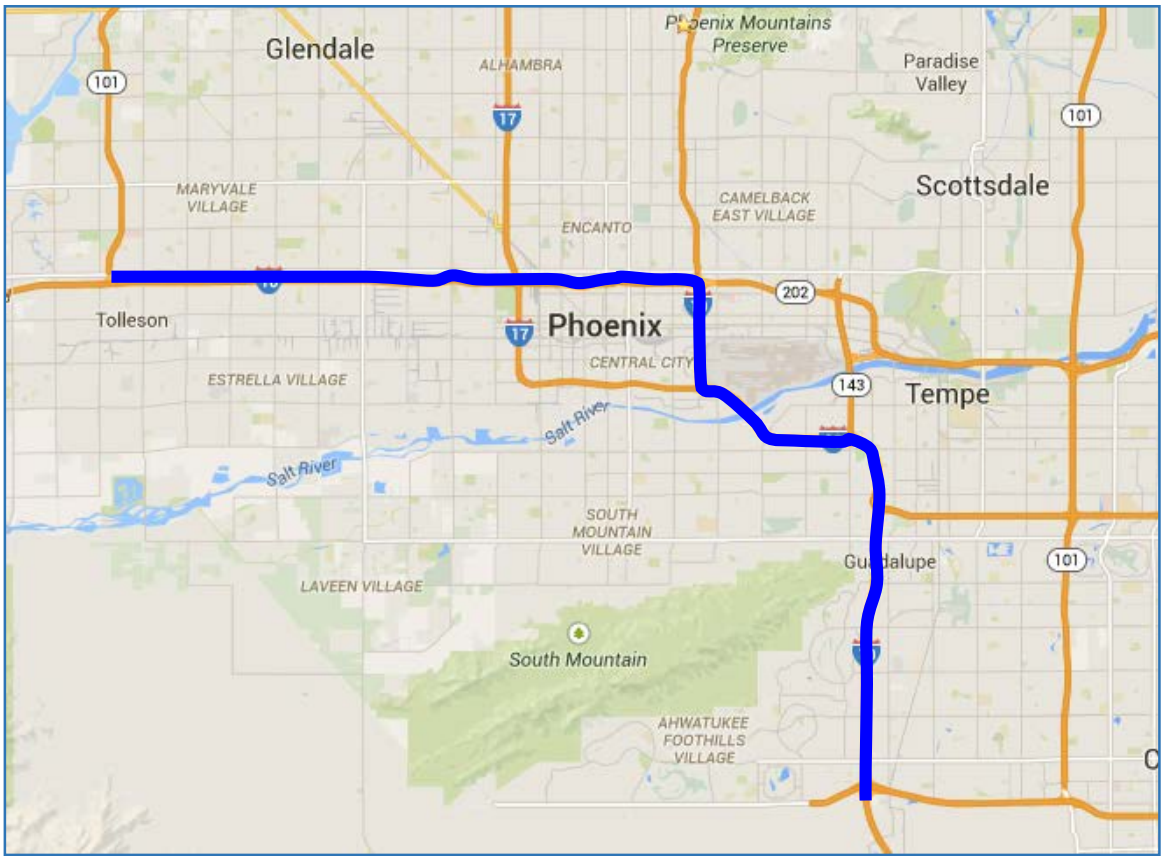


Figure 1: Map of Study Area

Although no HOT lanes currently exist in Arizona, the concept itself is not something newly introduced by this paper. In the fall 2012, the Maricopa Association of Governments (MAG), the regional agency that serves the Phoenix-metropolitan area, completed a Managed Lane Network Development Strategy (MAG, 2012). The purpose of this strategy was to establish feasibility for introducing HOT lanes within the Phoenix area. The Managed Lane Network Development Strategy covers a variety of issues regarding the implementation HOT lanes in the valley. The study goes in depth regarding lane access in MLs and the pros and cons between restricted and continuous access along with how to separate the MLs from the GPLs. It makes pertinent the idea of expanding the hours of operation for the current HOV lanes with the introduction of pricing. Furthermore, the Managed Lane Network Development Strategy delves into different pricing strategies. It explains the pros and cons of static and dynamic pricing and whether to charge per mile, segment, or facility. The Strategy also brings to light many legal and regulatory issues, such as how the project will be operated and financed. And lastly, provides recommendations for all of these topics to make HOT lanes a reality in the valley.

Although the MAG (MAG, 2012) study led to great discussions on HOT, there are currently no plans to implement them. In order to conduct our survey, a hypothetical HOT lane was presented to respondents. I-10 in the Phoenix area was selected as the HOT lane location due to its use as a major east-west corridor that crosses the state. Additionally, it cuts through the heart of downtown Phoenix where many businesses are located, making it a major daily commuting route.

The survey was distributed mainly through distribution lists in the Phoenix area. It was also shared through social media websites, so those outside of the Phoenix area could also participate in the survey. For this particular group of respondents, Phoenix-specific travel questions were hidden and descriptions of Phoenix freeways were included.

3.2 DESIGN

The survey consisted of a total of 40 questions split into four different sections. The first section collected information on the respondents' last trip on the I-10 in the Phoenix-metro area within the past year, if one existed. The second section introduced and gathered preliminary interest on the refund option. The third section consisted of three or four stated preference scenarios where respondents had the choice to choose between driving in the GPLs, ML lane without the refund option, or ML with the refund option given different levels of factors. The fourth and final section contained questions regarding demographic data. A copy of the survey script can be found in Appendix A.

Two different versions of the survey were deployed throughout the process: Version A and Version B. Version B includes additional questions and some changes to factors or levels that were conceived during the data gathering process. The differences in these versions are described in the next sections.

3.2.1 Section 1: Last Interstate-10 Trip

In the first portion of the survey, respondents were asked to give details of their last trip on the I-10. If respondents had not traveled on the I-10 in the Phoenix-metro area within the past year, this section was skipped. If a survey user responded that they had taken such a trip, Version B included additional questions asking the frequency of traveling the I-10 and primary trip purpose.

Users who had taken an I-10 trip in the past year were asked to describe their most recent trip regarding purpose, day of the week the trip occurred, trip start time, zip codes of where the trip started and ended, if the HOV lane was used, type of vehicle used, and number of people in the car. Additionally, respondents were asked to select the entrance and exit ramps on I-10 used in their last trip and to estimate the total travel time. The last I-10 trip is used in the stated-preference section as the first scenario. Therefore, the entrance and exit ramps to the I-10 were mandatory in order to pipe distances into the stated-preference section.

3.2.2 Section 2: General Attitude

The General Attitude section gathered information on people's background knowledge and their general interests and attitudes regarding MLs. In addition, it introduced the concept of the travel time refund (TTR) concept.

First, respondents were asked about their familiarity with HOV lanes. If a respondent was familiar with HOVs, they were then asked their frequency of use and satisfaction with HOV lanes. Similarly, respondents were asked their familiarity with, use, and interest in HOT lanes. Finally, the concept of the TTR was explained and respondents were asked their interest in purchasing the TTR.

3.2.3 Section 3: Stated Preference Scenarios

In the stated-preference section, each survey respondent was presented 4 different scenarios randomly generated from a pool of 288 possible scenarios. Users were asked to choose between the GPL, a hypothetical HOT lane, or the HOT lane with the TTR on the I-10. Figure 2 shows an example of the stated preference question. The text shown in bold in the question are the choice descriptions and the variables related to the trip. Carpooling was not given as an option to respondents, as the focus of this study is travelers' willingness to pay rather than their carpool choices.

Six random variables were presented in each scenario (see Figure 2): trip distance, time of day, GPL time range or congestion level, HOT cost, HOT lane travel time range, and HOT with TTR cost. Two out of the four scenarios displayed that the GPLs were "heavily congested". This is consistent with the practice that most HOT facilities only display HOT lane travel time. The other two scenarios displayed the GPL travel time range. This was done so that it could be determined if displaying the GPL travel time range alongside the ML travel time range would have an effect on users' choices.

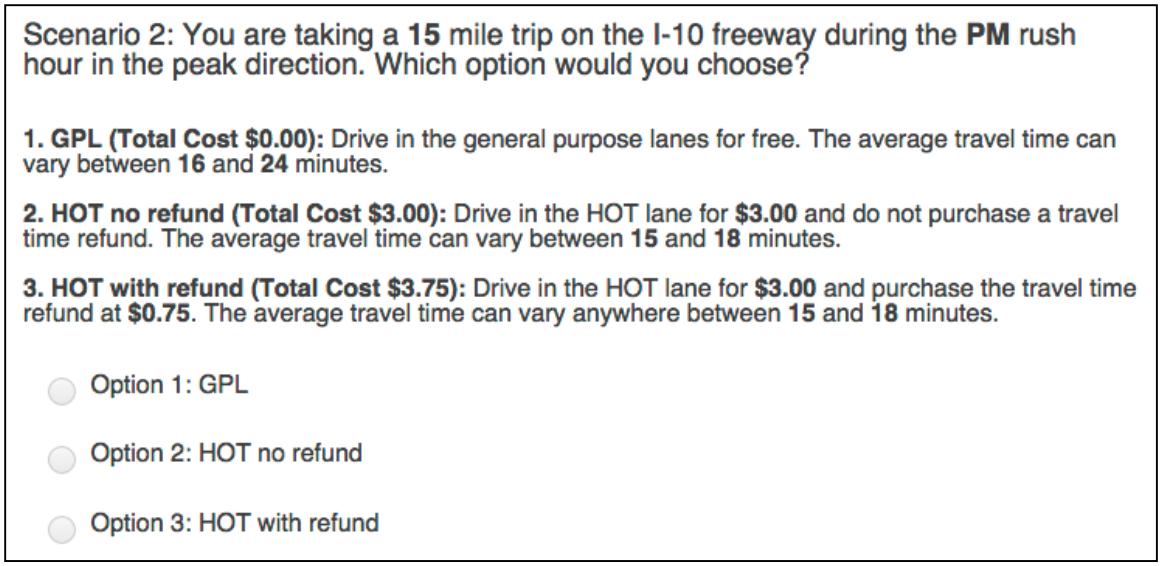


Figure 2: An Example of Stated-Preference Scenario

The factors and levels that went into generating the random scenarios for the stated preference questions are presented in Table 1.

Table 1: Alternative Specific Factors for Stated Preference Scenarios

Alternative	Attribute	Levels
All	Trip Distance (miles)	Reported, 10, 15, 25
	Peak Hour	AM, PM
	Travel Speed (mph)	55 (base)
GPLs	Travel Time Index Factor	1.2, 1.3, 1.4
	Travel Time Variability	"Heavily Congested", ±20%
HOT Only and HOT with TTR	Toll Rate (cents/mile)	5, 20, 35
	Travel Time Index Factor	1, 1.1
	Travel Time Variability	±10%
HOT with TTR	TTR Cost (% of Total Toll)	25%, then 10% or 50%

The first scenario (Scenario 0) was based off the respondent's last trip, where the distance was calculated from the entrance and exit ramps reported (see Section 3.2.1). The remaining three scenarios (Scenarios 1, 2, and 3) produced hypothetical trips of 10, 15, and 25 miles on the I-10, respectively. The distances were considered reasonable distances currently traversed on the section of the I-10 in question. No scenario was given a distance under 10 miles, as it was assumed that most respondents would not be willing to pay for a trip that short. The distances were fixed with Scenarios 1, 2, and 3 to prevent a random generation of the same scenario to the same respondent.

The peak hour time of day is random in Version B of the survey, while it is always in the PM peak hour in Version A.

Travel speed, travel time index factor, and travel time variability, are used to calculate the displayed travel time range. Although the speed limit on the I-10 in Phoenix is 65 mph, the base travel speed for all scenarios was 55 miles per hour (mph) to provide for a more realistic peak hour travel times. The "travel time index factor" is multiplied to the base travel time first to calculate the mean travel time. The index factor, or congestion factor, is based off of travel time index factors currently found on the I-10 freeway in Phoenix (FHWA 2009). The FHWA commonly publishes urban congestion reports for major cities in the United States. Data from 2009 was used to develop to the different levels of the index factor. The travel time variability is in percentage of the mean travel time. It is then applied to calculate the travel time interval displayed. GPL travel time has a higher variability of 20%, or in other words a larger time window. The HOT travel lane has a lower variability of 10%, which results in smaller time window than that of the GPLs. These percentages are similar to those used in Devarasetty et al. (2012). It is worth noting that the GPL variability of 20% in this survey actually prevents the lower bound of the travel time interval displayed for GPLs to become significantly lower than that of the MLs.

The toll rates of $0.05/mile, $0.20/mile, and $0.35/mile are random in the scenario generation and are similar to those used in in Devarasetty et al. (2012). They vary around $0.15/mile, the median toll rate per mile paid reported in Burris et al. (2012) from actual afternoon usage of Katy Freeway HOT lanes. Additionally, considering the possible mean travel time presented in the scenarios of this study, $0.05/mile is equivalent to a value of time ranging from $2.50/hour to $2.73/hour; $0.20/mile a value of travel time between $10.00/hour to $10.91/hour; and $0.35/mile a value of travel time between $17.50/hour to $19.09/hour. These values of time vary around the conclusions in Kockelman and Kalmanje (2005), where a respondent's willingness to pay was found to be $7.95 per hour, or about $0.13 per minute. Additional literature supports these toll rates by suggesting willingness to pay lies somewhere between $13 and $16 per hour (Yan et al., 2002). Although some studies found willingness to pay much higher at $30/hour, they suggest that the results may be biased due to a perceived higher level of safety on the HOT lane (Brownstone et al., 2012).

TTR cost is initially always 25% of the HOT lane toll rate in each scenario. Each scenario also contains a second branched question. In this question, TTR is either lower or higher depending on the first choice in the scenario. If the respondent chooses either the GPL lane or the HOT lane without the TTR in the first question of a scenario, then the TTR cost is lowered to 10%. Similarly, if the respondent chooses the HOT with TTR, the TTR cost is raised to 50% in the second question of a scenario. Figure 3 shows an example of the branched question presented in Figure 2. As can be seen, the cost of the HOT with refund ($3.30) decreased from that shown in Figure 2 ($3.75). This question would appear if the user had chosen either Option 1: GPL or Option 2: HOT no refund in the previous question in the same scenario

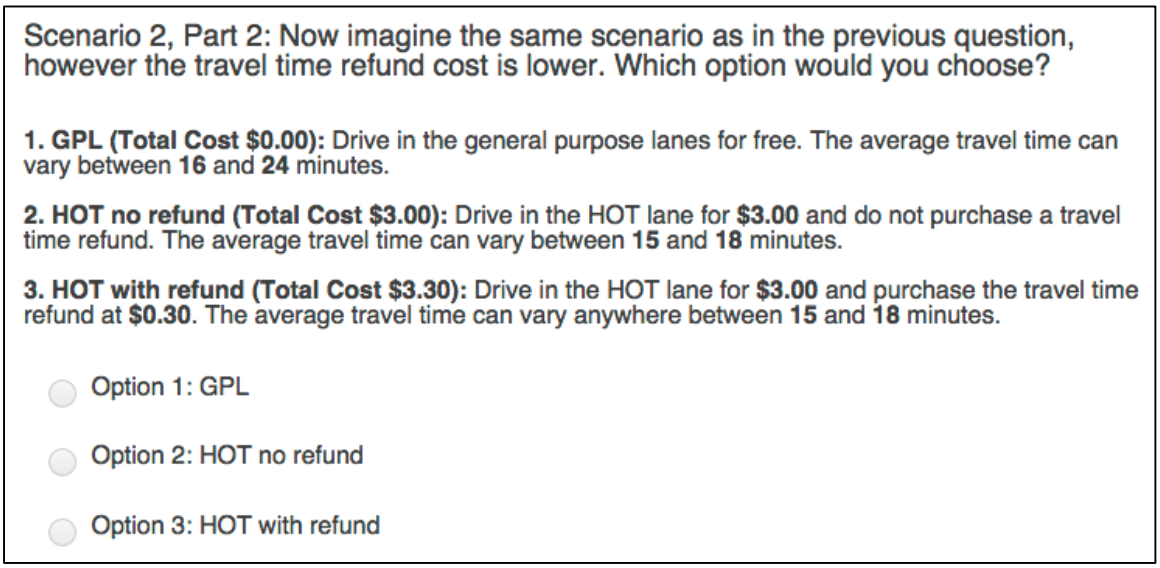


Figure 3: Example of Branched Question in Scenarios

3.2.4 Section 4: Demographics

The final section consisted of general demographic questions like age, gender, ethnicity, education, number of people and vehicles in the household, and household income. Additionally, it captured the interests in TTR after the scenarios were completed. Version B included additional free-response questions asking under what conditions a respondent would use the HOT land with and without the TTR.

3.3 ADMINISTRATION

Pretesting of the survey was conducted in July 2014. The full survey was deployed on October 13, 2014. Two different versions of the survey, Version A and Version B, were distributed to respondents. Respondents who took the survey before 12:00 PM on November 3rd, 2014 received Version A of the survey. Those who submitted their responses after that time until 11:59 PM on December 1st, 2014 were given Version B.

The survey was distributed through outlets in the Phoenix-metropolitan area. The majority of responses came from the Arizona State University (ASU) Parking and Transit Services (PTS) bi-weekly newsletter sent out to those who have done transactions with PTS. The PTS bi-weekly newsletter provided a way to reach a wide range of audiences with ease. Reminders were sent out occasionally throughout the deployment time period to encourage users to take the survey. Other responses came from sharing the survey through social media outlets such as Facebook, Twitter, and LinkedIn. Additionally, the survey link was sent out to the Institute of Transportation Engineers (ITE) Arizona Section and the Intelligent Transportation Society of Arizona.

As a way to gather responses, incentives were offered for those who completed the survey. Respondents who completed the survey before November 1st were put into a random drawing to receive a Fitbit. Respondents who completed the survey before December 1st (including those who had completed it prior to November 1st) were put into three other random drawings to receive and additional Fitbit or one of two Kindles.

4.0 RESULTS

A total of 2274 responses were gathered throughout the duration of the survey. Of those 2274 responses, about 80% (1816) were completed. Around 44% (1009) of the responses came from version A and 56% (1265) of the responses resulted from Version B.

4.1 GENERAL DEMOGRAPHIC DATA

4.1.1 Individual Demographics

All demographic questions were optional. Respondents were reminded that they could opt out of questions by either skipping to the next question or by selecting "Prefer Not to Answer" when given as an option. Table 2 (Appendix B) shows the general individual demographic data of the respondents obtained from the survey results. This subsection provides a brief description of each demographic variable.

About 64% (1118) of the total respondents were female, while 34% (591) of the respondents were male. The gender distribution of the sample is not ideally balanced. One hypothesis for this could be that women were more patient and willing to complete the survey. If weighted, the responses from males would be weighted more heavily in the general population.

The highest percent of the responses, 25% (402), came from the age range between 18 and 24 years of age. This is expected due to the majority of our responses coming from the ASU PTS's mailing list. The lowest percent of responses came from respondents 55 years of age and older at 14% (231). Again, this is expected because the majority of responses came from a university. Additionally, the older demographic may not be as comfortable or familiar with taking an online survey compared to those who are younger. 17% (270) of respondents were 25-30 years of age, 22% (361) were 31-40 years of age, and 22% (366) were 41-55 years of age.

In terms of ethnicity, the majority of respondents at 72% reported white/Caucasian. 10% (167) of respondents identified themselves as Hispanic. Asian came in third at 7% (117), which can be expected as a good amount of those who pursue higher education come from foreign countries. 5% (92) of respondents preferred not to answer. African American's came in next at 2% (41) followed by those who identified with "other" (37, 2%). Finally, 23 respondents (1%) identified with Native American and 6 people considered themselves Pacific Islanders. This ethnicity data may differ from the Phoenix population data, since the ethnicity of Phoenix appears to be more diverse than what the survey responses suggest. One would expect the Hispanic, and possibly the African American ethnicity, data of the Phoenix-metropolitan area to be higher. Reasons for the discrepancy could have arisen from the survey demographic being mainly college students and those who work with college students.

Like the ethnicity data, the education data may also be skewed to favor those with higher degrees. The majority of people (86%) responded that they have either completed some college (477, 27%), a four-year degree (535, 31%), or a master's degree (487, 28%). Furthermore, 9%

(154) of respondents had completed a doctoral degree and 2% (32) said they had completed some other professional degree such as an MD or JD. Only one person responded that they completed some high school or less and 3% (49) of respondents said they have a high school diploma or GED. Again, because the survey was administered on a platform that was mainly sent out to university students, employees, and staff, it was expected that a majority of people would have pursued higher-level education.

4.1.2 Household Demographics

Household demographic data captured the number of people and vehicles in the household, as well as the estimated gross household income per year. Table 3 in Appendix B shows the general household demographic data obtained from the survey results.

The majority of respondents (33%) had two people living in their household, including themselves. The remaining options were very similar in the percent of respondents: 18% (302) reported they lived alone, another 18% (306) said they had three people in their household, and 19% (307) responded that they have four people living in their household. 11% (187) people said they lived with 5 or more people. This shows that, besides two people living in a household, there is no general trend in the number of people in the household for this sample size.

Most households (722, 43%) reported owning two vehicles. This was followed by one vehicle at 24% (397) and three vehicles at 21% (352). 8% (133) of respondents said that they had four vehicles present in their household and 3% (56) responded that they have five or more vehicles available. 22 people (1%) responded that they have no vehicles in the household.

When analyzing household income data, the percentage of respondents seem to favor those with a higher income. 18% (273) of respondents reported that their household income was between $75,000 and $100,000. An additional 18% (265) said that their household income was even higher between $100,000 and $150,000. 17% (255) reported their income to be in between $30,000 and $50,000. 15% (224) said their household income was between $50,000 and $75,000. 12% (173) reported that their income was below $30,000 and 10% (155) reported that their income was above $150,000. 11% of respondents preferred not to answer the question. Although somewhat high, this may be due to the sensitive nature of the household income question or that some respondents simply did not know.

4.2 GENERAL ATTITUDE DATA

The following graphs display the general attitude data obtained from the survey sample. These questions, except for the last, were asked prior to the scenarios to gain an understanding of what previous knowledge the respondent had on common ML practices in existence.

Figure 4 shows the percent of respondents familiar with the concept of HOV lanes. A total of 1956 people answered the question, “Do you know what a High Occupancy Vehicle (HOV) lane is?” Out of the people that responded, 1927 (99%) responded with an answer of “Yes”. Only 29 respondents (1%) said that they did not know what an HOV lane was. Because the majority of

respondents came from the Phoenix-metropolitan area where HOVs are prevalent, the data shows what was expected.

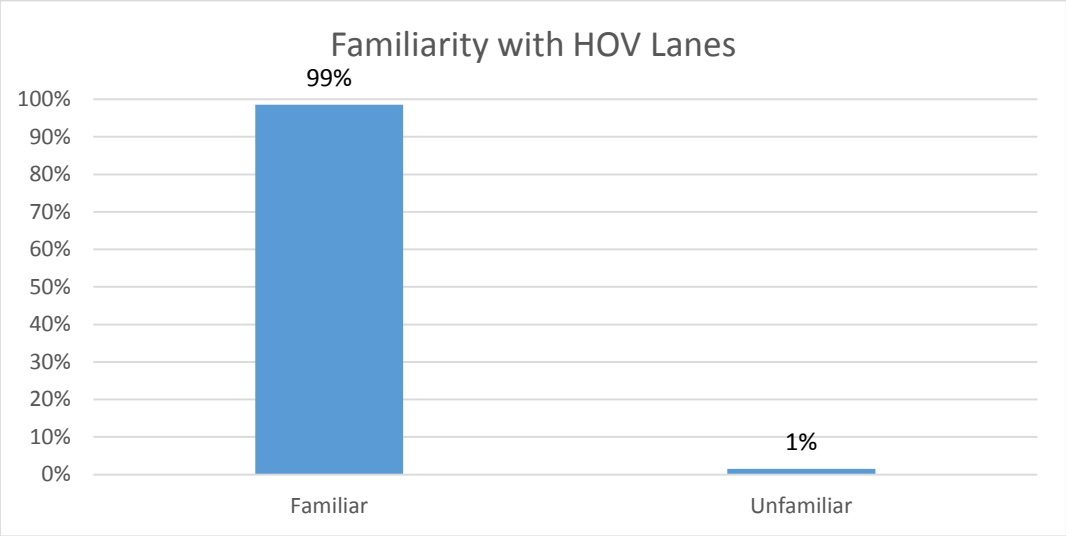


Figure 4: Percent of Respondents Familiar with HOV Lanes

Figure 5 shows the percentage of respondent's HOV lane use frequency. Those who took the survey were asked to pick how often they used the HOV lane. A total of 1951 people responded to this general attitude question. The majority of respondents (850, 44%) said they took the HOV lane very rarely. 25% (497) of people who answered this question said that they use the HOV lane two to three times a month, followed by 15% (294) who said they used the HOV 2-3 times a week. 8% (164) of people that responded said they used the HOV lane daily. Only 7% (146) of respondents said that they never use the HOV lane.

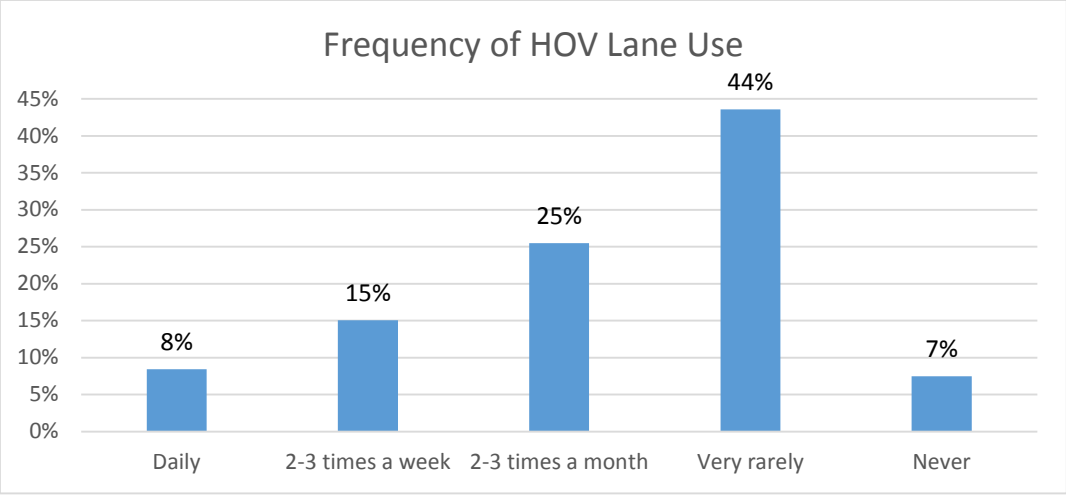


Figure 5: Percentage of Respondent Frequency of HOV Lane Use

If a respondent said that they had used an HOV lane before, the follow-up question, “On a scale of 1 to 10, how satisfied were you with the HOV lane?” was asked. Figure 6 shows the results of this question, where 0 represents “Not Satisfied” and 10 represents “Very Satisfied”. A total of 1142 responses were gathered for this particular question. Generally, the majority of people (398, 23%) responded with a 10, showing that they were very satisfied. In fact, 81% (1415) of people who used the HOV lane reported that they had a satisfaction level of 6 or higher. Although this question is an indication of how much people like using the HOV lane, it is important to note that the rating is subjective depending on the respondent. For example, reasons behind a particular individual’s choice when rating a 7 may be different than a different individual who also chose to rate their satisfaction a 7.

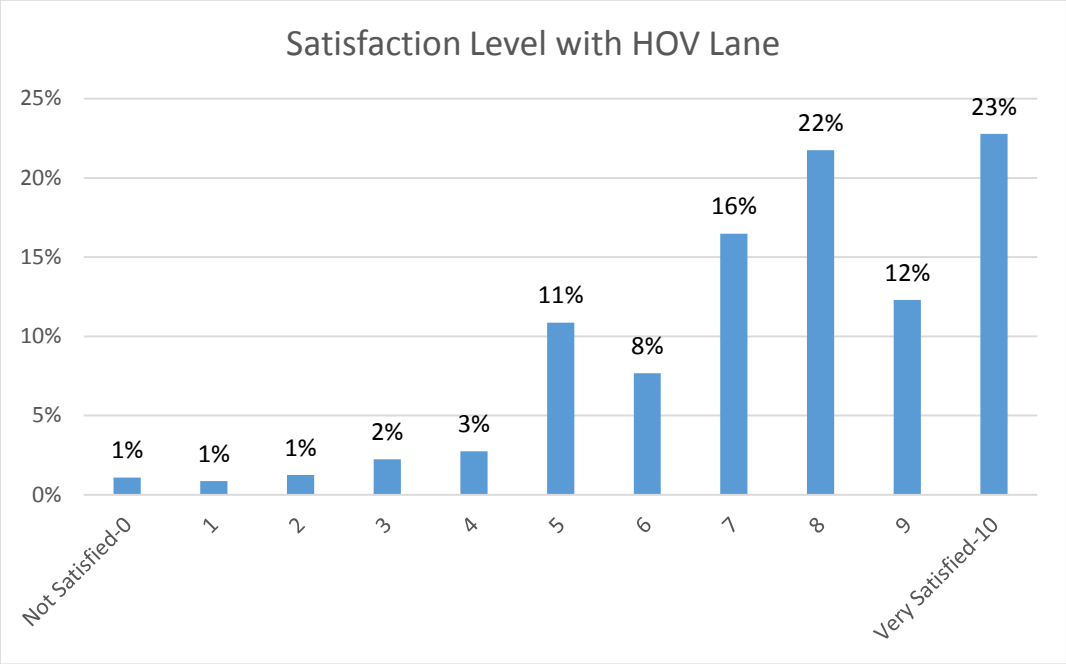


Figure 6: Percentage of Respondents Satisfied with the HOV Lane

Figure 7 shows the percentage of respondents familiar with HOT lanes. A total of 1956 people answered this question. Unexpectedly, 47% (927) reported that they in fact know what an HOT lane is. The percentage seems rather high considering there are currently no HOT lanes in existence in Arizona. However, because Arizona is known for being a melting pot from people all over the country due to its temperate climate, it is possible that respondents could be from other parts of the country where toll lanes, and in particular HOT lanes, are present. Additionally, respondents could have traveled to a particular area of the country where HOT lanes are prevalent. 53% (1029) of people reported that they do not know what an HOT lanes is.

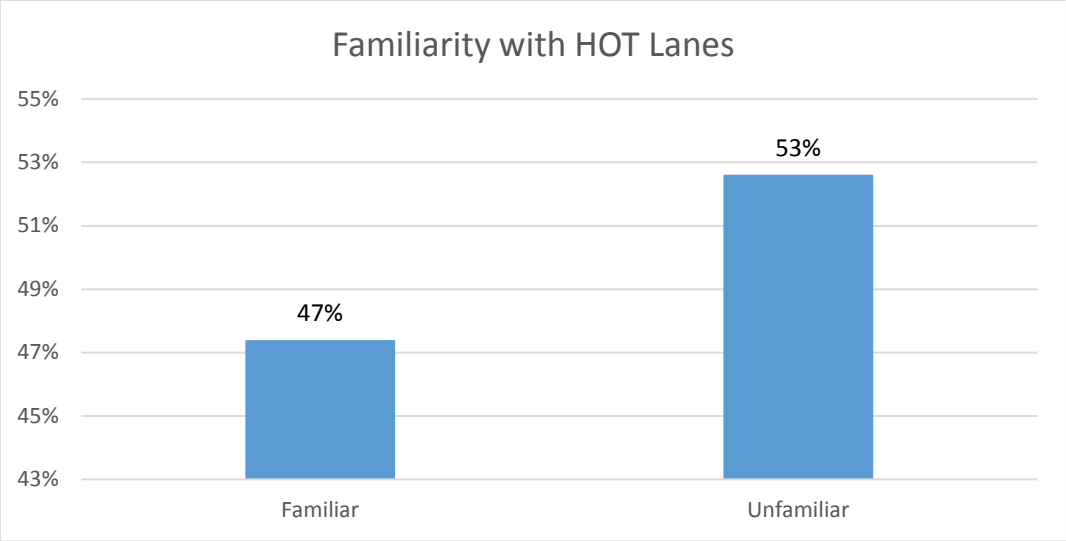


Figure 7: Percentage of Respondents Familiar with HOT Lanes

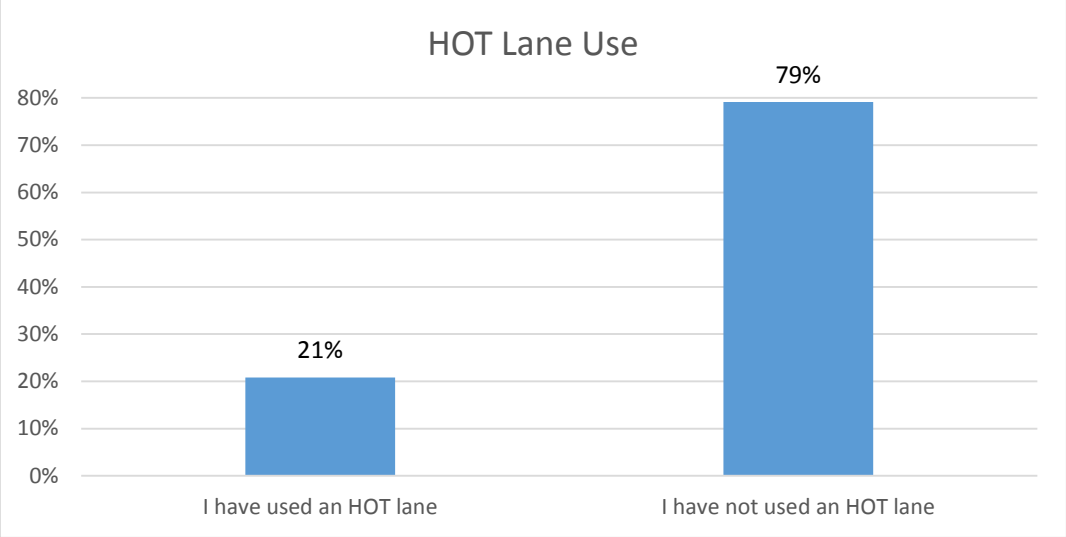


Figure 8: Percentage of Respondents Who Have/Have Not Used an HOT Lane

Figure 8 shows the data from the question "Have you ever used an HOT lane?" In all, 1947 people answered this question. Although 47% (Figure 6) of respondents were familiar with the concept of an HOT lane, only 21% (406) had actually used an HOT lane. 79% (1541) of respondents said they have never used an HOT lane. Again, this is expected because there are no HOT lanes in Arizona.

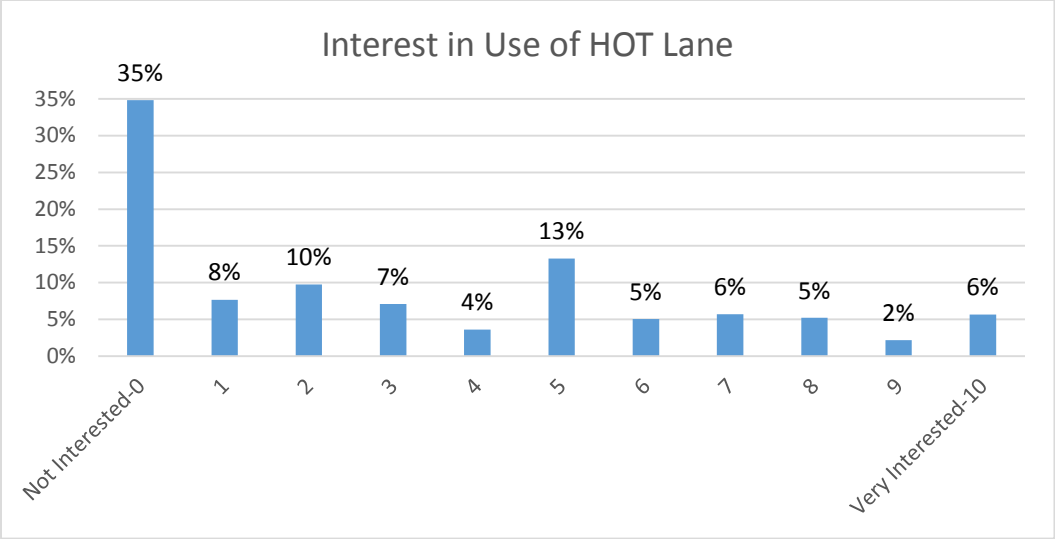


Figure 9: Percentage of Respondents Interested in Using an HOT Lane

Figure 9 shows the percentage of people who are interested in using an HOT lane, on a scale of 0 to 10, where 0 is "Not Interested" and 10 is "Very Interested". Overall, 1942 people responded to this question, where the majority at 35% (676) said they were not interested in using the HOT lane. As explained in the introduction, people generally have a negative bias towards paying for their travel using personal vehicles. Therefore, the large amount of people who were not interested in the HOT lane is not a surprise. 6% (110) of people said they were very interested in using the HOT lane. 13% (258) responded with a 5, somewhere in the middle between "Not Interested" and "Very Interested", depending on the interpretation of the respondent.

After the TTR concept was explained to respondents, they were asked to report their interest in the TTR option before and after they went through the different stated preference scenarios. Figure 10 shows a histogram of the interest levels before and after the scenarios. A total of 1938 respondents answered the "Before Scenarios" interest question and 1802 answered the "After Scenarios" question. Before the scenarios, 25% (477) of respondents showed no interest in the TRR, 15% (288) showed somewhat of an interest with an answer of 5, and 9% (172) respondents were very interested. After the scenarios, 29% (524) of respondents showed no interest in the TTR, 12% (216) showed somewhat of an interest with an answer of 5, and 5% (82) of respondents were very interested in the TTR. Before the scenarios, 66% (1274) of people gave an interest level of 0 to 5 and 34% (664) of people responded with an interest level from 6 to 10. After the scenarios, 72% (1296) of people responded with an interest level of 0 to 5 and 28% (506) responded with an interest level from 6 to 10. Although it appears as though there was a significant drop in interest in the TTR after the scenarios, it was only a change of 6%.

The observed general negative attitude towards HOT and TTR is in line with expectation. However, comparing Figure 9 and Figure 10, it can be observed that users are less negative about TTR than HOT (lower percentage of rating"0" and higher percentage of rates "6" to "8"), supporting the idea that TTR could make HOT facilities more appealing.

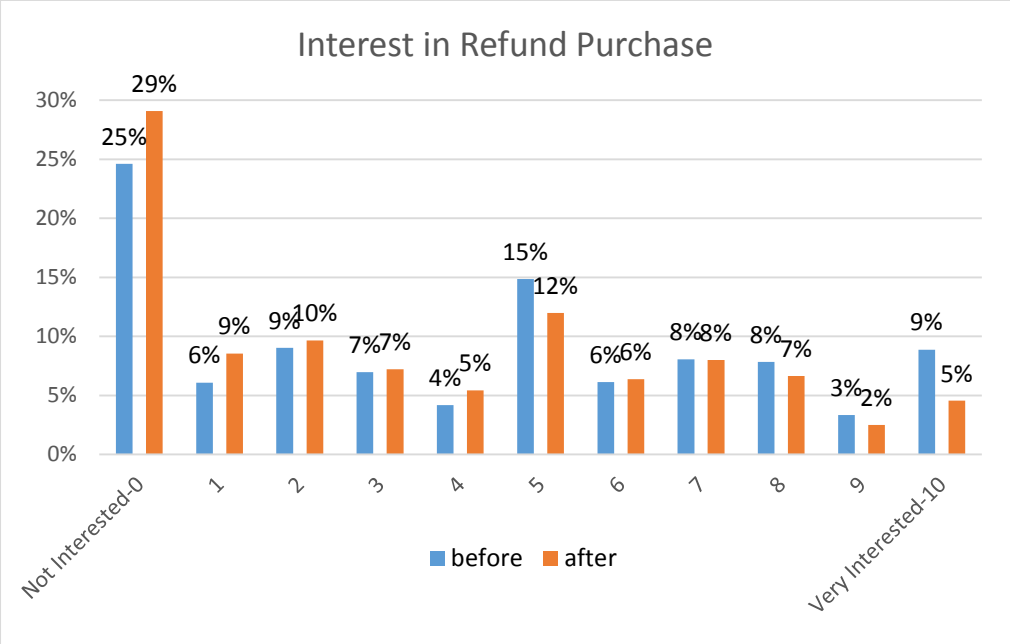


Figure 10: Percentage of Respondents Interested in the Refund Option

4.3 CROSS-TABULATION ANALYSIS OF GENERAL ATTITUDE

To further understand travelers' general attitude and examine potential influence factors, cross-tabulation analysis is performed. The cross-tabulation tables of general attitude data and demographic data can be found in Appendix C. In these tables, the ratings were scaled from 0-10 to 0-6 to gain a better understanding of the data. This scaling binned ratings "1" and "2" together, "3" and "4" together, "6" and "7" together, and "8" and "9" together.

4.3.1 Age

Table 5 shows age vs. HOV use. 34% of those aged 18-24 very rarely used the HOV lane, which is the lowest compared to the rest of the age groups. Only about 6% of those aged 25-30 used the HOV lane daily. 15% of people aged 31-40 used the HOV lane two to three times a week.

As can be seen from Table 6, the majority of people under the age of 41 did not know what an HOT lane was, this includes 65% of 18-24 year olds, 58% of 25-30 year olds, and 55% of 31-50 year olds. On the contrary, 58% of 41-54 year olds and 64% of those 55 and older knew what an HOT lane was.

While the TTR interest of other age groups remained mostly constant before and after the stated preference scenarios, the percent of those aged 18-24 that responded that their interest rate in the TTR option was a "4" in the binned scale ("6" or "7" in the original 0-10 Likert scale) increased slightly after the scenarios were presented from 18% to 21% (Table 7 and Table 8).

4.3.2 Gender

11% of males use the HOV lane daily compared to 7% of females (Table 9). In general, men appeared to use the HOV slightly more often than women. Additionally, a greater proportion of men (55%) are aware of HOT lanes compared to women (43%) (Table 10). However, although more men know what an HOT lane is, slightly more women (21%) have used an HOT lane before than men (19%) (Table 11). Men are also slightly more interested in the TTR than women (Table 12 and Table 13).

4.3.3 Education

The majority of people who had a Master's degree or higher knew what an HOT lane was Table 14), including 54% of master degree holders, 55% of doctoral degrees, and 59% of those who had some other type of professional degree like a MD or JD.

There were no significant trend in HOV knowledge, HOV Use, HOT interest, or TTR interest with respect to education level.

4.3.4 Income

Table 15 shows that the majority of those whose household income was under $50,000 per year did not know what an HOT lane was at 65%. On the other hand, the majority of people who said their income was over $50,000 per year were familiar with HOT lanes.

Only 10% of people whose income was between $20,000 and $30,000 per year said they have used an HOT lane. However, 21% of people whose income was between $75,000 and $100,000 and 29% of people whose incomes were greater than $150,000 had used an HOT lane before (Table 16).

Additionally, those who had a higher income showed more interest in using an HOT lane. For example, Table 17 shows that 18% of those whose income was greater than $150,000 responded that their interest rate in HOT lanes was either a "6" or a "7" on a 0-10 Likert scale (a "4" in Table 17), while only 10% of those whose income was $20,000 to $30,000 reported the same interest. This may show a correlation between income level and HOT interest and use in future modeling.

In terms of TTR interest, certain income groups tended to be more interested in the TTR option (Table 18). 19% of those whose income was $40,000 to $50,000 reported after the stated-preference scenarios were presented that their interest in the TTR option was either a "6" or a "7" (on a 0-10 Likert scale, a "4" in Table 18), the highest among all income groups. Furthermore, 18% of those whose income was over $150,000 also responded with a "6" or "7". On the other hand, among those who reported income between $20,000 and $30,000, only 10% of people responded with a "6" or "7".

There is no significant trend in HOV knowledge or HOV use with respect to household income.

4.3.5 Number of People in the Household

As expected, those who had more people living in their household were inclined to use the HOV lane more frequently than those who had less (Table 19). 24% of people who had four members in their household and 22% of people who had five or more members in their household responded that they use the HOV lane two to three times a week. Only 9% of people who lived by themselves and 12% of people who lived with one other person responded similar usage frequency. Moreover, 51% of those who lived by themselves responded that they use the HOV lane very rarely while 32% of those with five or more people in their household said the same.

There is no significant trend in the household and HOV knowledge, HOT knowledge, HOT interest or TTR interest with respect to the number of people in a household.

4.3.6 Interest in TTR Before and After Scenarios

Table 20 is a cross-tabulation of the interest before the TTR compared to the interest after the TTR. Again, the ratings were scaled from 0-10 to 0-6 to gain a better understanding of the data. This scaling binned ratings “1” and “2” together, “3” and “4” together, “6” and “7” together, and “8” and “9” together. 1791 Respondents answered both questions in the survey regarding interest before and after the scenarios. About 42% of people’s interest in the TTR did not change after completing the scenarios.

Of the people who responded that they were uninterested (rated “0”) in the TTR option before the scenarios (447 people), 80% remained uninterested after the scenarios were presented to them. 12% increased their interest to that of a “1” or a “2” value. Of the people who responded that they were very interested (rated “10”) in the survey, only 36% of them remained as interested as before. 10% of these people’s interest dropped to “0” after completing the scenarios.

18% of people increased their interest from a “5” to that of a “6” or “7” after the scenarios. Similarly, 16% of people increased their TTR interest from a “6” or “7” to an “8” or “9”.

27% of people who responded with an interest of an “8” or “9” before the scenarios, then reported with a “6” or “7” after. Likewise, 27% of people who responded with an interest of a “3” or “4” pre-scenarios, responded with a “1” or “2” after the scenarios.

The general trend shows that the majority of people increased or decreased their interest in the TTR option slightly, rather than jumping from one extreme, for example a “10” to that of a “0”. However, it appears that slightly more people responded that their interest in the TTR option decreased.

Those who were interested in the HOT lane were generally interested about the same in using the TTR option, as can be seen in Table 21. 65% of people who said they were very interested in HOT lanes said they were also as interested in the TTR option before stated-preference scenarios were presented. Additionally, 29% of people who reported their HOT interest as a “6” or “7” also reported their TTR interest as higher at either an “8” or “9”.

4.4 LAST I-10 TRIP DATA

Besides the check box at the beginning of the tournament to verify the age, the question "Have you taken a trip on the I-10 in the past year?" was the first question in the survey. A total of 2064 respondents answered this question. Of those, 93% (2064) had taken a trip in the past year. Only 7% (149) did not. The strong majority of people who have taken a trip in the past year yields a good sample to interpret the last trip data that follows.

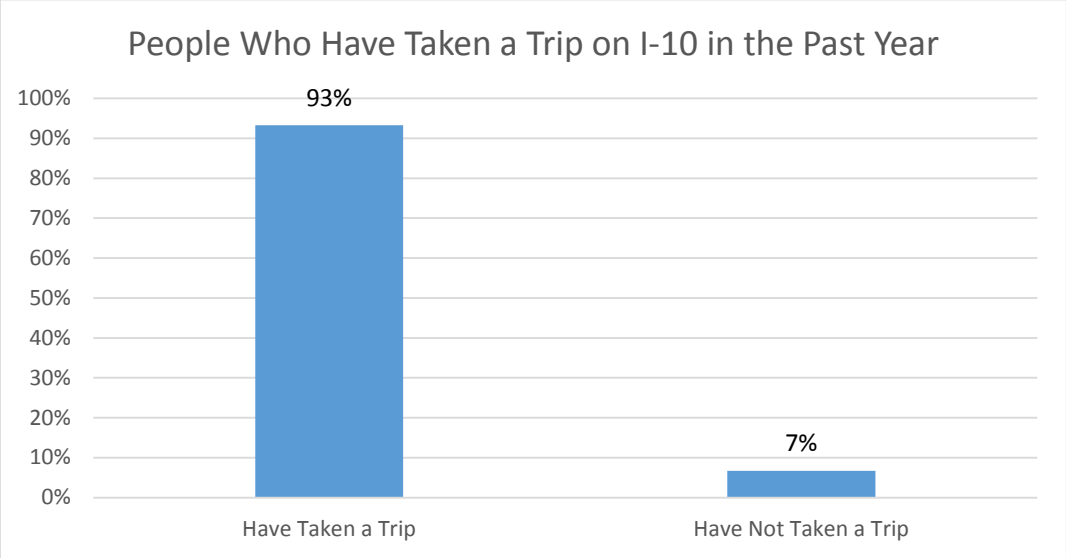


Figure 11: Percent of Respondents Who Have Taken a Trip on the I-10 in the Past Year

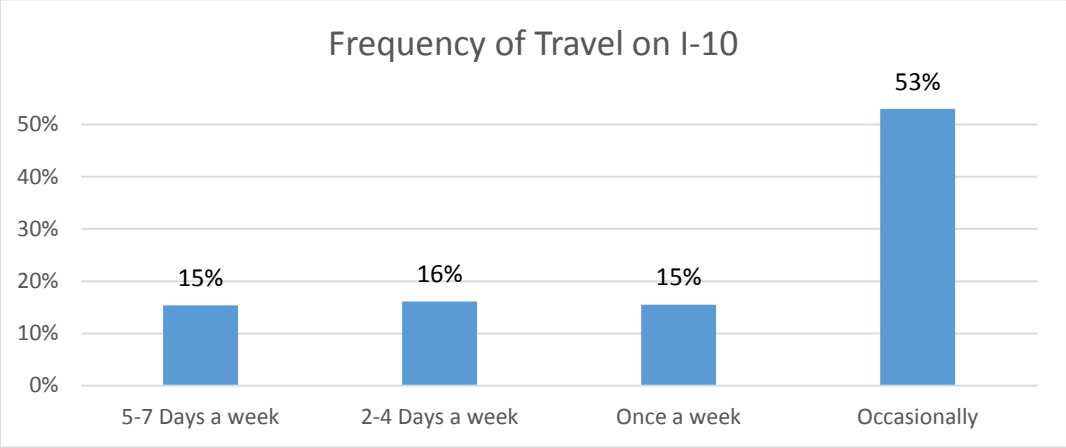


Figure 12: Frequency of Travel on I-10

Version B of the survey contained two branched questions off of the first question in the survey: "How often do you travel the I-10?" (Figure 12) and "What is your primary trip purpose when

using the I-10?" (Figure 13). These questions were given to respondents if they responded with a "Yes" to the first survey question. In total, 1142 responses were gathered for the question regarding frequency of travel. The majority of respondents (605, 53%) occasionally traveled on the I-10. The rest of the responses were split similarly between once a week (177, 15%), 2-4 days a week (184, 16%), and 5-7 days a week (176, 15%). From this data, it can be determined that the majority of respondents do not use the I-10 to commute to and from work.

The second question added to Version B is shown in Figure 13. 1141 people responded. The majority of respondents at 38% (433) said when they used the I-10, they generally traveled for recreational, social, or entertainment purposes. The second highest percentage of respondents at 19% (219) reported that they used to I-10 to commute to and from work, followed by shopping or personal errands at 17% (193), to attend an educational institute at 9% (105), work related 9% (101), and other at 8% (90). In terms of the HOT with TTR concept, commuters are the targeted audience. Because almost 20% of those who answered the survey are commuters on the I-10, it is an ideal freeway in Arizona to test the TTR concept or HOT lanes in general.

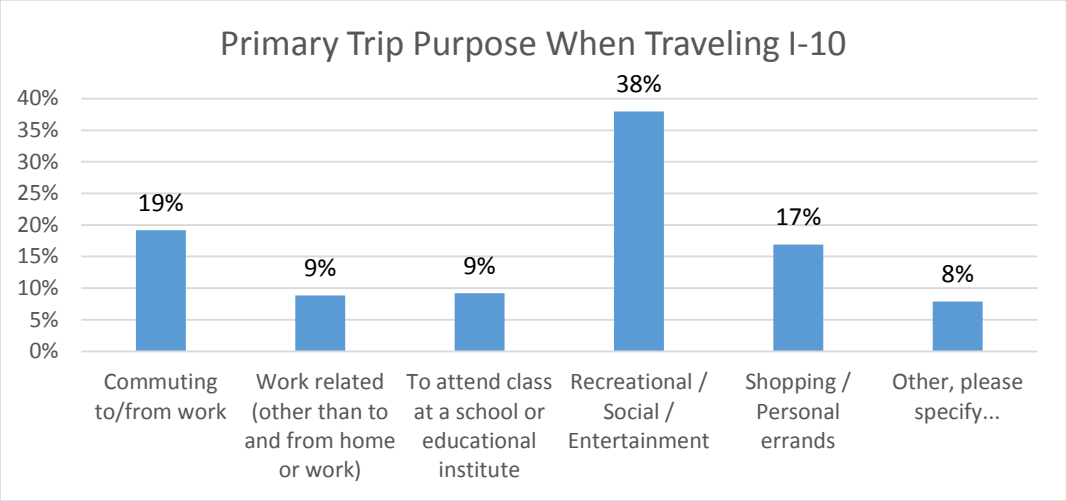


Figure 13: Percentage of Respondents Primary Trip Purpose When Traveling the I-10

Table 4 in Appendix shows information obtained about the respondents' last trips on the I-10.

The first category in Table 4 is the purpose of the last trip on the I-10, not to be confused with the primary trip purpose when traveling on the I-10 shown in Figure 13. However, the results are similar to Figure 13. 40% (739) of people traveled for social or recreational purposes. Second was commuting at 20% (370). This was followed by shopping and personal errands at 11% (208) and work related activities also at 11% (200). Lastly, 9% (157) used the I-10 on their last trip to attend class or an educational institute and 9% (170) of respondents' trip purposes were for other reasons.

For when the last trip occurred, the majority of respondents (1092, 59%) said that their trip occurred during a weekday, Monday through Friday. 41% (756) of respondents said their trip occurred on the weekend. However, because the weekend is only two days out of seven, the

number of respondents whose last trip happened on a weekend is relatively high, as could be seen if this data were weighted. Additionally, the data could be skewed depending on what day of the week a respondent happened to access the survey.

For HOV lane use during the last trip, a surprising number of people did happen to use the HOV lane. 686 (37%) respondents said they accessed the HOV lane on their last trip. This contradicts previously displayed data (Figure 5) where 44% of respondents said that they very rarely use the HOV lane. 63% (1149) of respondents said they did not use the HOV lane on their last trip.

95% (1771) of respondents said that they used a car, SUV, or pick-up truck to travel on the I-10. Motorcycles (14, 1%), Buses (43, 2%), and other modes (30, 2%) had a small number of respondents who answered.

The majority of people on their last trip were solo-drivers (743, 40%), followed by two people in the vehicle during the trip (552, 30%). The frequency of number of people who took the trip dropped with the increase in the number of people reported in the car, as seen in three people (256, 14%), four people (142, 8%), five people (74, 4%), and greater than five people (86, 5%).

5.0 CONCLUSIONS

The TTR provides an additional incentive for drivers to pay to use priced MLs. Through the TTR, drivers can have their freeway travel time "insured". Insuring their travel time allows the HOT user to receive a refund if they do not arrive to their destination within the travel time savings displayed. Perceived benefits of the TTR include additional funding for state departments of transportation, an increase in underutilized HOV/HOT lanes, reducing overall congestion of highways, and changing negative attitudes toward priced MLs by adding additional insurances.

The HOT Refund Survey, a four section survey with stated preference scenarios, gained an understanding of how people react and respond to priced MLs and the TTR in a place where HOT lanes currently do not exist. Survey takers answered questions regarding their last trip on the I-10, ML opinions, hypothetical TTR scenarios, and demographics. In all, over 2,200 responses were gathered through the ASU PTS newsletters, Arizona ITE and ITS Arizona email lists, and social media platforms. Furthermore, the opportunity to win a prize in a random drawing incentivized people to complete the survey.

It is observed from our exploratory data analysis that there is a general negative attitude towards HOT and TTR. This is in line with expectation. However, comparing Figure 9 to Figure 10, it can be seen that users are less negative about TTR than HOT (lower percentage of rating"0" and higher percentage of rates "6" to "8"), supporting the idea that TTR could make HOT facilities more appealing.

Results showed that the majority of survey takers came from the ASU PTS email list, which were able to reach a broad range of ASU students, faulty, and staff. Therefore, the un-weighted results of the survey were skewed towards this demographic. For example, most of the responses came from people between the ages of 18 and 24 years, around the general age as the average college student. Additionally, because most survey takers were in Arizona, the majority (53%) of respondents were unfamiliar with HOT lanes and their practices. This may have had an impact on the interest in the TTR, although it was not apparent when looking at the cross-tabulation analysis between HOT knowledge and TTR interest. The concept of the HOT lane and "paying to travel" itself may have turned people away from the TTR option. Therefore, similar surveys implementing new HOT pricing strategies should be deployed where current HOT practices are already in existence. Moreover, introducing the TTR concept to current HOT users may also receive valuable feedback in its future deployment.

The stated preference scenarios were able to gather interest in the TTR in some respondents, as well as drop interest in the TTR option in others. Reasons for the drop in interest could vary. Some respondents may have found the cost too high for their willingness to pay. Further investigation into the scenario data will reveal more information on the relationship between the factors, levels, choices made, and HOT/TTR opinions. For example, a potential reason for the decrease of interest in the TTR could be due to higher rates presented in scenarios. It is important

to note that although stated preference scenarios give insight on people's decision, limitations exist in that people may not actually do what they will say (Patil et al., 2011).

Future analysis will include weighting the data to account for sample bias, an exploration of the stated preference scenarios to determine what factors were significant in peoples' choices, and a predictive model of those choices based on demographic information.

Another interesting aspect of any follow-up studies is the incorporation of psychological and economic theories to possibly model HOT and TTR usage. For example, Hogarth and Kunreuther (1989) found in their study on why consumer purchase insurance is that consumers' decisions will be affected by "(a) attitudes toward risk as expressed in their utility functions and (b) the means of their probability distributions over the probability of experiencing the known loss". A more in-depth review of the literature on this topic will be performed in our future studies to establish plausible model structures.

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APPENDIX A

SURVEY SCRIPT

PAGE 1: PRE-SURVEY

Refund Option for Toll Lanes
Conducted by Researchers at Arizona State University

Thank you for your interest in partaking in the following survey. This survey, conducted by graduate student, Melissa Archer, under the direction of Dr. Lou at Arizona State University, is about freeway managed lanes. Freeway managed lanes are designated lanes on a freeway where demand and available capacity are controlled. Participation in this survey includes answering questions regarding your reactions to various traffic scenarios. Your responses will be used in research to understand community reactions to freeway managed lanes and pricing strategies.

The survey is voluntary. The questions are optional and your responses will remain anonymous. You may opt out at any time. The results may be used in reports, presentations, or publications in aggregate form. If you choose to complete the survey, your total time commitment will be approximately 10 to 15 minutes.

Upon completion of the survey, you have the opportunity to enter your information into raffle prizes drawings as an appreciation of your participation. Two Kindles and a Fitbit will be given away following the closing of the survey on December 1st. If you complete the survey by October 31st, you will be entered into an additional drawing for a second Fitbit. Winners of the drawings will be notified by November 15, 2014 for the first selection and by December 15, 2014 for the overall selection. The raffle prizes are purchased and given away by Arizona State University. Amazon and Fitbit are not sponsors of this survey.

If you have any questions concerning the research study, please contact the research team at: melissa.archer@asu.edu or yingyan.lou@asu.edu. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.
* = Required
* By checking the box below, you verify that you are 18 years or older and give consent to contribute your answers to research purposes.

☐Yes, I certify that I am 18 years or older and agree to participate in this research.

PAGE 2: I-10 TRIP OR NO I-10 TRIP

In Arizona, Interstate 10 (or I-10) is a major east-west highway that connects Phoenix to the major cities of Los Angeles, CA and Tucson, AZ.

Image taken from http://www.I10phoenix.com/

* Have you taken a trip that included the I-10 in the Phoenix-metro area within the past year?

- O Yes
- O No

How often do you travel the I-10?

- O☐5-7 Days a week
- O☐2-4 Days a week
- O☐Once a week
- O☐Occasionally

What is your primary trip purpose when using the I-10?

O☐Commuting to/from work
O☐Work related (other than to and from home or work)
O☐To attend class at a school or educational institute
O☐Recreational / Social / Entertainment
O☐Shopping / Personal errands
O☐Other, please specify... _____

PAGE 3: MOST RECENT I-10 TRIP

Last Trip on I-10
The next questions refer to the last trip you took on the I-10 in the Phoenix area, as indicated on the previous page. If you do not remember the answer to a question asked, you may skip it.

What was the purpose of the trip?

O☐Commuting to/from work
O☐Work related (other than to and from home or work)
O☐To attend class at a school or educational institute
O☐Recreational / Social / Entertainment
O☐Shopping / Personal errands
O☐Other, please specify... _____

What day of the week did your last trip take place?

O☐Weekday
O☐Weekend

Approximately what time did you start your trip?
Time _____

What is the zip code of where the trip started?
_____

What is the zip code of where the trip ended?
_____

Did you use the high occupancy vehicle (HOV) lane during this trip?

O☐Yes
O☐No

What type of vehicle did you use?

- ☐ Passenger car / SUV / Pick-up truck
- ☐ Motorcycle
- ☐ Bus
- ☐ Other, please specify... _____

How many people, other than yourself, were in the vehicle with you?

- ☐ 0
- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ Greater than 4

* Where did you get ON the I-10 on your last trip?

- ◊ An exit east of Loop 202 (Santan Fwy) / Pecos Rd)
- ◊ Loop 202 (Santan Fwy) / Pecos Rd
- ◊ Chandler Blvd
- ◊ Ray Rd
- ◊ Warner Rd
- ◊ Elliot Rd
- ◊ US 60 (Superstition Fwy)
- ◊ Broadway Rd
- ◊ SR 143 (Hohokam Expy)
- ◊ 40th St
- ◊ 32nd St / University Dr
- ◊ 24th St
- ◊ I-17 / US-60 (Maricopa Fwy)
- ◊ Buckeye Rd
- ◊ Jefferson St / Washington St
- ◊ SR 51 (Piestewa Fwy) / Loop 202 (Red Mountain Fwy)
- ◊ 16th St
- ◊ 7th St
- ◊ 7th Ave
- ◊ 19th Ave
- ◊ I-17 (Black Canyon Fwy)
- ◊ 27th Ave
- ◊ 35th Ave
- ◊ 43rd Ave
- ◊ 51st Ave
- ◊ 59th Ave
- ◊ 67th Ave
- ◊ 75th Ave

- ◊ 83rd Ave
- ◊ 91st Ave
- ◊ Loop 101 (Agua Fria Fwy)
- ◊ An exit west of the Loop 101 (Agua Fria Fwy)

* Where did you get OFF the I-10 on your last trip?
- ◊ An exit east of Loop 202 (Santan Fwy) / Pecos Rd)
- ◊ Loop 202 (Santan Fwy) / Pecos Rd
- ◊ Chandler Blvd
- ◊ Ray Rd
- ◊ Warner Rd
- ◊ Elliot Rd
- ◊ US 60 (Superstition Fwy)
- ◊ Broadway Rd
- ◊ SR 143 (Hohokam Expy)
- ◊ 40th St
- ◊ 32nd St / University Dr
- ◊ 24th St
- ◊ I-17 / US-60 (Maricopa Fwy)
- ◊ Buckeye Rd
- ◊ Jefferson St / Washington St
- ◊ SR 51 (Piestewa Fwy) / Loop 202 (Red Mountain Fwy)
- ◊ 16th St
- ◊ 7th St
- ◊ 7th Ave
- ◊ 19th Ave
- ◊ I-17 (Black Canyon Fwy)
- ◊ 27th Ave
- ◊ 35th Ave
- ◊ 43rd Ave
- ◊ 51st Ave
- ◊ 59th Ave
- ◊ 67th Ave
- ◊ 75th Ave
- ◊ 83rd Ave
- ◊ 91st Ave
- ◊ Loop 101 (Agua Fria Fwy)
- ◊ An exit west of the Loop 101 (Agua Fria Fwy)

Estimate your total travel time (in minutes) on the I-10 on your last trip.

_____

PAGE 4: GENERAL PREFERENCE QUESTIONS

* Do you know what a High Occupancy Vehicle (HOV) lane is?

O☐Yes
O☐No

Images taken from http://phoenix.about.com/od/highwaysroads/a/HOV.htm and http://blogs.kcrw.com/shortcuts/soon-solo-drivers-will-be-able-to-drive-in-car-pool-lanes-no-hybrid-required

An HOV lane is a freeway or expressway lane restricted to vehicles with the required occupancy, typically two or more people, during specified peak hours of the day. HOV lanes are a type of freeway managed lane.

How often do you use an HOV lane?

O☐Daily
O☐2-3 times a week
O☐2-3 times a month
O☐Very rarely
O☐Never

How satisfied were you with the HOV lane?

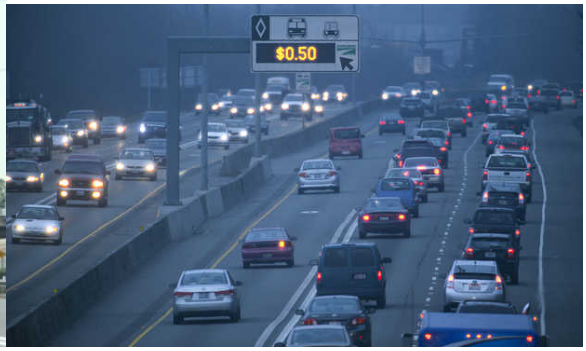
0	1	2	3	4	5
	6	7	8	9	10

Not Satisfied

Very Satisfied

* Do you know what a High Occupancy Toll (HOT) lane is?

O☐Yes
O☐No



Images taken from http://www.mnpass.org/ and
http://www.theolympian.com/2013/10/20/2784942/how-will-we-toll-for-new-roads.html

An HOT lane is a freeway or expressway lane that charges tolls to regulate access while maintaining travel speed and reliability. Typically, HOVs are allowed access to HOT lanes at a discounted rate or free of charge. Like HOV lanes, HOT lanes are also a type of freeway managed lane.

Have you ever used an HOT lane?

O☐Yes
O☐No

How interested are you in using an HOT lane?

0	1	2	3	4	5
	6	7	8	9	10

Not Satisfied Very Satisfied

Some freeways display a time window that allows you to estimate when you will arrive at a specific destination, such as an exiting ramp to another freeway.

An example of a dynamic message sign time window in Oregon. (http://otrec.us/news/entry/report_travel_time_data_lacking_at_key_spots_on_portland_area_freeways)

Imagine an HOT exists that provides similar time window displays as seen above.

Additionally, imagine the HOT lane includes an option to buy a travel time refund (TTR) or "insurance". The TTR allows HOT users to pay an additional cost, or premium, on top of the toll amount to insure their travel time will be within the time window. The TTR will always cost less than the toll amount. If you do not arrive to your exit ramp within the provided time window, the toll amount will be refunded but not the TTR cost.

Assume all technologies required for implementing HOT with a TTR exist.

If there was a refund option, how interested would you be in purchasing it?

0	1	2	3	4	5
	6	7	8	9	10

Not Interested

Very Interested

PAGE 5: STATED PREFERENCE – MOST RECENT TRIP

For the hypothetical scenario below, the HOT lane includes an option to buy a travel time refund (TTR), or “insurance”.

This cost of the TTR, or "insurance", will always be less than the toll. When the TTR is bought and you do not arrive to your exiting ramp within the provided time window, the toll will be refunded but not the TTR amount. Assume all technologies necessary to use the HOT lane with TTR (such as vehicle tag readers) exist.

Refund, travel time refund, and TTR are synonymous in the following examples.

Scenario: You are taking the same **25.5** mile trip from an exit east of Loop 202 (Santan Fwy) / Pecos Rd to an exit west of the Loop 101 (Agua Fria Fwy) on the I-10 freeway. Which option would you choose?

1. **GPL (Total Cost $0.00):** Drive in the general purpose lanes for free. The general purpose lanes appear heavily congested.

2. HOT no refund (Total Cost $1.28): Drive in the HOT lane for **$1.28** and do not purchase a travel time refund. The average travel time can vary between **25** and **31** minutes.

3. HOT with refund (Total Cost $1.59): Drive in the HOT lane for **$1.28** and purchase the travel time refund at **$0.32.** The average travel time can vary anywhere between **25** and **31** minutes.

O☐Option 1: GPL
O☐Option 2: HOT no refund
O☐Option 3: HOT with refund

Part 2: Now imagine the same scenario as in the previous question, however the travel time refund cost is lower. Which option would you choose?

1. GPL (Total Cost $0.00): Drive in the general purpose lanes for free. The general purpose lanes appear heavily congested.

2. HOT no refund (Total Cost $1.28): Drive in the HOT lane for **$1.28** and do not purchase a travel time refund. The average travel time can vary between **25** and **31** minutes.

3. HOT with refund (Total Cost $1.40): Drive in the HOT lane for **$1.28** and purchase the travel time refund at **$0.13.** The average travel time can vary anywhere between **25** and **31** minutes.

O☐Option 1: GPL
O☐Option 2: HOT no refund
O☐Option 3: HOT with refund

PAGE 6: STATED PREFERENCE – SCENARIO 1

For the hypothetical scenario below, the HOT lane includes an option to buy a travel time refund (TTR), or “insurance”.

This cost of the TTR, or "insurance", will always be less than the toll. When the TTR is bought and you do not arrive to your exiting ramp within the provided time window, the toll will be refunded but not the TTR amount. Assume all technologies necessary to use the HOT lane with TTR (such as vehicle tag readers) exist.

Refund, travel time refund, and TTR are synonymous in the following examples.

Scenario 1: You are taking a **10 mile** trip on the I-10 freeway during the **PM** rush hour in the peak direction. Which option would you choose?

1. GPL (Total Cost $0.00): Drive in the general purpose lanes for free. The general purpose lanes appear heavily congested.

2. HOT no refund (Total Cost $2.00): Drive in the HOT lane for **$2.00** and do not purchase a travel time refund. The average travel time can vary between **10** and **12** minutes.

3. HOT with refund (Total Cost $2.50): Drive in the HOT lane for **$2.00** and purchase the travel time refund at **$0.50**. The average travel time can vary anywhere between **10** and **12** minutes.

O☐Option 1: GPL
O☐Option 2: HOT no refund
O☐Option 3: HOT with refund

Scenario 1, Part 2: Now imagine the same scenario as in the previous question, however the travel time refund cost is higher. Which option would you choose?

1. GPL (Total Cost $0.00): Drive in the general purpose lanes for free. The general purpose lanes appear heavily congested.

2. HOT no refund (Total Cost $2.00): Drive in the HOT lane for **$2.00** and do not purchase a travel time refund. The average travel time can vary between **10** and **12** minutes.

3. HOT with refund (Total Cost $3.00): Drive in the HOT lane for **$2.00** and purchase the travel time refund at **$1.00**. The average travel time can vary anywhere between **10** and **12** minutes.

O☐Option 1: GPL
O☐Option 2: HOT no refund
O☐Option 3: HOT with refund

PAGE 7: STATED PREFERENCE – SCENARIO 2

For the hypothetical scenario below, the HOT lane includes an option to buy a travel time refund (TTR), or “insurance”.

This cost of the TTR, or "insurance", will always be less than the toll. When the TTR is bought and you do not arrive to your exiting ramp within the provided time window, the toll will be refunded but not the TTR amount. Assume all technologies necessary to use the HOT lane with TTR (such as vehicle tag readers) exist.

Refund, travel time refund, and TTR are synonymous in the following examples.

Scenario 2: You are taking a **15 mile** trip on the I-10 freeway during the **AM** rush hour in the peak direction. Which option would you choose?

1. GPL (Total Cost $0.00): Drive in the general purpose lanes for free. The average travel time can vary between **17** and **26** minutes.

2. HOT no refund (Total Cost $5.25): Drive in the HOT lane for **$5.25** and do not purchase a travel time refund. The average travel time can vary between **17** and **20** minutes.

3. HOT with refund (Total Cost $6.56): Drive in the HOT lane for **$5.25** and purchase the travel time refund at **$1.31**. The average travel time can vary anywhere between **17** and **20** minutes.

O☐Option 1: GPL
O☐Option 2: HOT no refund
O☐Option 3: HOT with refund

Scenario 2, Part 2: Now imagine the same scenario as in the previous question, however the travel time refund cost is lower. Which option would you choose?

1. GPL (Total Cost $0.00): Drive in the general purpose lanes for free. The average travel time can vary between **17** and **26** minutes.

2. HOT no refund (Total Cost $5.25): Drive in the HOT lane for **$5.25** and do not purchase a travel time refund. The average travel time can vary between **17** and **20** minutes.

3. HOT with refund (Total Cost $5.78): Drive in the HOT lane for **$5.25** and purchase the travel time refund at **$0.53**. The average travel time can vary anywhere between **17** and **20** minutes.

O☐Option 1: GPL
O☐Option 2: HOT no refund
O☐Option 3: HOT with refund

PAGE 8: STATED PREFERENCE – SCENARIO 3

For the hypothetical scenario below, the HOT lane includes an option to buy a travel time refund (TTR), or “insurance”.

This cost of the TTR, or "insurance", will always be less than the toll. When the TTR is bought and you do not arrive to your exiting ramp within the provided time window, the toll will be refunded but not the TTR amount. Assume all technologies necessary to use the HOT lane with TTR (such as vehicle tag readers) exist.

Refund, travel time refund, and TTR are synonymous in the following examples.

Scenario 3: You are taking a **25 mile** trip on the I-10 freeway during the **PM** rush hour in the peak direction. Which option would you choose?

1. GPL (Total Cost $0.00): Drive in the general purpose lanes for free. The average travel time can vary between **31** and **46** minutes.

2. HOT no refund (Total Cost $8.75): Drive in the HOT lane for **$8.75** and do not purchase a travel time refund. The average travel time can vary between **25** and **30** minutes.

3. HOT with refund (Total Cost $10.94): Drive in the HOT lane for **$8.75** and purchase

the travel time refund at **$2.19**. The average travel time can vary anywhere between **25** and **30** minutes.

O☐Option 1: GPL
O☐Option 2: HOT no refund
O☐Option 3: HOT with refund

Scenario 3, Part 2: Now imagine the same scenario as in the previous question, however the travel time refund cost is lower. Which option would you choose?

1. GPL (Total Cost $0.00): Drive in the general purpose lanes for free. The average travel time can vary between **31** and **46** minutes.

2. HOT no refund (Total Cost $8.75): Drive in the HOT lane for **$8.75** and do not purchase a travel time refund. The average travel time can vary between **25** and **30** minutes.

3. HOT with refund (Total Cost $9.63): Drive in the HOT lane for **$8.75** and purchase the travel time refund at **$0.88**. The average travel time can vary anywhere between **25** and **30** minutes.

O☐Option 1: GPL
O☐Option 2: HOT no refund
O☐Option 3: HOT with refund

PAGE 9: GENERAL PREFERENCE – AFTER SCENARIOS

Now that you have completed all of the scenarios, if there was a refund option, how interested would you be in purchasing it?

0	1	2	3	4	5
	6	7	8	9	10

Not Interested

Very Interested

Under what circumstances are you most likely to use the following:
HOT without TTR _____
HOT with TTR _____

If you have any additional comments, please add them below.
_____

PAGE 10: DEMOGRAPHICS

You may skip any question you prefer not to answer.

What is your age?
_____

What is your gender?

- ☐ Male
- ☐ Female
- ☐ Prefer Not to Answer

What is your ethnicity?

- ☐ White / Caucasian
- ☐ Spanish / Hispanic / Latino
- ☐ Black / African American
- ☐ Asian
- ☐ Pacific Islander
- ☐ Native American
- ☐ Other
- ☐ Prefer Not to Answer

What is the highest level of education you have completed?

- ☐ Some High School or Less
- ☐ High School Diploma / GED
- ☐ Some College
- ☐ 4-Year College Degree (Bachelor's)
- ☐ Master's Degree
- ☐ Doctoral Degree
- ☐ Professional Degree (MD, JD)

Including yourself, how many people are in your household?

_____

How many vehicles are in your household?

_____

Estimate your gross annual household income in 2013.

- ☐ Under $20,000
- ☐ $20,000 - $30,000
- ☐ $30,000 - $40,000
- ☐ $40,000 - $50,000
- ☐ $50,000 - $75,000
- ☐ $75,000 - $100,000
- ☐ $100,000 - $150,000
- ☐ $150,000 or more
- ☐ MPrefer Not to Answer

APPENDIX B

SIMPLE DESCRIPTIVE TABLES

Table 2: Person Demographic Data

Gender		
	Count	Percent
Male	591	34%
Female	1118	64%
Total	**1709**	
Age		
18-24	402	25%
25-30	270	17%
31-40	361	22%
41-54	366	22%
55 and Older	231	14%
Total	**1630**	
Ethnicity		
White/Caucasian	1248	72%
Spanish/Hispanic/Latino	167	10%
Black/African American	41	2%
Asian	117	7%
Pacific Islander	6	0%
Native American	23	1%
Other	37	2%
Prefer Not to Answer	92	5%
Total	**1731**	
Education		
Some High School or Less	1	0%
High School Diploma/GED	49	3%
Some College	477	27%
4-Year College Degree (Bachelor's)	535	31%
Master's Degree	487	28%
Doctoral Degree	154	9%
Professional Degree (MD,JD)	32	2%
Total	**1735**	

Table 3: Household Demographic Data

Total Number of People in household		
	Count	Percent
1	302	18%
2	554	33%
3	306	18%
4	307	19%
5 or More	187	11%
Total	**1656**	
Total Number of Vehicles in Household		
0	22	1%
1	397	24%
2	722	43%
3	352	21%
4	133	8%
5 or More	56	3%
Total	**1682**	
Estimated Gross Yearly Household Income		
Under $30,000	173	12%
$30,000-$50,000	255	17%
$50,000-$75,000	224	15%
$75,000-$100,000	273	18%
$100,000-$150,000	265	18%
$150,000 or More	155	10%
Prefer Not to Answer	159	11%
Total	**1504**	

Table 4: Last I-10 Trip Data

Purpose of Last I-10 Trip		
	Count	Percent
Commuting to/from work	370	20%
Work related (other than to and from home or work)	200	11%
To attend class at a school or educational institute	157	9%
Recreational/Social/Entertainment	739	40%
Shopping/Personal errands	208	11%
Other	170	9%
Total	**1844**	
Day of the Week Last I-10 Trip Occurred		
Weekday	1092	59%
Weekend	756	41%
Total	**1848**	
HOV Use During Last I-10 Trip		
Used HOV Lane	686	37%
Did Not Use HOV Lane	1149	63%
Total	**1835**	
Travel Mode		
Passenger car/SUV/Pick-up truck	1771	95%
Motorcycle	14	1%
Bus	43	2%
Other	30	2%
Total	**1858**	
Vehicle Occupancy		
1	743	40%
2	552	30%
3	256	14%
4	142	8%
5	74	4%
Greater than 5	86	5%
Total	**1853**	

APPENDIX C

CROSS-TABULATION TABLES

AGE

Table 5: Age vs. HOV Use

			How often do you use an HOV lane?					
			Daily	2-3 times a week	2-3 times a month	Very rarely	Never	Total
Age	Missing	Count	25	35	75	164	25	324
		% within Age	7.70%	10.80%	23.10%	50.60%	7.70%	100.00%
		% within HOV Use	15.20%	11.90%	15.10%	19.30%	17.10%	16.60%
		% of Total	1.30%	1.80%	3.80%	8.40%	1.30%	16.60%
	18-24	Count	37	95	99	138	33	402
		% within Age	9.20%	23.60%	24.60%	34.30%	8.20%	100.00%
		% within HOV Use	22.60%	32.30%	19.90%	16.20%	22.60%	20.60%
		% of Total	1.90%	4.90%	5.10%	7.10%	1.70%	20.60%
	25-30	Count	16	35	58	133	27	269
		% within Age	5.90%	13.00%	21.60%	49.40%	10.00%	100.00%
		% within HOV Use	9.80%	11.90%	11.70%	15.60%	18.50%	13.80%
		% of Total	0.80%	1.80%	3.00%	6.80%	1.40%	13.80%
	31-40	Count	33	55	109	145	19	361
		% within Age	9.10%	15.20%	30.20%	40.20%	5.30%	100.00%
		% within HOV Use	20.10%	18.70%	21.90%	17.10%	13.00%	18.50%
		% of Total	1.70%	2.80%	5.60%	7.40%	1.00%	18.50%
	41-54	Count	35	51	100	161	17	364
		% within Age	9.60%	14.00%	27.50%	44.20%	4.70%	100.00%
		% within HOV Use	21.30%	17.30%	20.10%	18.90%	11.60%	18.70%
		% of Total	1.80%	2.60%	5.10%	8.30%	0.90%	18.70%

	55 and Over	Count	18	23	56	109	25	231
		% within Age	7.80%	10.00%	24.20%	47.20%	10.80%	100.00%
		% within HOV Use	11.00%	7.80%	11.30%	12.80%	17.10%	11.80%
		% of Total	0.90%	1.20%	2.90%	5.60%	1.30%	11.80%
	Total	Count	164	294	497	850	146	1951
		% within Age	8.40%	15.10%	25.50%	43.60%	7.50%	100.00%
		% within HOV Use	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	8.40%	15.10%	25.50%	43.60%	7.50%	100.00%

Table 6: Age vs. Knowledge of HOT Lanes

Do you know what a High Occupancy Toll (HOT) lane is?					
			Yes	No	Total
Age	Missing	Count	151	175	326
		% within Age	46.30%	53.70%	100.00%
		% within HOT Knowledge	16.30%	17.00%	16.70%
		% of Total	7.70%	8.90%	16.70%
	18-24	Count	140	262	402
		% within Age	34.80%	65.20%	100.00%
		% within HOT Knowledge	15.10%	25.50%	20.60%
		% of Total	7.20%	13.40%	20.60%
	25-30	Count	114	156	270
		% within Age	42.20%	57.80%	100.00%
		% within HOT Knowledge	12.30%	15.20%	13.80%
		% of Total	5.80%	8.00%	13.80%
	31-40	Count	164	197	361
		% within Age	45.40%	54.60%	100.00%
		% within HOT Knowledge	17.70%	19.10%	18.50%
		% of Total	8.40%	10.10%	18.50%
	41-54	Count	210	156	366
		% within Age	57.40%	42.60%	100.00%
		% within HOT Knowledge	22.70%	15.20%	18.70%
		% of Total	10.70%	8.00%	18.70%
	55 and Over	Count	148	83	231
		% within Age	64.10%	35.90%	100.00%
		% within HOT Knowledge	16.00%	8.10%	11.80%
		% of Total	7.60%	4.20%	11.80%
	Total	Count	927	1029	1956
		% within Age	47.40%	52.60%	100.00%
		% within HOT Knowledge	100.00%	100.00%	100.00%
		% of Total	47.40%	52.60%	100.00%

Table 7: Age vs. Interest in TTR Before Scenarios

			Interest in TTR Before Scenarios							
			0	1	2	3	4	5	6	Total
Age	18-24	Count	86	42	48	52	75	55	42	400
		% within Age	21.50%	10.50%	12.00%	13.00%	18.80%	13.80%	10.50%	100.00%
		% within TTR Before	18.00%	14.30%	22.20%	18.10%	27.30%	25.30%	24.40%	20.60%
		% of Total	4.40%	2.20%	2.50%	2.70%	3.90%	2.80%	2.20%	20.60%
	25-30	Count	64	43	25	38	41	28	27	266
		% within Age	24.10%	16.20%	9.40%	14.30%	15.40%	10.50%	10.20%	100.00%
		% within TTR Before	13.40%	14.70%	11.60%	13.20%	14.90%	12.90%	15.70%	13.70%
		% of Total	3.30%	2.20%	1.30%	2.00%	2.10%	1.40%	1.40%	13.70%
	31-40	Count	75	58	37	56	50	44	38	358
		% within Age	20.90%	16.20%	10.30%	15.60%	14.00%	12.30%	10.60%	100.00%
		% within TTR Before	15.70%	19.80%	17.10%	19.40%	18.20%	20.30%	22.10%	18.50%
		% of Total	3.90%	3.00%	1.90%	2.90%	2.60%	2.30%	2.00%	18.50%
	41-54	Count	100	67	35	58	39	37	28	364
		% within Age	27.50%	18.40%	9.60%	15.90%	10.70%	10.20%	7.70%	100.00%
		% within TTR Before	21.00%	22.90%	16.20%	20.10%	14.20%	17.10%	16.30%	18.80%
		% of Total	5.20%	3.50%	1.80%	3.00%	2.00%	1.90%	1.40%	18.80%
	55 and Over	Count	71	34	26	38	23	23	16	231
		% within Age	30.70%	14.70%	11.30%	16.50%	10.00%	10.00%	6.90%	100.00%
		% within TTR Before	14.90%	11.60%	12.00%	13.20%	8.40%	10.60%	9.30%	11.90%

		% of Total	3.70%	1.80%	1.30%	2.00%	1.20%	1.20%	0.80%	11.90%
	Total	Count	477	293	216	288	275	217	172	1938
		% within Age	24.60%	15.10%	11.10%	14.90%	14.20%	11.20%	8.90%	100.00%
		% within TTR Before	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	24.60%	15.10%	11.10%	14.90%	14.20%	11.20%	8.90%	100.00%

Table 8: Age vs. Interest in TTR After Scenarios

			Interest in TTR After Scenarios							
			0	1	2	3	4	5	6	Total
Age	18-24	Count	89	57	55	54	84	37	24	400
		% within Age	22.30%	14.20%	13.80%	13.50%	21.00%	9.30%	6.00%	100.00%
		% within TTR After	17.00%	17.40%	24.10%	25.00%	32.40%	22.40%	29.30%	22.20%
		% of Total	4.90%	3.20%	3.10%	3.00%	4.70%	2.10%	1.30%	22.20%
	25-30	Count	69	47	41	28	41	32	10	268
		% within Age	25.70%	17.50%	15.30%	10.40%	15.30%	11.90%	3.70%	100.00%
		% within TTR After	13.20%	14.30%	18.00%	13.00%	15.80%	19.40%	12.20%	14.90%
		% of Total	3.80%	2.60%	2.30%	1.60%	2.30%	1.80%	0.60%	14.90%
	31-40	Count	101	77	37	42	50	34	17	358
		% within Age	28.20%	21.50%	10.30%	11.70%	14.00%	9.50%	4.70%	100.00%
		% within TTR After	19.30%	23.50%	16.20%	19.40%	19.30%	20.60%	20.70%	19.90%
		% of Total	5.60%	4.30%	2.10%	2.30%	2.80%	1.90%	0.90%	19.90%
	41-54	Count	121	60	51	44	40	29	16	361
		% within Age	33.50%	16.60%	14.10%	12.20%	11.10%	8.00%	4.40%	100.00%
		% within TTR After	23.10%	18.30%	22.40%	20.40%	15.40%	17.60%	19.50%	20.00%
		% of Total	6.70%	3.30%	2.80%	2.40%	2.20%	1.60%	0.90%	20.00%
	55 and Over	Count	81	48	27	25	22	17	9	229
		% within Age	35.40%	21.00%	11.80%	10.90%	9.60%	7.40%	3.90%	100.00%
		% within TTR After	15.50%	14.60%	11.80%	11.60%	8.50%	10.30%	11.00%	12.70%
		% of Total	4.50%	2.70%	1.50%	1.40%	1.20%	0.90%	0.50%	12.70%
	Total	Count	524	328	228	216	259	165	82	1802
		% within Age	29.10%	18.20%	12.70%	12.00%	14.40%	9.20%	4.60%	100.00%
		% within TTR After	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	29.10%	18.20%	12.70%	12.00%	14.40%	9.20%	4.60%	100.00%

GENDER

Table 9: Gender vs. HOV Lane Use

Gender vs. HOV Lane Use								
			How often do you use an HOV lane?					
			Daily	2-3 times a week	2-3 times a month	Very rarely	Never	Total
Gender	Male	Count	65	99	152	230	44	590
		% within Gender	11.00%	16.80%	25.80%	39.00%	7.50%	100.00%
		% within HOV Use	44.50%	36.70%	33.90%	30.70%	33.60%	33.80%
		% of Total	3.70%	5.70%	8.70%	13.20%	2.50%	33.80%
	Female	Count	78	163	287	505	83	1116
		% within Gender	7.00%	14.60%	25.70%	45.30%	7.40%	100.00%
		% within HOV Use	53.40%	60.40%	63.90%	67.40%	63.40%	64.00%
		% of Total	4.50%	9.30%	16.40%	28.90%	4.80%	64.00%
	Prefer Not to Answer	Count	3	8	10	14	4	39
		% within Gender	7.70%	20.50%	25.60%	35.90%	10.30%	100.00%
		% within HOV Use	2.10%	3.00%	2.20%	1.90%	3.10%	2.20%
		% of Total	0.20%	0.50%	0.60%	0.80%	0.20%	2.20%
Total	Total	Count	146	270	449	749	131	1745
		% within Gender	8.40%	15.50%	25.70%	42.90%	7.50%	100.00%
		% within HOV Use	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	8.40%	15.50%	25.70%	42.90%	7.50%	100.00%

Table 10: Gender vs. HOT Knowledge

Gender vs. HOT Knowledge					
			Do you know what a High Occupancy Toll (HOT) lane is?		
			Yes	No	Total
Gender	Male	Count	327	264	591
		% within Gender	55.30%	44.70%	100.00%
		% within HOT Knowledge	39.50%	28.70%	33.80%
		% of Total	18.70%	15.10%	33.80%
	Female	Count	475	643	1118
		% within Gender	42.50%	57.50%	100.00%
		% within HOT Knowledge	57.40%	69.80%	64.00%
		% of Total	27.20%	36.80%	64.00%
	Prefer Not to Answer	Count	25	14	39
		% within Gender	64.10%	35.90%	100.00%
		% within HOT Knowledge	3.00%	1.50%	2.20%
		% of Total	1.40%	0.80%	2.20%
	Total	Count	827	921	1748
		% within Gender	47.30%	52.70%	100.00%
		% within HOT Knowledge	100.00%	100.00%	100.00%
		% of Total	47.30%	52.70%	100.00%

Table 11: Gender vs. HOT Lane Use

Gender vs. HOT Lane Use					
			Have you ever used an HOT lane?		
			Yes	No	Total
Gender	Male	Count	110	478	588
		% within Gender	18.70%	81.30%	100.00%
		% within HOT Use	30.60%	34.60%	33.80%
		% of Total	6.30%	27.50%	33.80%
	Female	Count	237	877	1114
		% within Gender	21.30%	78.70%	100.00%
		% within HOT Use	65.80%	63.50%	64.00%
		% of Total	13.60%	50.40%	64.00%
	Prefer Not to Answer	Count	13	26	39
		% within Gender	33.30%	66.70%	100.00%
		% within HOT Use	3.60%	1.90%	2.20%
		% of Total	0.70%	1.50%	2.20%
	Total	Count	360	1381	1741
		% within Gender	20.70%	79.30%	100.00%
		% within HOT Use	100.00%	100.00%	100.00%
		% of Total	20.70%	79.30%	100.00%

Table 12: Gender vs. TTR Interest Before Scenarios

Gender vs. TTR Interest Before Scenarios										
			TTR Interest Before Scenarios							
			0	1	2	3	4	5	6	Total
Gender	Male	Count	156	84	50	62	91	77	66	586
		% within Gender	26.60%	14.30%	8.50%	10.60%	15.50%	13.10%	11.30%	100.00%
		% within TTR Before	36.30%	31.90%	26.20%	24.40%	37.80%	39.10%	41.00%	33.70%
		% of Total	9.00%	4.80%	2.90%	3.60%	5.20%	4.40%	3.80%	33.70%
	Female	Count	259	174	137	183	148	118	93	1112
		% within Gender	23.30%	15.60%	12.30%	16.50%	13.30%	10.60%	8.40%	100.00%
		% within TTR Before	60.20%	66.20%	71.70%	72.00%	61.40%	59.90%	57.80%	64.00%
		% of Total	14.90%	10.00%	7.90%	10.50%	8.50%	6.80%	5.40%	64.00%
	Prefer Not to Answer	Count	15	5	4	9	2	2	2	39
		% within Gender	38.50%	12.80%	10.30%	23.10%	5.10%	5.10%	5.10%	100.00%
		% within TTR Before	3.50%	1.90%	2.10%	3.50%	0.80%	1.00%	1.20%	2.20%
		% of Total	0.90%	0.30%	0.20%	0.50%	0.10%	0.10%	0.10%	2.20%
	Total	Count	430	263	191	254	241	197	161	1737
		% within Gender	24.80%	15.10%	11.00%	14.60%	13.90%	11.30%	9.30%	100.00%
		% within TTR Before	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	24.80%	15.10%	11.00%	14.60%	13.90%	11.30%	9.30%	100.00%

Table 13: Gender vs. TRR Interest After Scenarios

Gender vs. TTR Interest After Scenarios										
			TTR Interest After Scenarios							
			0	1	2	3	4	5	6	Total
Gender	Male	Count	186	84	61	63	88	72	31	585
		% within Gender	31.80%	14.40%	10.40%	10.80%	15.00%	12.30%	5.30%	100.00%
		% within TTR After	37.10%	26.90%	27.70%	30.00%	35.50%	44.20%	38.80%	33.70%
		% of Total	10.70%	4.80%	3.50%	3.60%	5.10%	4.20%	1.80%	33.70%
	Female	Count	301	216	158	143	157	88	47	1110
		% within Gender	27.10%	19.50%	14.20%	12.90%	14.10%	7.90%	4.20%	100.00%
		% within TTR After	60.10%	69.20%	71.80%	68.10%	63.30%	54.00%	58.80%	64.00%
		% of Total	17.40%	12.50%	9.10%	8.20%	9.10%	5.10%	2.70%	64.00%
	Prefer Not to Answer	Count	14	12	1	4	3	3	2	39
		% within Gender	35.90%	30.80%	2.60%	10.30%	7.70%	7.70%	5.10%	100.00%
		% within TTR After	2.80%	3.80%	0.50%	1.90%	1.20%	1.80%	2.50%	2.20%
		% of Total	0.80%	0.70%	0.10%	0.20%	0.20%	0.20%	0.10%	2.20%
	Total	Count	501	312	220	210	248	163	80	1734
		% within Gender	28.90%	18.00%	12.70%	12.10%	14.30%	9.40%	4.60%	100.00%
		% within TTR After	100.00 %	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	28.90%	18.00%	12.70%	12.10%	14.30%	9.40%	4.60%	100.00%

EDUCATION

Table 14: Education vs. HOT Knowledge

Education vs. HOT Knowledge					
			Do you know what a High Occupancy Toll (HOT) lane is?		
			Yes	No	Total
Education Completed	Some High School or Less	Count	1	0	1
		% of Education	100.00%	0.00%	100.00%
		% of HOT Knowledge	0.10%	0.00%	0.10%
		% of Total	0.10%	0.00%	0.10%
	High School Diploma / GED	Count	20	29	49
		% of Education	40.80%	59.20%	100.00%
		% of HOT Knowledge	2.40%	3.20%	2.80%
		% of Total	1.20%	1.70%	2.80%
	Some College	Count	183	294	477
		% of Education	38.40%	61.60%	100.00%
		% of HOT Knowledge	22.30%	32.20%	27.50%
		% of Total	10.50%	16.90%	27.50%
	4-Year College Degree (Bachelor's)	Count	253	282	535
		% of Education	47.30%	52.70%	100.00%
		% of HOT Knowledge	30.80%	30.90%	30.80%
		% of Total	14.60%	16.30%	30.80%
	Master's Degree	Count	261	226	487
		% of Education	53.60%	46.40%	100.00%
		% of HOT Knowledge	31.80%	24.80%	28.10%
		% of Total	15.00%	13.00%	28.10%
	Doctoral Degree	Count	85	69	154
		% of Education	55.20%	44.80%	100.00%
		% of HOT Knowledge	10.30%	7.60%	8.90%
		% of Total	4.90%	4.00%	8.90%
	Professional Degree (MD, JD)	Count	19	13	32
		% of Education	59.40%	40.60%	100.00%
		% of HOT Knowledge	2.30%	1.40%	1.80%
		% of Total	1.10%	0.70%	1.80%
	Total	Count	822	913	1735
		% of Education	47.40%	52.60%	100.00%
		% of HOT Knowledge	100.00%	100.00%	100.00%
		% of Total	47.40%	52.60%	100.00%

INCOME

Table 15: Household Income vs. HOT Knowledge

			Do you know what a High Occupancy Toll (HOT) lane is?		
			Yes	No	Total
Household Income	Under $20,000	Count	35	64	99
		% of Income	35.40%	64.60%	100.00%
		% of HOT Knowledge	4.80%	8.20%	6.60%
		% of Total	2.30%	4.30%	6.60%
	$20,000 - $30,000	Count	26	48	74
		% of Income	35.10%	64.90%	100.00%
		% of HOT Knowledge	3.60%	6.10%	4.90%
		% of Total	1.70%	3.20%	4.90%
	$30,000 - $40,000	Count	44	81	125
		% of Income	35.20%	64.80%	100.00%
		% of HOT Knowledge	6.10%	10.40%	8.30%
		% of Total	2.90%	5.40%	8.30%
	$40,000 - $50,000	Count	45	85	130
		% of Income	34.60%	65.40%	100.00%
		% of HOT Knowledge	6.20%	10.90%	8.60%
		% of Total	3.00%	5.70%	8.60%
	$50,000 - $75,000	Count	117	107	224
		% of Income	52.20%	47.80%	100.00%
		% of HOT Knowledge	16.20%	13.70%	14.90%
		% of Total	7.80%	7.10%	14.90%
	$75,000 - $100,000	Count	137	136	273
		% of Income	50.20%	49.80%	100.00%
		% of HOT Knowledge	18.90%	17.40%	18.20%
		% of Total	9.10%	9.00%	18.20%
	$100,000 - $150,000	Count	131	134	265
		% of Income	49.40%	50.60%	100.00%
		% of HOT Knowledge	18.10%	17.20%	17.60%
		% of Total	8.70%	8.90%	17.60%
	$150,000 or more	Count	99	56	155
		% of Income	63.90%	36.10%	100.00%
		% of HOT Knowledge	13.70%	7.20%	10.30%
		% of Total	6.60%	3.70%	10.30%
	Prefer Not to Answer	Count	89	70	159
		% of Income	56.00%	44.00%	100.00%
		% of HOT Knowledge	12.30%	9.00%	10.60%
		% of Total	5.90%	4.70%	10.60%

	Total	Count	723	781	1504
		% of Income	48.10%	51.90%	100.00%
		% of HOT Knowledge	100.00%	100.00%	100.00%
		% of Total	48.10%	51.90%	100.00%

Table 16: Household Income vs. HOT Lane Use

Income vs. HOT Lane Use					
			Yes	No	Total
Household Income	Under $20,000	Count	19	77	96
		% of Income	19.80%	80.20%	100.00%
		% of HOT Use	6.20%	6.50%	6.40%
		% of Total	1.30%	5.10%	6.40%
	$20,000 - $30,000	Count	7	67	74
		% of Income	9.50%	90.50%	100.00%
		% of HOT Use	2.30%	5.60%	4.90%
		% of Total	0.50%	4.50%	4.90%
	$30,000 - $40,000	Count	27	97	124
		% of Income	21.80%	78.20%	100.00%
		% of HOT Use	8.80%	8.10%	8.30%
		% of Total	1.80%	6.50%	8.30%
	$40,000 - $50,000	Count	21	109	130
		% of Income	16.20%	83.80%	100.00%
		% of HOT Use	6.90%	9.20%	8.70%
		% of Total	1.40%	7.30%	8.70%
	$50,000 - $75,000	Count	49	174	223
		% of Income	22.00%	78.00%	100.00%
		% of HOT Use	16.00%	14.60%	14.90%
		% of Total	3.30%	11.60%	14.90%
	$75,000 - $100,000	Count	56	216	272
		% of Income	20.60%	79.40%	100.00%
		% of HOT Use	18.30%	18.10%	18.20%
		% of Total	3.70%	14.40%	18.20%
	$100,000 - $150,000	Count	52	213	265
		% of Income	19.60%	80.40%	100.00%
		% of HOT Use	17.00%	17.90%	17.70%
		% of Total	3.50%	14.20%	17.70%
	$150,000 or more	Count	45	110	155
		% of Income	29.00%	71.00%	100.00%
		% of HOT Use	14.70%	9.20%	10.40%
		% of Total	3.00%	7.30%	10.40%
	Prefer Not to Answer	Count	30	128	158
		% of Income	19.00%	81.00%	100.00%
		% of HOT Use	9.80%	10.70%	10.60%
		% of Total	2.00%	8.60%	10.60%

	Total	Count	306	1191	1497
		% of Income	20.40%	79.60%	100.00%
		% of HOT Use	100.00%	100.00%	100.00%
		% of Total	20.40%	79.60%	100.00%

Table 17: Household Income vs. HOT Interest

Income vs. HOT Interest										
			HOT Interest							Total
			0	1	2	3	4	5	6	
Household Income	Under $20,000	Count	34	18	10	14	9	9	4	98
		% of Income	34.70%	18.40%	10.20%	14.30%	9.20%	9.20%	4.10%	100.00%
		% of HOT Interest	6.60%	7.10%	6.40%	6.80%	5.90%	7.70%	4.20%	6.60%
		% of Total	2.30%	1.20%	0.70%	0.90%	0.60%	0.60%	0.30%	6.60%
	$20,000 - $30,000	Count	30	10	10	7	10	4	2	73
		% of Income	41.10%	13.70%	13.70%	9.60%	13.70%	5.50%	2.70%	100.00%
		% of HOT Interest	5.80%	4.00%	6.40%	3.40%	6.60%	3.40%	2.10%	4.90%
		% of Total	2.00%	0.70%	0.70%	0.50%	0.70%	0.30%	0.10%	4.90%
	$30,000 - $40,000	Count	50	16	16	14	12	9	5	122
		% of Income	41.00%	13.10%	13.10%	11.50%	9.80%	7.40%	4.10%	100.00%
		% of HOT Interest	9.70%	6.30%	10.30%	6.80%	7.90%	7.70%	5.20%	8.20%
		% of Total	3.40%	1.10%	1.10%	0.90%	0.80%	0.60%	0.30%	8.20%
	$40,000 - $50,000	Count	34	26	13	24	16	10	7	130
		% of Income	26.20%	20.00%	10.00%	18.50%	12.30%	7.70%	5.40%	100.00%
		% of HOT Interest	6.60%	10.30%	8.30%	11.70%	10.50%	8.50%	7.30%	8.70%
		% of Total	2.30%	1.70%	0.90%	1.60%	1.10%	0.70%	0.50%	8.70%
	$50,000 - $75,000	Count	79	38	29	30	15	17	14	222
		% of Income	35.60%	17.10%	13.10%	13.50%	6.80%	7.70%	6.30%	100.00%
		% of HOT Interest	15.40%	15.10%	18.60%	14.60%	9.90%	14.50%	14.60%	14.90%
		% of Total	5.30%	2.50%	1.90%	2.00%	1.00%	1.10%	0.90%	14.90%

	$75,000 - $100,000	Count	89	54	26	42	23	18	21	273
		% of Income	32.60%	19.80%	9.50%	15.40%	8.40%	6.60%	7.70%	100.00%
		% of HOT Interest	17.30%	21.40%	16.70%	20.40%	15.10%	15.40%	21.90%	18.30%
		% of Total	6.00%	3.60%	1.70%	2.80%	1.50%	1.20%	1.40%	18.30%
	$100,000 - $150,000	Count	86	51	28	31	24	24	19	263
		% of Income	32.70%	19.40%	10.60%	11.80%	9.10%	9.10%	7.20%	100.00%
		% of HOT Interest	16.80%	20.20%	17.90%	15.00%	15.80%	20.50%	19.80%	17.60%
		% of Total	5.80%	3.40%	1.90%	2.10%	1.60%	1.60%	1.30%	17.60%
	$150,000 or more	Count	43	19	9	17	27	22	18	155
		% of Income	27.70%	12.30%	5.80%	11.00%	17.40%	14.20%	11.60%	100.00%
		% of HOT Interest	8.40%	7.50%	5.80%	8.30%	17.80%	18.80%	18.80%	10.40%
		% of Total	2.90%	1.30%	0.60%	1.10%	1.80%	1.50%	1.20%	10.40%
	Prefer Not to Answer	Count	68	20	15	27	16	4	6	156
		% of Income	43.60%	12.80%	9.60%	17.30%	10.30%	2.60%	3.80%	100.00%
		% of HOT Interest	13.30%	7.90%	9.60%	13.10%	10.50%	3.40%	6.30%	10.50%
		% of Total	4.60%	1.30%	1.00%	1.80%	1.10%	0.30%	0.40%	10.50%
	Total	Count	513	252	156	206	152	117	96	1492
		% of Income	34.40%	16.90%	10.50%	13.80%	10.20%	7.80%	6.40%	100.00%
		% of HOT Interest	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	34.40%	16.90%	10.50%	13.80%	10.20%	7.80%	6.40%	100.00%

Table 18: Household Income vs. TTR Interest After Scenarios

Income vs. TTR Interest After Scenarios										
			TTR Interest After Scenarios							
			0	1	2	3	4	5	6	Total
Household Income	Under $20,000	Count	21	11	17	13	15	15	7	99
		% of Income	21.20%	11.10%	17.20%	13.10%	15.20%	15.20%	7.10%	100.00%
		% of TTR Interest After	4.90%	4.10%	8.90%	7.50%	7.00%	10.60%	9.00%	6.60%
		% of Total	1.40%	0.70%	1.10%	0.90%	1.00%	1.00%	0.50%	6.60%
	$20,000 - $30,000	Count	16	12	12	10	7	11	6	74
		% of Income	21.60%	16.20%	16.20%	13.50%	9.50%	14.90%	8.10%	100.00%
		% of TTR Interest After	3.70%	4.50%	6.30%	5.80%	3.30%	7.80%	7.70%	4.90%
		% of Total	1.10%	0.80%	0.80%	0.70%	0.50%	0.70%	0.40%	4.90%
	$30,000 - $40,000	Count	35	25	13	17	17	12	5	124
		% of Income	28.20%	20.20%	10.50%	13.70%	13.70%	9.70%	4.00%	100.00%
		% of TTR Interest After	8.10%	9.40%	6.80%	9.80%	8.00%	8.50%	6.40%	8.30%
		% of Total	2.30%	1.70%	0.90%	1.10%	1.10%	0.80%	0.30%	8.30%
	$40,000 - $50,000	Count	31	27	20	10	24	11	6	129
		% of Income	24.00%	20.90%	15.50%	7.80%	18.60%	8.50%	4.70%	100.00%
		% of TTR Interest After	7.20%	10.10%	10.50%	5.80%	11.30%	7.80%	7.70%	8.60%
		% of Total	2.10%	1.80%	1.30%	0.70%	1.60%	0.70%	0.40%	8.60%

$50,000 - $75,000	Count	80	42	22	19	28	23	9	223
	% of Income	35.90%	18.80%	9.90%	8.50%	12.60%	10.30%	4.00%	100.00%
	% of TTR Interest After	18.50%	15.70%	11.50%	11.00%	13.10%	16.30%	11.50%	14.90%
	% of Total	5.40%	2.80%	1.50%	1.30%	1.90%	1.50%	0.60%	14.90%
$75,000 - $100,000	Count	74	49	36	40	35	22	14	270
	% of Income	27.40%	18.10%	13.30%	14.80%	13.00%	8.10%	5.20%	100.00%
	% of TTR Interest After	17.10%	18.40%	18.80%	23.10%	16.40%	15.60%	17.90%	18.10%
	% of Total	4.90%	3.30%	2.40%	2.70%	2.30%	1.50%	0.90%	18.10%
$100,000 - $150,000	Count	82	53	29	30	31	24	15	264
	% of Income	31.10%	20.10%	11.00%	11.40%	11.70%	9.10%	5.70%	100.00%
	% of TTR Interest After	19.00%	19.90%	15.20%	17.30%	14.60%	17.00%	19.20%	17.70%
	% of Total	5.50%	3.50%	1.90%	2.00%	2.10%	1.60%	1.00%	17.70%
$150,000 or more	Count	38	22	20	20	27	15	12	154
	% of Income	24.70%	14.30%	13.00%	13.00%	17.50%	9.70%	7.80%	100.00%
	% of TTR Interest After	8.80%	8.20%	10.50%	11.60%	12.70%	10.60%	15.40%	10.30%
	% of Total	2.50%	1.50%	1.30%	1.30%	1.80%	1.00%	0.80%	10.30%
Prefer Not to Answer	Count	55	26	22	14	29	8	4	158
	% of Income	34.80%	16.50%	13.90%	8.90%	18.40%	5.10%	2.50%	100.00%
	% of TTR Interest After	12.70%	9.70%	11.50%	8.10%	13.60%	5.70%	5.10%	10.60%
	% of Total	3.70%	1.70%	1.50%	0.90%	1.90%	0.50%	0.30%	10.60%

	Total	Count	432	267	191	173	213	141	78	1495
		% of Income	28.90%	17.90%	12.80%	11.60%	14.20%	9.40%	5.20%	100.00%
		% of TTR Interest								
		After	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	28.90%	17.90%	12.80%	11.60%	14.20%	9.40%	5.20%	100.00%

NUMBER OF PEOPLE IN THE HOUSEHOLD

Table 19: Number of People in the Household vs. HOV Use

Number of People in the Household vs. HOV Use								
			How often do you use an HOV lane?					
			Daily	2-3 times a week	2-3 times a month	Very rarely	Never	Total
Number of People in the Household	1	Count	22	28	58	154	39	301
		% of People in HH	7.30%	9.30%	19.30%	51.20%	13.00%	100.00%
		% of HOV Use	13.40%	9.50%	11.70%	18.10%	26.70%	15.40%
		% of Total	1.10%	1.40%	3.00%	7.90%	2.00%	15.40%
	2	Count	46	67	133	271	36	553
		% of People in HH	8.30%	12.10%	24.10%	49.00%	6.50%	100.00%
		% of HOV Use	28.00%	22.80%	26.80%	31.90%	24.70%	28.30%
		% of Total	2.40%	3.40%	6.80%	13.90%	1.80%	28.30%
	3	Count	29	50	96	115	15	305
		% of People in HH	9.50%	16.40%	31.50%	37.70%	4.90%	100.00%
		% of HOV Use	17.70%	17.00%	19.30%	13.50%	10.30%	15.60%
		% of Total	1.50%	2.60%	4.90%	5.90%	0.80%	15.60%
	4	Count	25	74	82	111	15	307
		% of People in HH	8.10%	24.10%	26.70%	36.20%	4.90%	100.00%
		% of HOV Use	15.20%	25.20%	16.50%	13.10%	10.30%	15.70%
		% of Total	1.30%	3.80%	4.20%	5.70%	0.80%	15.70%
	5 or More	Count	16	41	56	60	14	187
		% of People in HH	8.60%	21.90%	29.90%	32.10%	7.50%	100.00%
		% of HOV Use	9.80%	13.90%	11.30%	7.10%	9.60%	9.60%
		% of Total	0.80%	2.10%	2.90%	3.10%	0.70%	9.60%

	Missing	Count	26	34	72	139	27	298
		% of People in HH	8.70%	11.40%	24.20%	46.60%	9.10%	100.00%
		% of HOV Use	15.90%	11.60%	14.50%	16.40%	18.50%	15.30%
		% of Total	1.30%	1.70%	3.70%	7.10%	1.40%	15.30%
	Total	Count	164	294	497	850	146	1951
		% of People in HH	8.40%	15.10%	25.50%	43.60%	7.50%	100.00%
		% of HOV Use	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	8.40%	15.10%	25.50%	43.60%	7.50%	100.00%

INTEREST IN TTR

Table 20: Interest in TTR Before vs. Interest in TTR After

TTR Interest Before Scenarios vs. TTR Interest After Scenarios										
			TTR Interest After Scenarios							
			0	1	2	3	4	5	6	Total
TTR Interst Before Scenarios	0	Count	355	51	19	12	6	3	1	447
		% within TTR Before	79.40%	11.40%	4.30%	2.70%	1.30%	0.70%	0.20%	100.00%
		% within TTR After	68.70%	15.60%	8.40%	5.60%	2.30%	1.80%	1.20%	25.00%
		% of Total	19.80%	2.80%	1.10%	0.70%	0.30%	0.20%	0.10%	25.00%
	1	Count	51	136	44	21	12	5	1	270
		% within TTR Before	18.90%	50.40%	16.30%	7.80%	4.40%	1.90%	0.40%	100.00%
		% within TTR After	9.90%	41.60%	19.40%	9.70%	4.60%	3.00%	1.20%	15.10%
		% of Total	2.80%	7.60%	2.50%	1.20%	0.70%	0.30%	0.10%	15.10%
	2	Count	28	51	67	27	18	4	0	195
		% within TTR Before	14.40%	26.20%	34.40%	13.80%	9.20%	2.10%	0.00%	100.00%
		% within TTR After	5.40%	15.60%	29.50%	12.50%	6.90%	2.40%	0.00%	10.90%
		% of Total	1.60%	2.80%	3.70%	1.50%	1.00%	0.20%	0.00%	10.90%
	3	Count	38	42	39	78	47	15	2	261
		% within TTR Before	14.60%	16.10%	14.90%	29.90%	18.00%	5.70%	0.80%	100.00%
		% within TTR After	7.40%	12.80%	17.20%	36.10%	18.10%	9.10%	2.50%	14.60%
		% of Total	2.10%	2.30%	2.20%	4.40%	2.60%	0.80%	0.10%	14.60%
	4	Count	20	26	29	36	93	42	7	253
		% within TTR Before	7.90%	10.30%	11.50%	14.20%	36.80%	16.60%	2.80%	100.00%
		% within TTR After	3.90%	8.00%	12.80%	16.70%	35.90%	25.60%	8.60%	14.10%
		% of Total	1.10%	1.50%	1.60%	2.00%	5.20%	2.30%	0.40%	14.10%

	5	Count	9	12	23	24	54	69	11	202
		% within TTR Before	4.50%	5.90%	11.40%	11.90%	26.70%	34.20%	5.40%	100.00%
		% within TTR After	1.70%	3.70%	10.10%	11.10%	20.80%	42.10%	13.60%	11.30%
		% of Total	0.50%	0.70%	1.30%	1.30%	3.00%	3.90%	0.60%	11.30%
	6	Count	16	9	6	18	29	26	59	163
		% within TTR Before	9.80%	5.50%	3.70%	11.00%	17.80%	16.00%	36.20%	100.00%
		% within TTR After	3.10%	2.80%	2.60%	8.30%	11.20%	15.90%	72.80%	9.10%
		% of Total	0.90%	0.50%	0.30%	1.00%	1.60%	1.50%	3.30%	9.10%
	Total	Count	517	327	227	216	259	164	81	1791
		% within TTR Before	28.90%	18.30%	12.70%	12.10%	14.50%	9.20%	4.50%	100.00%
		% within TTR After	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	28.90%	18.30%	12.70%	12.10%	14.50%	9.20%	4.50%	100.00%

Table 21: HOT Interest vs. TTR Interest Before Scenarios

HOT Interest vs. TTR Interest Before Scenarios										
			TTR Interest Before							
			0	1	2	3	4	5	6	Total
HOT Interest	0	Count	390	81	51	58	34	20	31	665
		% within HOT Interest	58.60%	12.20%	7.70%	8.70%	5.10%	3.00%	4.70%	100.00%
		% within TTR Before	82.10%	27.70%	23.70%	20.30%	12.50%	9.30%	18.10%	34.50%
		% of Total	20.20%	4.20%	2.60%	3.00%	1.80%	1.00%	1.60%	34.50%
	1	Count	35	129	68	40	46	12	6	336
		% within HOT Interest	10.40%	38.40%	20.20%	11.90%	13.70%	3.60%	1.80%	100.00%
		% within TTR Before	7.40%	44.20%	31.60%	14.00%	16.90%	5.60%	3.50%	17.40%
		% of Total	1.80%	6.70%	3.50%	2.10%	2.40%	0.60%	0.30%	17.40%
	2	Count	15	28	57	38	41	22	6	207
		% within HOT Interest	7.20%	13.50%	27.50%	18.40%	19.80%	10.60%	2.90%	100.00%
		% within TTR Before	3.20%	9.60%	26.50%	13.30%	15.10%	10.20%	3.50%	10.70%
		% of Total	0.80%	1.50%	3.00%	2.00%	2.10%	1.10%	0.30%	10.70%
	3	Count	16	24	17	98	59	33	11	258
		% within HOT Interest	6.20%	9.30%	6.60%	38.00%	22.90%	12.80%	4.30%	100.00%
		% within TTR Before	3.40%	8.20%	7.90%	34.30%	21.70%	15.30%	6.40%	13.40%
		% of Total	0.80%	1.20%	0.90%	5.10%	3.10%	1.70%	0.60%	13.40%
	4	Count	8	17	15	31	60	59	19	209
		% within HOT Interest	3.80%	8.10%	7.20%	14.80%	28.70%	28.20%	9.10%	100.00%
		% within TTR Before	1.70%	5.80%	7.00%	10.80%	22.10%	27.30%	11.10%	10.80%
		% of Total	0.40%	0.90%	0.80%	1.60%	3.10%	3.10%	1.00%	10.80%
	5	Count	7	9	5	14	25	56	27	143
		% within HOT Interest	4.90%	6.30%	3.50%	9.80%	17.50%	39.20%	18.90%	100.00%
		% within TTR Before	1.50%	3.10%	2.30%	4.90%	9.20%	25.90%	15.80%	7.40%
		% of Total	0.40%	0.50%	0.30%	0.70%	1.30%	2.90%	1.40%	7.40%

	6	Count	4	4	2	7	7	14	71	109
		% within HOT Interest	3.70%	3.70%	1.80%	6.40%	6.40%	12.80%	65.10%	100.00%
		% within TTR Before	0.80%	1.40%	0.90%	2.40%	2.60%	6.50%	41.50%	5.70%
		% of Total	0.20%	0.20%	0.10%	0.40%	0.40%	0.70%	3.70%	5.70%
	Total	Count	475	292	215	286	272	216	171	1927
		% within HOT Interest	24.60%	15.20%	11.20%	14.80%	14.10%	11.20%	8.90%	100.00%
		% within TTR Before	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
		% of Total	24.60%	15.20%	11.20%	14.80%	14.10%	11.20%	8.90%	100.00%