Patel College of Global Sustainability
Final Project

Study targets cutting tourist cars on island

ROB O'NEAL/The Citizen

Mary Bishop, an intern with the Key West Planning Department, left, speaks with Orlando resident Jeff Liconas about vistors' driving habits in the Florida Keys on Tuesday at the Southernmost Point.

BY SCOTT UNGER
Key West Citizen

A new study by the Key West Planning Department is researching ways to reduce the number of tourist cars on the island.

The city has partnered with the University of South Florida's Center for Urban Transportation Research and the Patel College of Global Sustainability to look at various options for cutting down congestion through tourist surveys and research.

USF graduate student Mary Bishop is interning with Sustainability Coordinator Alison Higgins on the study. The pair started with assumptions and data on travel habits and designed the survey around them.

"We had a couple assumptions; one of them was that on your first trip to Key West you rent a car and on subsequent trips you don't," Higgins said.

See **DRIVING**, Page **7A**

Toward Car Free Key West

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Toward Car Free Key West

Master of Arts Project Report
by
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Abstract

This report covers transportation survey data collected during the month of June 2016. Visitors of Key West, FL were asked about their transportation choices, considerations, and incentives and disincentives for various forms of transportation. The goal of this survey research is to inform City staff on future transportation planning. The steadily increasing volume of tourists to the island over the last few decades has stretched the demands of the transportation sector beyond capacity according to a 2013 study (Insights, Inc., 2013). The survey also covers barriers and benefits to various transportation modes, in hopes to inform the development of transportation options that meet the needs and desires of tourists.

Surveys combined multiple choice, interval scale and Likert-type questions. Between June 11th and June 27th 2016, 470 surveys were started. The attrition rate was 15%, leaving the final count for completed surveys at 398. Of the surveys started, 255 were collected by myself, at either the Southernmost Point Buoy or the Key West Express ferry terminal. The remaining 215 started surveys were taken online, accessed through one of the online forums listed above. Survey data revealed a variety of trends, including varying choices made by tourists depending on their number of visits, where they were visiting from, and arrival type.

Findings indicate that significantly more tourists rent a car for their first visit than for subsequent visits, while airport use increases with number of visits. Visitors from southern Florida are responsible for 56% of personal car arrivals to the island. Across all surveys, 49% of visitors reported *walking* as their primary mode of transportation, and 32% of visitor reported not having used a car at all during their visit. Out of those who did not use a car during their visit, 31% arrived via ferry and 24% arrived via the Key West Airport. Of those arriving to the Key West Airport, 67% answered that they did not use a car at all during their visit. For the Key West Express, 78% answered that they did not use a car at all during their visit. Combining all of this information, we sought to identify priority groups for behavior change, and suggest marketing strategies to meet the needs of the priority groups identified.

Acknowledgements

I am grateful to have been able to preform this research. While there has been a lot of research into changing behaviors, we were unable to find any research that applied to tourists. I am excited to help spearhead new research into this important realm of transportation behavior because it is so applicable throughout the country.

I truly could not have done it without the guidance of Dr. Amy Lester, from USF's Center for Urban Transportation Research. From the earliest formation of research questions to the arduous task of data analysis, she was an excellent mentor and patient teacher.

I would like to thank the City of Key West planning department for their gracious welcome and enthusiasm throughout this process. In particular, I would like to thank two people: Alison Higgins, whose determination and authoritative presence make her an exceptional advisor and friend, and Chris Hamilton, whose insights were invaluable to our team. Without their encouragement and insistence on the importance of this research, this report simply would not exist.

It is my hope that the Patel College of Global Sustainability will continue a mutually beneficial relationship with all parties involved. Dr. Lester, Ms. Higgins, and Mr. Hamilton are all inspiring individuals and any future partnerships with them are sure to be successful.

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1 Background

The densely populated island of Key West is located at the end of a 120-mile chain of islands off Florida's southern tip. Key West has a permanent population under 24,000 residents, with a seasonal population which exceeds 30,000 in winter months, and a functional population (including permanent, seasonal, commuting and tourists populations) that swells to approximately 54,000 people on any given day (Key West Chamber of Commerce, 2015). During certain special events, such as New Year's Eve and Fantasy Fest, the island, with a municipal land area of 7.4 square miles, accommodates upwards of 60,000 people.

As the 8th oldest municipality in Florida, many of the City's rights of way were set before its incorporation in 1828, when transportation needs were very different than today. Measuring 2.5 miles by 4.5 miles, the island exemplifies mixed-use principles and has high transit access - meaning that because of its compact nature, there is ample opportunity for a well designed transportation system to provide residents and tourists access to the resources they need. The compact nature of the island also makes the City very bikeable and walkable. Once on the island, tourists love to take advantage of their ability to walk and bike almost everywhere. A survey by the Monroe County Tourist Development Council (TDC) in 2008 found that tourists ranked the Florida Keys 3rd only to Hawaii and California as where to go for a "green" vacation, and named green transportation at the destination the number one thing they were seeking in green travel (Insights, Inc., 2013).

Despite said desire for green transportation, car driving overwhelmingly remains the most common mode for tourist arrivals to Key West, with 82% of visitors arriving by vehicle (Insights, Inc., 2013). Roughly one visitor in four drives a personal vehicle (26%), practically one-half of visitors (45%) first fly into Miami and arrive to the island via rental car, and another 11% of visitors fly into other Florida airports and rent a car for their visit (Insights, Inc., 2013).

Not only do the percentages of visitors arriving by personal vehicle remain high, the overall volume of visitors is increasing. Between 1996 and 2013, the number of visitor arrivals to The City of Key West nearly doubled. In 1996, the estimated number of annual visitors to the island

totaled 1,418,100 people (Leeworthy & Wiley, 1996), while 2,662,500 total annual visits were reported in 2014 (Key West Chamber of Commerce, 2015). This is an 87.7% increase in the number of tourist visitors in only a 17 year period. From 2007 to 2014, the island saw a 50% increase in the number of day-trippers, and a 40% increase in overnight visitors (Key West Chamber, 2015). Occupancy rates also increased during that period, rising from 75.3% in 2007 to 87.1% in 2014 (Key West Chamber, 2015). While this may be good for the local economy, it has had a negative impact on the quality of life of Key West residents (Harris & Harris, 2004). The geographically compact nature of the island, combined with the density of its inhabitants, make the constant influx of cars not only a detriment to the quality of life for residents, but for diminished experience for tourists.

Traffic congestion concerns are well documented. In a 2014 citizen survey, residents named "Traffic Congestion" as the #1 reported quality of life concern (Harris & Harris, 2004). A City sponsored survey in 2015 lists traffic as the #3 "biggest issue", behind affordable housing and overall cost of living (The National Citizen Survey, 2015). Residents are concerned that the island is a victim of its own success in terms of tourism effectively serving as both a source of livelihood and of stress for the community.

It is undeniable that the vehicles of residents contribute to the congestion problem. It is worth noting however, that while nationally the average household owns 2.09 vehicles, the residents of the City of Key West average 1.28 vehicles per household (Transportation Energy Data Book, 2013). Also, Key West ranks 2nd in the nation for residents who bike to work, boasting 19.8% ridership while the national US city average is .55% (US Census Bureau, 2013). In recent years, the City's in-house Transportation Coordination Team (TCT) has made transportation congestion reduction a priority and is actively pursuing upgrades to bicycle and pedestrian infrastructure. The TCT has increased advertising of the transit system to residents, and has just hosted the 2nd annual Green Commute Challenge in conjunction with the City's 15 largest employers.

In order to narrow the scope of this research, only tourist vehicles and behaviors will be considered. To date, no research exists on best practices, policies and behavioral change programs as they pertain to tourists. There are a few examples of local efforts by communities to

reduce tourist vehicles, but these case studies are not monitored for effectiveness. These are precisely the reasons why the TCT requested help preforming research in this area.

As stated earlier, Key West has very limited geographic space. Parking is a waste of such valuable space, particularly if we consider that cars are parked roughly 95% of the time (Barter, 2013). Anecdotal evidence suggests that it is highly likely that many Key West tourists' cars stay parked even longer once their destination has been reached. The abundance of personal and rental vehicle arrivals serve to illustrate the inefficiencies of the current system and call for improvement. City staff has also heard many testimonials form return visitors who have chosen not to utilize a car on subsequent visits. The impetus of this research is the city staff's interest in learning how to reach first time visitors to discourage personal vehicle arrival on their first visit.

The City of Key West is part of a regional, four-county coalition working toward greenhouse gas emissions reduction. The group, known as the Southeast Florida Regional Climate Compact has named emissions from the Transportation Sector as the largest single source of regional emissions (Compact Regional Climate Action Plan 2012). Since the political boundaries of the four counties encompass the four most used airports for Key West travel (Key West International Airport, Miami International Airport, Fort Lauderdale-Hollywood International Airport and Palm Beach International Airport), the results of this report will likely be disseminated during their well-attended annual summit.

The purpose of this study is to reveal tourist preferences and considerations to inform future transportation planning. By uncovering tourist trends, City staff can develop strategies for improving the current transportation system. The objective is to provide City staff with a resource that covers a range of tourists' demographics, preferences, considerations, barriers and beliefs, in hopes that such information may prove valuable, to not only reduce traffic congestion and increase alternative transportation, but also to raise awareness of additional opportunities for change.

Known first steps by the City are to share this information with all local stakeholders, including the local Tourist Development Council, City Planning Board, Monroe County, Florida Keys

Lodging Association, etc. to brainstorm on first steps, a long range plan and other research questions that this study has raised.

Initial questions include: *Do preferences change over the number of visits? Do visitors from different regions make different choices? What are the most viable non-car options for the island and how can we make them more appealing to tourists?* The central research question: *What options, incentives, or disincentives could the City of Key West offer first time visitors that would successfully prevent their arrival by personal vehicle?*

1.2 Problem Statement

The combination of the desire to drive personal vehicles and the popularity of Key West as a tourism destination have resulted in traffic congestion and parking issues for the island. The increase in the volume of visitors to the island over the last few decades (87.7% increase between 1996-2013 alone) has stretched the demands of the transportation sector beyond capacity (Insights, Inc., 2013).

While tourism is a source of many livelihoods, it is also a source of stress for the community. Resident quality of life is diminished due to the island being a victim of it's own tourism success. In a 2014 citizen survey, regarding changes in Key West, 58% of residents named *Erosion of quality of life* as the top concern (Harris & Harris, 2004). *Traffic Congestion* ranked #1 among the quality of life concerns of residents (Harris & Harris, 2004). In a city-sponsored survey in 2015, *Traffic* was ranked the #3 "biggest issue" (The National Citizen Survey, 2015).

Beyond the everyday issues of traffic and parking, the environmental impacts of personal vehicle use should also be considered. Although both tourists and residents have a shared responsibility to reduce the number of cars on the road, the focus of this study is on tourists. The island receives an average of 24,000 visitors each day, and overwhelmingly those visitors arrive via personal vehicle, creating parking shortages, increasing traffic congestion, and of course, increasing the carbon footprint per capita for tourists (Key West Chamber of Commerce, 2015).

According to McKenzie-Mohr (2011), in order to foster sustainable behavior, one has to study the barriers, benefits, and social norms of their audience before finding the right set of incentives and disincentives. There have been many studies on how to effectively reduce vehicle miles and single occupancy vehicle use, however, this research is primarily directed toward a specific audience: the residents and workforce of the area, *not* the tourist crowd. It is much easier to influence a permanent audience than an audience brand new to an area and its practices. To reduce tourist cars on the island, tourists need to be reached well before they arrive; however convincing them that they won't need a car may be difficult if they have not experienced the islands walkability in person. *What might it take to convey the knowledge of repeat visitors to first time visitors? What barriers need to be overcome before they will consider other options?*

1.3 Objectives

The primary objective of this research is to inform the city of Key West staff on tourist demographics as they relate to transportation choices, motivations, and preferences in order to inform policy, inform targeted marketing, develop partnerships, and otherwise improve congestion problems through available means.

The objective of the survey is to collect data to inform decision-making. Survey data may be used to inform future policy decisions for the city of Key West. Depending on the results of the survey, there may be a variety of plans of action, ranging from improved access to public transportation and partnerships between hotels and bus companies, to solutions as simple as increased parking rates.

The residents of Key West have clear concerns around tourist impact on their quality of life. The final objective of this research is to uncover useful strategies to improve quality of life and decrease tourism impact on the island.

1.4 Research Questions

1. From what sources did arriving tourists gather information about transportation options in Key West?
2. Did visitors consider alternatives to driving? If so, what was considered?
3. Would drivers consider going “car free” if they return for a visit?
4. What barriers must be overcome in order for those accustomed to the autonomy of personal vehicles to utilize pubic transportation?
5. What benefits can be derived or offered from not having a vehicle?
6. What value does bringing a vehicle to the island offer?
7. Central Research Question: What options, incentives, or disincentives could the City of Key West offer first time visitors that would successfully prevent their arrival by personal vehicle?

1.5 Significance

The data collected in this research will be used by the City of Key West Planning Department and may prove valuable in future planning. The data will be presented to all private and public transportation stakeholders. The information contained in this paper will serve as a practical tool for stakeholders to build a system that will satisfy consumer needs and effectively encourage public transit use. Low ridership is a common downfall of public transit. The City of Key West is approaching the topic of ridership in the planning phase, with the goal of increased ridership by alternative transportation and decreased arrivals via personal vehicle.

This study will also make important contributions to existing research. The majority of alternative transportation research has focused on two major themes: city congestion and commuter behavior. Key West is not a metropolis within surrounding land area, nor are its resident commuters the main cause of traffic congestions problems. To the best of my knowledge, there has not been any research specifically focused on tourist transportation behavior.

1.6 Scope of this Report

The surveys included in this research are a combination of in-person surveys, taken at the island's southernmost point between June 11th – June 27th, 2016, and surveys taken online during the same time period. Most online survey participants presumably visited the island prior to June of 2016, and their answers are recalled from their previous experience. While the majority of surveys were preformed on the island, by nature of being tourists, survey participants were visiting from all over the country and the world, with 33% visiting from southern Florida, 9% from northern Florida, 12% from the southeastern USA, 15% from the northeastern USA, 19% from the Midwestern USA, 5% from the Western USA, 3% from the Southwest, and 3% from Europe. Less than 1% of visitors were not from the USA or Europe. Survey questions included demographics, incentives and disincentives, barriers and benefits of different types of transportation, as well as choices made during this visit and the choices that will be considered next visit. A total of 470 participants started the survey. The attrition rate was 15%, leaving the final count for completed surveys at 398.

2 Literature Review

A large body of research exists on how to change environmental behaviors. Unfortunately, much of the research concludes that our minds are slow to change and some behaviors are so culturally saturated that changing them can be an uphill battle. Driving is one such behavior. Americans tend to overestimate the benefits of car travel and underestimate benefits of alternative transportation (DfT, 2007; Gardner & Abraham, 2007). The scope of the literature covered here is two-fold. First, the psychology of behavior change, the inertia of cultural norms, and methods for "fostering sustainable behavior" will be reviewed. Second, policy incentives and disincentives and their varying levels of success in case studies will be reviewed.

It is worth noting that during the process of researching for this literature review, with the assistance of a USF librarian, as well as the Sustainability and Transportation Coordinators for Key West, I did not come across any transportation research specifically focused around tourists.

2.1 Preference for Personal Vehicles

Central among the problems of changing driving behavior, are personal vehicle drivers minimization of benefits and overestimation of concerns regarding public transit use (Gardner & Abraham, 2007). Monetary cost is one such consideration. When questioned about comparing the cost of pubic transit to the cost of personal vehicle use, drivers tend to include only one variable for each – gas spending for vehicles and ticket price for transit. There are major errors in this reasoning, mainly in the exclusion of other costs for personal vehicles, such as insurance, parking, or depreciation of vehicles. Gardner and Abraham (2007) reason that this may to due to the perceived "sunk" cost of a personal vehicle, or the investment that has already been made in the vehicle.

Gardner & Abraham (2007) synthesized survey data and found six common thread issues that led drivers to be reluctant to abandon driving. First was the perception that alternative modes

of transportation increased travel time. Second was the perception that it takes more effort or planning to use public transportation. Third was a concern for personal space. Fourth were the monetary concerns addressed in the previous paragraph. Fifth, and underpinning all other concerns, was the sense of control provided by driving, and lack of control provided by public transit. Lastly, survey participants reported that increasing ones dependency on public transit systems was viewed as restrictive to their personal freedom.

London's Department for Environment, Food and Rural Affairs (DEFRA) found that there is also a question of practicality and availability of options. One interviewee in their study observed: "I would like to reduce my car use but there are no practical alternatives" (DEFRA, 2007).

Gardner & Abraham (2007) and DEFRA's (2007) combined findings suggest that there is a lot of work to be done when attempting to dispel or overcome perceptions and misconceptions about public transit use.

Perhaps the largest obstacle to overcome for American drivers is the perceived control or autonomy offered by driving. Personal vehicles provide drivers the opportunity to be "self-sufficient, able to spontaneously initiate journeys with minimal preparation, and choose new or alternative routes without consultation" (Gardner & Abraham, 2007). Drivers holding such biases in favor of driving tend to overestimate their own control, and not consider the aspects of car driving that are beyond their control, such as traffic delays, the possibility of a negative journey, and parking difficulties or costs (Gardner & Abraham, 2007).

2.2 Overcoming Bias for Personal Vehicle Use

While drivers hold biases toward driving, there are persuasive arguments that may encourage those on the fence toward alternative forms of transportation. For example, emphasizing parking difficulty, traffic congestion issues, or environmental concerns can help to foster behavior change (Leary, 2006; McKenzie-Mohr, 2013; Petrunoff, Rissel, Wen, & Martin, 2015).

Personal vehicles also contribute to CO_2 emissions and environmental issues, such as smog. Personal vehicles typically produce twice the amount of carbon per trip when compared to bus, air, or train travel (Carbon Footprint Calculator, 2016). Concurrent with the increase in environmentally conscious travelers, there is growing demand for greener travel options (Insights, Inc., 2013).

There are also economic arguments against driving. A broader systems approach implies that economic tradeoffs are not required for a shift towards sustainable development in transportation. "New research indicates that beyond an optimal level, increased motor vehicle travel can have overall negative economic impacts because the marginal productivity of increased travel is declining, and vehicle use imposes external costs that can offset direct economic gains" (Boarnet, 1997; Helling, 1997; Litman & Burwell, 2006). Most of us, however, are looking at a much smaller, personal scale, for which a different set of economic arguments can be made, such as the consideration of parking costs, depreciation of personal vehicle with increased use, and infrequent costs, like taxes and insurance (Gardner & Abraham, 2007).

This brings us to the rationalist paradox: the idea that even with all the facts presented, people are unlikely to make the most rational decision. Ockwell, Whitmarsh, & O'Neill (2009) offer several methods for effective behavior change that go beyond the basic presentation of facts. They argue that the engagement of the public is key, and that such effective engagement must always contain three components: a cognitive understanding of the problem, an affective (or emotional) interest in the problem, and a behavior that may be adopted for positive change (Ockwell et al., 2009). Put another way: simply hearing an argument is not enough. One must be concerned with the problem on an emotional level, *and* have a specific action they can take for change. This curtails the feeling of hopelessness that many people experience when faced with large-scale problems.

2.3 The Role of Community

A large body of work exists arguing that policy change (top-down action) works best when combined with grassroots efforts (bottom-up action) from within communities (CUTR, 2015; Frey & Stutzer, 2006; Ockwell, et al., 2009; Seyfang & Smith, 2006). Seyfang & Smith (2006) promote grassroots engagement and argue that pioneering organizations on the community scale are central to change. They further argue that the smoothest implementation for change combines large governmental agendas with community-based initiatives (Seyfang & Smith, 2006).

Frey and Stutzer (2006) list a combination of three factors that are necessary for grassroots intervention to be successful. First, one must feel a personal connection with their community. Second, they must feel that the efforts they are making will be reciprocated in some way. And lastly, they cite the widely accepted fact that people are more likely to adopt a practice or policy when they themselves have had a role in the decision making process (Frey & Stutzer, 2006).

Ockwell et al. (2009) emphasize that individual action is important, but group action is what is needed for widespread change. They also call for the combined action of top-down and bottom-up efforts, and conclude that in order for information to be communicated in a way that will effectively create demand for change, it must be both politically viable and psychologically compelling (Ockwell, 2009).

Figure 1
The Need to Address Both Bottom-Up and Top-Down Barriers to Engagement

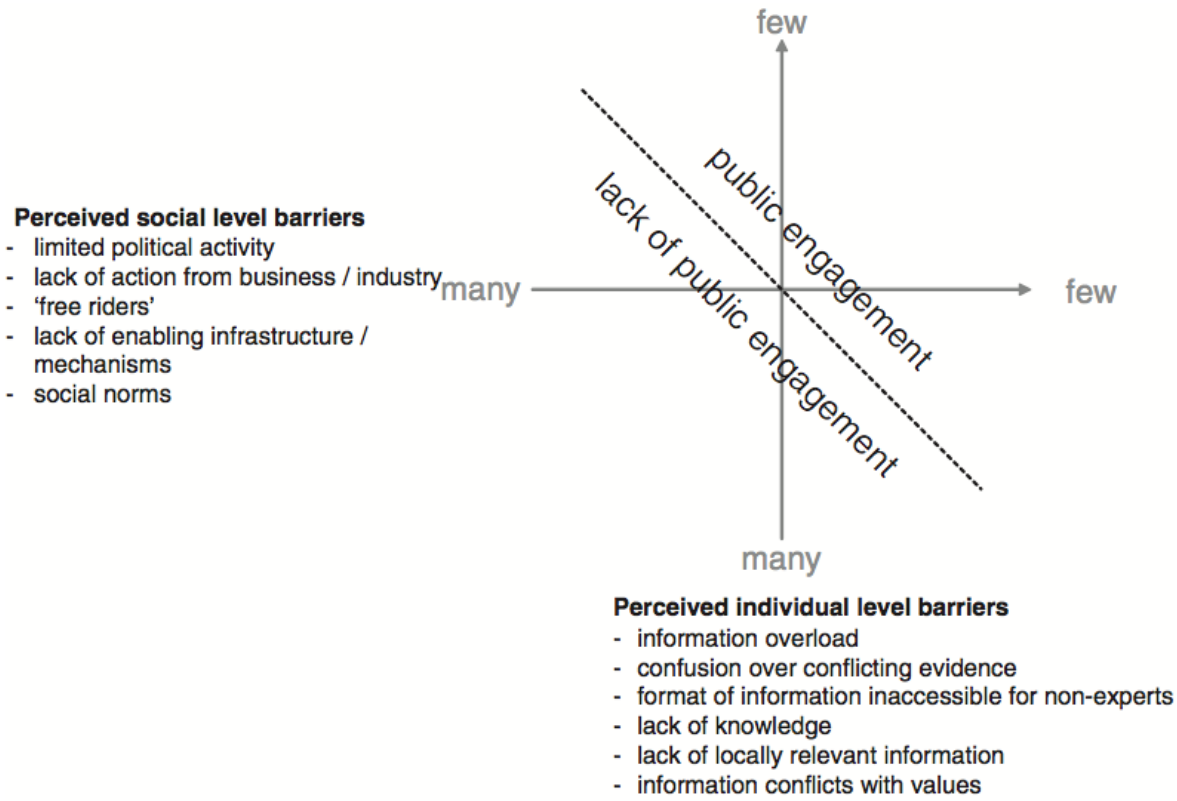


Figure 1: Ockwell's Barriers to Engagement (Ockwell et al, 2013)

The role of community is crucial to the success and acceptance of policies. Or as Parkinson (2004) so eloquently explains: “The ebb and flow of public debate carries on in the media, in private conversations, in formal and informal setting, from pubs to parliaments and back again” (Parkinson, 2004). Strong-armed policies are likely to be met with resistance, whereas involvement in community decision making makes residents more likely to adopt desired behaviors (Frey & Stutzer, 2006).

2.4 Role of Psychology

While economic arguments focus on financial incentives and disincentives, and policymakers tend to focus on command and control policies for behavior modification, psychologists insist that the most effective strategies involve shifts in thinking.

Frey and Stutzer (2006) argue that the economic issues of *free-ridership* and *public goods* will never be accounted for fully. Ergo, facilitation of personal “environmental values” is the only way to make up for such gaps. Environmental morale must reach a certain threshold in order to be fully adopted. Individuals must see that costs involved in controlling and enforcing certain behaviors would be prohibitively high before they can see that voluntary action is needed. Frey and Stutzer (2006) use the example of not littering cigarette butts, where enforcement costs would be high, but voluntary compliance has essentially zero cost. They also cite the fact that people tend to follow laws that they view as fair, or as having legitimacy that makes them worthy of compliance. Most interesting, is their observation that if environmentally conscious policy makers are to be re-elected, public interest must be present to motivate voters.

Environmental Psychologist, Doug McKenzie-Mohr, PhD, uses the Community Based Social Marketing (CBSM) five step strategy in *Fostering Sustainable Behavior* (McKenzie-Mohr, 2011). First, one must select the behaviors they are hoping to change. Second, they must identify barrier and benefits to relevant behaviors. Third, strategies must be developed based on perceived barriers and benefits in order to motivate behavior change. Effective strategies include things like: simultaneously reducing barriers to one behavior while increasing benefits for the other, matching appropriate incentives with

identified barriers, gaining public commitment, and developing visible social norms that encourage compliance. The fourth step to foster sustainable behavior using CBSM is to create a pilot campaign and the last is to evaluate progress of pilot program before beginning broad-scale implementation. The strategies used in this research are most heavily influenced by the behavior change techniques outlined by McKenzie-Mohr's *Fostering Sustainable Behavior* (2011). Future implementation of pilot programs will also follow the model outlined by McKenzie-Mohr (McKenzie-Mohr, 2011).

Addressing both McKenzie-Mohr's (2011) social norms and Frey and Stutzer's (2006) concepts of compliance with fair laws and reciprocated behaviors, is the following quote from *Environmental Morale and Motivation*: "Reciprocal fairness or reciprocity means that an individual responds to an action that is perceived to be kind or fair in a kind matter, and to an action that is perceived as hostile or unfair in a hostile manner" (Frey & Stutzer, 2006). This quote is yet another illustration of how the role of the individual affects community buy-in, and ultimately eases the task of policy enforcement.

2.5 Effective Policies Employed Elsewhere

Several policy incentives and disincentives have been explored and employed to reduce the number of cars on the road, with varying levels of success.

Parking Management Plans, for example, combine awareness raising with increased parking rates. Typically, an increase in parking rates results in a reduction in commuter car use and an increase in carpooling. This impact is compounded, and met with less resistance when partnered with awareness raising (Petrunoff et al., 2015). In a controlled experiment, Petrunoff et al. (2015) saw a 42% reduction in commuter parking where parking rates were increased and education on the impacts of driving were offered, compared to only 5% reduction in control, where no educational information was conveyed and there were no rate increases (Petrunoff et al., 2015).

A well-known example of effective reduction in personal vehicle use is congestion charging in London (DfT, 2007; Downing & Ballantyne, 2007; Leape, 2006; Transport for London,

2002; Transport for London, 2006). Beginning in 2003, London began imposing a congestion charge for all vehicles driving or parking on public roads during peak hours (7am-6:30pm). The rate was carefully calculated to be large enough to discourage drivers, or at least make them think twice, but not so large as to be an unnecessary burden. Basically, the fee was large enough to be a consideration when making driving decisions, but not so large as to avoid driving to London altogether.

In 2003, the charge equated to just under $2 USD, with residents living within the inner city fee boundary receiving a 90% discount (Leape, 2006). Despite initial public resistance, the London Congestion Charge met with improved public support in a four-year follow-up study (Downing & Ballantyne, 2007). Downing and Ballantyne (2007) speculate that the public approval in the follow-up study was, at least in part, due to the congestion charges' success in reducing traffic congestion. A common concern among business owners when faced with such a policy is about losing money due to the implementation of tolls and fees. In the case of the London congestion charge, "no significant effect for total central London retail sales" was found, although some individual stores reported a negative sales impact (Leape, 2006).

Ockwell et al. (2009) argue that although public outcry is common during a period of "cracking down" on a certain behavior, acceptance of the policy is inevitable. They cite the timely issues of smoking bans and strict drunk driving laws and enforcement as policies that "would have not gone over well 20 years ago", but are now widely accepted, even praised (Ockwell, 2009).

Rietveld & Stough (2005) suggest that tolls are the obvious answer to many transportation problems. They argue that roads are not public goods "because they don't meet the criteria of non-rivalness and non-excludability which define public goods" (Rietveld & Stough, 2005). They claim that the idea that you can *build your way out of* transportation problems is a myth, that if consumers are not paying the added cost of the improvements, behaviors will not change. They further argue that for any product that is well managed, an increase in input cost will result in an increase in price, but this is somehow not true for roads. These authors might even consider the careful analysis offered by all of the other authors in the

literature review to be silly, in the face of a problem with such a simple and effective solution – tolls.

2.6 Precursors to Policy Change

Policy change should always be the last step, after developing psychological interventions, and after identifying "key beliefs and attitudes that underpin driving decisions in the context of available alternatives" (Gardner & Abraham, 2007). Policy change is ideally driven by community engagement (Ockwell et al., 2009) and built through the combined effort of government and grassroots organizations (CUTR, 2015; Frey & Stutzer, 2006; Seyfang & Smith, 2006).

In other words, we must understand individual motivations for decisions before attempting to develop psychological interventions. And psychological interventions should be considered in the design of driving reduction programs. Heavily imposed policy tends to be less popular and more expensive than cultural shifts, though neither is easily achieved (Ockwell, 2009).

Goldman and Gorman (2006) note that in order to incorporate truly 'sustainable' transportation systems, one must not view projects with an end point, but as part of a continuous process of system improvement. They observe that a common "pitfall" of transportation and planning is the development of policies that do not take into account the larger system in which individual transportation systems are embedded (Goldman & Gorman, 2006).

2. 6 Conclusions

In almost all successful cases of reducing personal vehicle use, the policy employed to reduce personal vehicle use was combined with a substantial infrastructure investment to improve public transportation (Cairns, 2010; Petrunoff et al., 2015; Transport for London, 2002; Transport for London, 2006). In the case that drivers are dissuaded from driving personal vehicles, it is important for behavior *maintenance* that the alternative (in this case public transportation) be perceived as reasonably simple, comfortable, affordable, and time efficient (Gardner & Abraham, 2007). In order for American's to successfully transition away from the autonomy offered by cars, a combination of awareness raising, fostering an environment of cultural norms, and the adoption of "environmental values" (where car use is avoided) need to be achieved (Frey & Stutzer, 2006; McKenzie-Mohr, 2011; Petrunoff et al., 2015). Gardner & Abraham (2007) and McKenzie-Mohr (2011) both emphasize that the need for understanding of underlying attitudes is at the heart of psychological interventions and successful behavior change.

3 Methodology

3.1 Research Design

In order to address the transportation problems and research questions discussed previously, a research team consisting of Dr. Amy Lester, Alison Higgins, Chris Hamilton and myself developed a quantitative survey. Survey questions were designed to offer insight into the travel choices made by both current and former tourists visiting Key West, Florida. Before being finalized, our questions were tested in multiple venues to determine clarity and usefulness of questions based on the quality of answers. Qualitative chats with tourists helped us to determine if we had exhausted all possible answer choices.

The finalized survey, which was hosted and distributed through *Qualtrics*, and online survey program, is the sole data source used in the reporting of results. Statistical significance was calculated using the number of annual visitors per year to the island of Key West: 2,662,500 (Key West Chamber of Commerce, 2015). Our team determined that in order for the survey to achieve a statistical significance of p=.05 (95% CI, 5% margin of error), greater than 385 surveys were required. Statistical analysis of the data allowed for measurable, quantitative results that uncover behavioral trends and common opinions held by tourists.

3.2 Research Methodology

Surveys were distributed in two ways: first, current visitors to the island were surveyed in person, during their visit to the island. Armed with a Wi-Fi hot spot and several borrowed tablets and pads, surveys were distributed to visitors waiting in line at the Southernmost Point. The Southernmost Point Buoy is a popular tourist photo opportunity, and the line to take a photo varies throughout the day from less than one minute to over thirty minutes. The sight was strategically chosen for both practical and methodological reasons. Not only are those in line waiting idly, but they are almost guaranteed to be tourists. One other spot was used to survey in-person visitors: the Key West Express ferry terminal. Chosen for similar reasons to the Southernmost Point, the terminal was full of tourists sitting in air conditioning, waiting to load the ferry.

The second distribution method was online. The survey was posted to a number of online forums and social media platforms, including but not limited to: The City of Key West website, Trip Advisor, Flyer Talk, and a number of individuals Facebook pages. In each listing, as well as within the survey itself, the survey specified that it was meant for "current or former visitors to Key West" and should exclude Key West residents. Of course, there is no way to insure that the survey not be taken by unintended groups, as the survey required self-exclusion.

3.3 Research Execution

Between June 11th and June 27th 2016, 470 surveys were started. The attrition rate was 15%, leaving the final count for completed surveys at 398. Of the surveys started, 255 were collected by myself, at either the Southernmost Point Buoy or the Key West Express ferry terminal. The remaining 215 started surveys were taken online, accessed through one of the online forums listed above.

3.4 Data Analysis

Once the minimum number (384) of surveys was surpassed, the survey link was shut down in order to begin the analysis. The *Qualtrics* system offers users the ability to create "reports" or filter information thorough selected criteria. For example if I wanted to look at survey responses from personal vehicle arrivals only, a filter could be quickly applied, allowing for quick comparisons of responses between groups. The *Qualtrics* system also has a "cross tabulation" function, whereby the responses from one question could be crossed against the responses from another. This is an easy way to hunt for statistical anomalies in expected vs. actual outcomes. The program calculates the chi squared, t-values, and p-values. For this research we used a significance level of $p < .05$.

3. 5 Limitations

The limitations of this report include but are not limited to: time of year, distribution methods, survey length, and some unforeseen analysis issues.

April through November is considered the "off-season" on the island, with fewer daily arrivals as opposed to arrivals during high season (December-April). It stands to reason that parking and traffic issues experienced by tourists surveyed in June may be less severe than in other months of the year. Questions like "how challenging are the following" may be answered differently during "off-season", and incentives may be more or less effective based on the severity of traffic and parking issues. Further, "off-season" visitors may differ demographically than visitors at other times of the year. For example, I was informed anecdotally that more families and more Floridians visit during the summer months because of the overlap with school holiday. Acknowledging issues like these; this survey makes no claims of being representative of Key West tourists across the board.

Other potential weakness of this research stem from the chosen routes of distribution. Southernmost Point Buoy visitors may differ significantly from the average visitor in ways unknown to this research team. Performing research in the ferry terminal certainly has the capacity to skew the data in various ways, as such a large percentage of ferry riders are not car uses, and therefore may hold different opinions or behave differently than those arriving by car. Online distribution could not guarantee the exclusion of survey participants not meeting the criteria of the study. Selected online forums varied widely in the audiences they reached and could have inadvertently tapped into a group that is in some way not representative of the average Key West tourist.

Although the attrition rate for the survey (15%) is about average given the mean completion time of 12 minutes (MacElroy, 2000), with over half finishing between 8 and 14 minutes, the considerable length and complexity of the survey could still be considered a weakness. Later questions were completed slightly less often than earlier questions. Survey questions 1-6 were completed by over 90% of participants, while questions 7-12B were completed by 87% to 90% of participants, and questions 12C to 14 drop to an 85% completion rate.

One final issue, an error in understanding the *Qualtrics* program, resulted in not being able to use age as a factor for comparison. Unlike other questions, age was indicated using a scale question, not a multiple-choice question. Through an email communication with myself, *Qualtrics* staff indicated that there was no way to correct this issue.

4 Research Findings

The following section is a report of the data collected and analyzed using *Qualtrics* – an online survey program. Data from the 398 completed surveys were analyzed via filtered reports and cross tabulations. The following research findings answer the research questions in their original order.

In Part 1, section headings are the original research questions. Relevant finding from each question are reported upon, followed by at least one graphic illustration for each question.

In Part 2, section headings are follow-up questions to the original research questions. Both verbal and graphic representations of findings that are of interest to the broader research are included in this section.

Initial Research Questions:

1. From what sources did arriving tourist gather information about transportation options in Key West?
2. Did visitors consider alternatives to driving? If so, what was considered?
3. Would drivers consider going "car free" if they return for a visit?
4. What barriers must be overcome in order for those accustomed to the autonomy of personal vehicles to utilize pubic transportation?
5. What benefits can be derived or offered from not having a vehicle?
6. What value does bringing a vehicle to the island offer?
7. Central Research Question: What options, incentives, or disincentives could the City of Key West offer first time visitors that would successfully prevent their arrival by personal vehicle?

Added Research Questions:

8. Who is responsible for car traffic?
9. Who is not responsible for car traffic?
10. Who are the priority groups for reducing car traffic?
    - What options are car drivers willing to consider?
    - Where are those who would consider other options from?

4.1 Part 1: Initial Research Questions

1. From what sources did arriving tourists gather information about transportation options in Key West?

To gain insight into this question, the survey asked participants to indicate "any of the following sources (they) used to get information about transportation options." Participants were also given the option to choose if they sought the information before or during their visits.

Overall, participants sought out transportation information more frequently before their visit than during their visit. The most highly rated sources of information before arriving were *Trip Advisor*, followed by *Friends and Family*, and ranking third is *Did not explore transportation options*. The only information source utilized more frequently 'during visit' than 'before arriving' was the visitor's hotel accommodation, indicated on the survey as *My Hotel*. (See Figure 2)

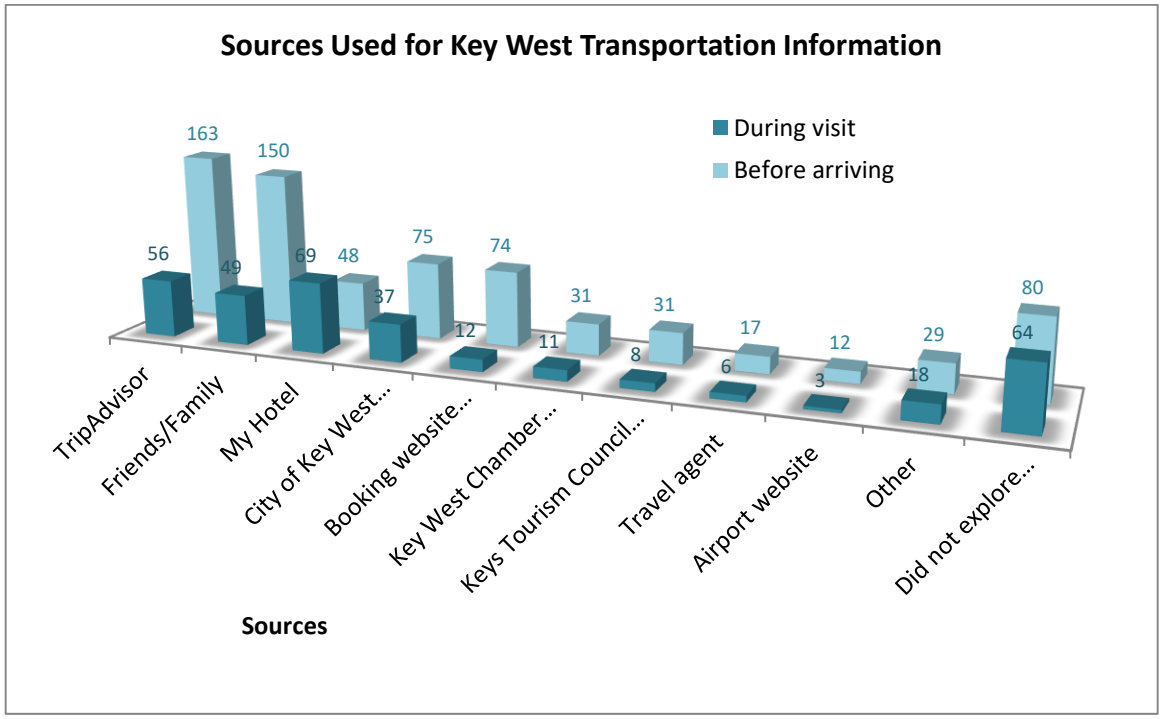


Figure 2: Sources Used for Key West Transportation Information (*N*=398)

2. Did visitors consider alternatives to driving? If so, what was considered?

To address this research question, survey participants were asked a series of questions regarding their current trip TO Key West. They were given a list of available transportation options, and were asked to indicate which ones they 'actually arrived by' 'considered arriving by' 'would consider next trip' 'would never consider' and 'were not aware of'.

The figure below contains the responses of all survey participants, comparing the first two options - 'actually arrived by' and 'considered arriving by'. Overall, there is similarity between the options actually used and options considered. Most visitors surveyed in this study arrived by personally owned vehicle (37%) or rental vehicle (29%), for a combined 66% of visitors arriving by a vehicle of some sort. (See Figure 3)

While only 13% of visitors surveyed arrived via the Key West Airport, 26% considered the option. Similarly, while 13% of those surveyed arrived via the Key West Express Ferry, 20% of survey participants considered a ferry arrival. In both cases, more participants considered using the airport and ferry to arrive than those that actually arrived by them. (See Figure 3)

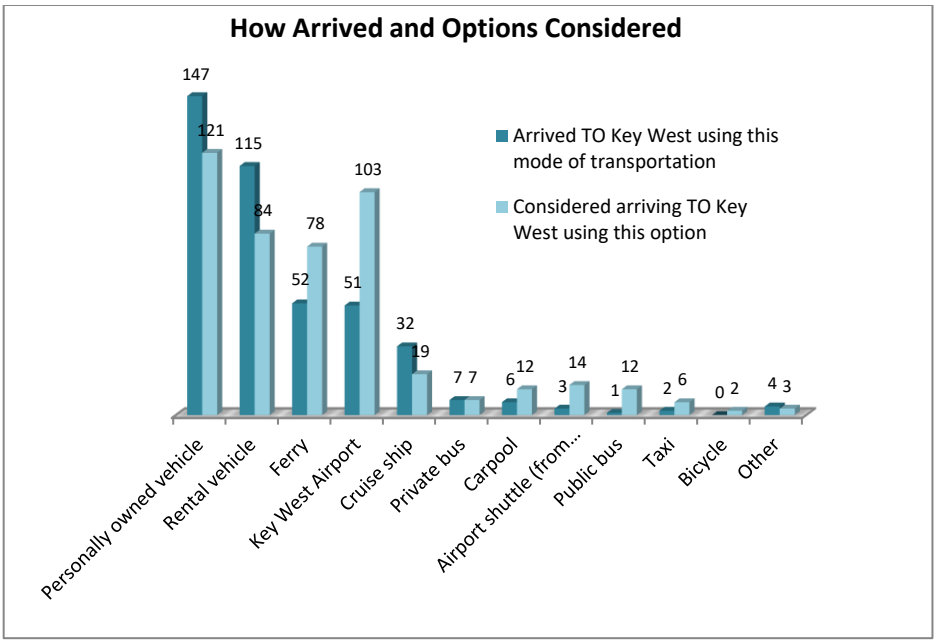


Figure 3: How Arrived and Options Considered (*N*=398)

Please note: for simplicity's sake, in both the surveys taken by tourists and in this report, the Key West International Airport, airport code EYW, is simply referred to as the Key West Airport.

3. Would drivers consider going "car free" if they return for a visit?

While the previous question asked what mode was considered *before* arriving, this question asked, having *arrived*, what modes would be considered next trip. Here, only the responses of personal and rental vehicle drivers are compared. In terms of what they would consider next trip, 57% of those arriving by rental vehicle and 48% of those arriving by personal vehicle said that they would consider arriving the same way next trip. It is worth noting that relatively few rental vehicle drivers would consider driving their personal vehicles (14%) and vice-versa, with even fewer of personal vehicle drivers (11%) stating that they would consider driving a rental vehicle next trip. These two groups tended to have different considerations, perhaps indicating that there is some other factor separating them, geographic or otherwise. As for alternatives to driving, 37% of rental vehicle drivers and 31% of personal vehicle drivers said they would consider arriving by the Key West Airport next trip. Falling closely behind the Key West Airport, 27% of personal vehicle drivers would consider arriving via Ferry for their next trip. (See Figure 4)

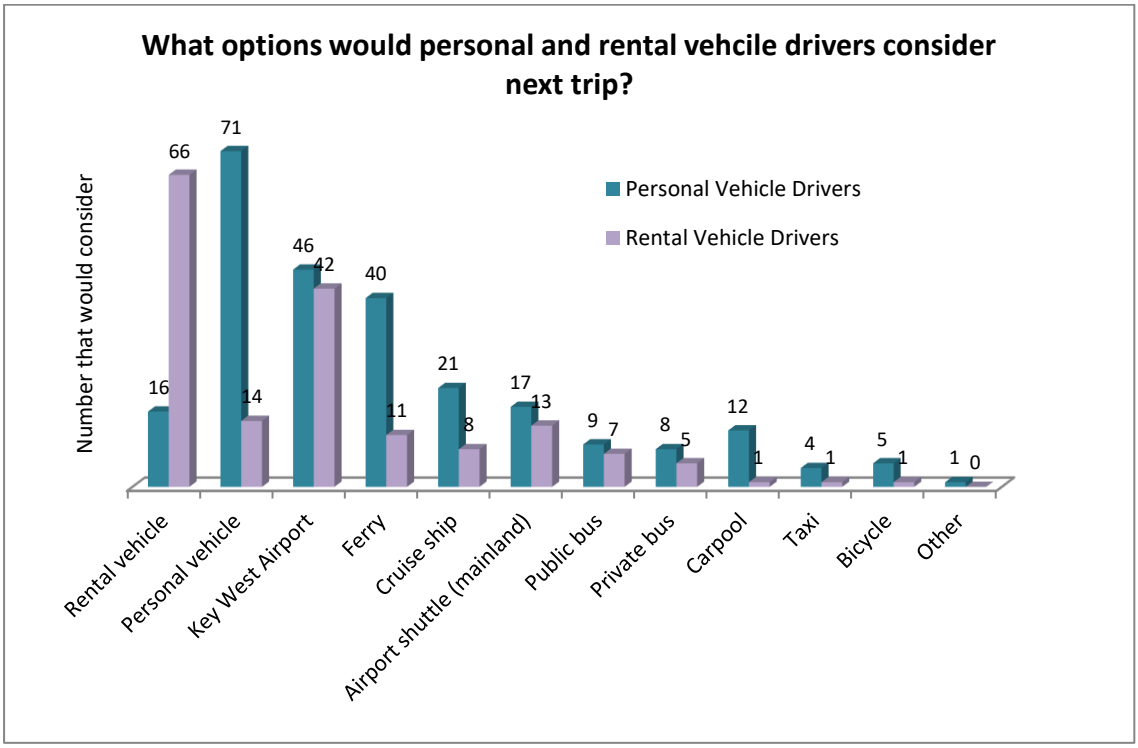
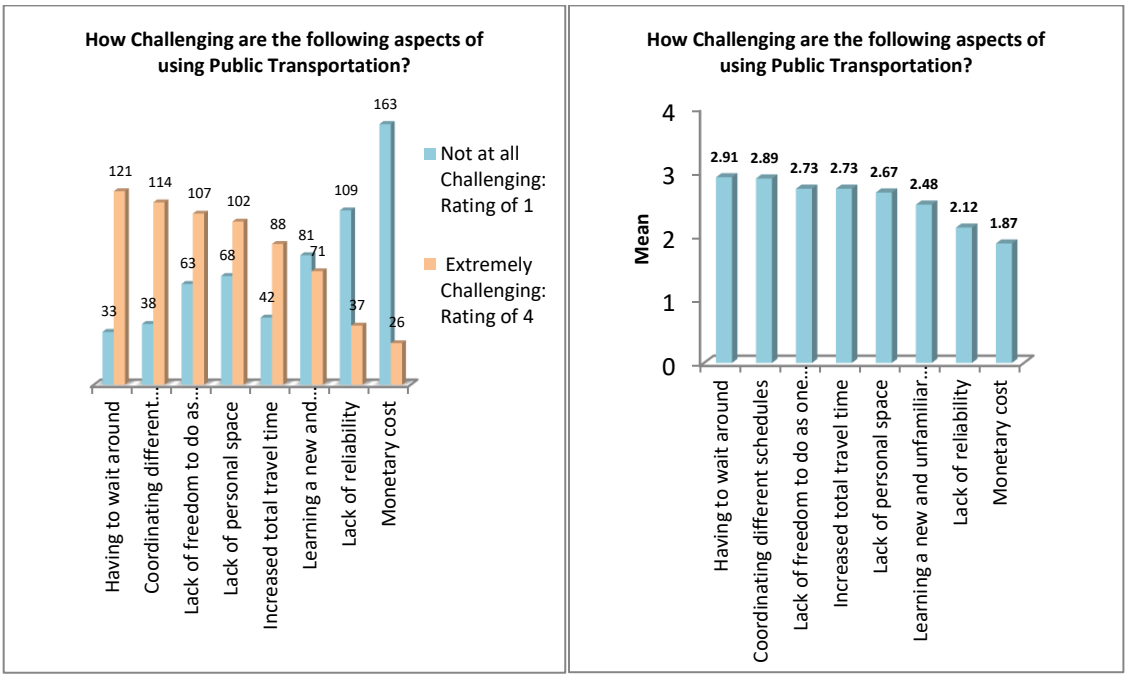


Figure 4: What options would drivers consider next trip?
(Personal Vehicle + Rental Vehicle, *n*=262)

4. What barriers must be overcome in order for those accustomed to the autonomy of personal vehicles to utilize pubic transportation?

In order to gain insight into this question, survey participants were asked to rate the challenges of using public transportation on a 1 to 4 Likert-type scale, with 1 indicating *Not at all Challenging* and 4 indicating *Extremely Challenging*.

Below, Figure 5a shows the frequency of only the 1 and 4 ratings. Figure 5b illustrates the mean rating of each of the potential challenges. Both figures illustrate that the most challenging aspects of using public transportation are: *Having to wait around* (*M*=2.91, *SD*=.95), *Coordinating different schedules* (*M*=2.89, *SD*=.96), and *Lack of freedom to do as one pleases* (*M*=2.73, *SD*= 1.05). *Monetary cost* was rated as *Not at all Challenging* by 41% of participants, and received the lowest mean score of *M*=1.87 (*SD*=.94).



Figures 5a & 5b:
Challenging Aspects of Public Transportation? (*N*=398)

5. What benefits can be derived or offered from not having a vehicle?

Directly following the question regarding the challenges of public transportation was this question: "How beneficial are the following features of car-free travel?" This question also utilized a Likert-type 1 to 4 scale, with 1 indicating *Not at all beneficial* and 4 indicating *Extremely beneficial*.

As illustrated in Figure 6, all aspects of car-free travel listed were most frequently rated as *Extremely Beneficial*. The most highly rated among these benefits were *Avoid having to find parking* (*M*=3.58, *SD*=. 79), *Avoid parking fees* (*M*=3.49, *SD*=. 85), and *Avoid drinking and driving* (*M*=3.38, *SD*=1.01). Even the lowest rated potential benefit (*Get closer to attractions and dining*) received a mean score of 3.13 (*SD*=. 97). All beneficial aspects of car-free travel that were listed received a mean score higher than 3.13.

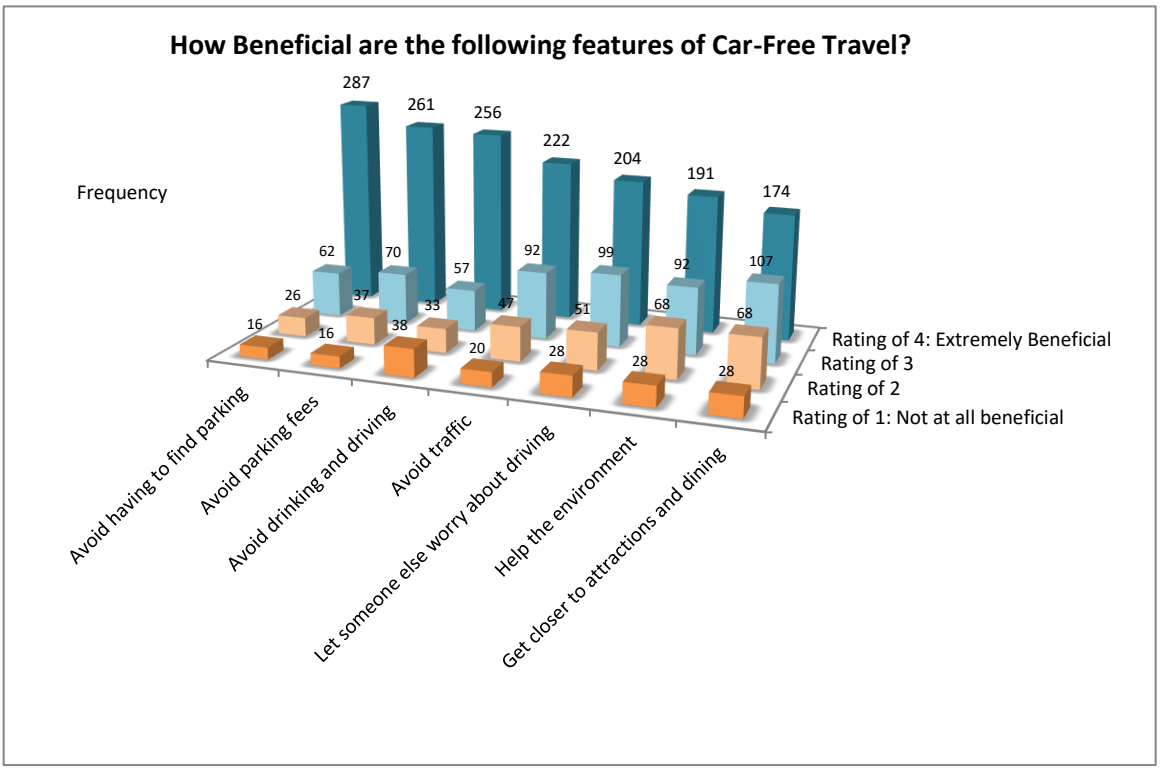


Figure 6: Beneficial features of Car-Free Travel? (*N*=398)

6. What value does bringing a vehicle to the island offer?

To gain insight into this question, surveys asked, "How accurately do the following describe your reasons for driving to Key West?" Survey participants were then asked to indicate on a 1 to 4 Likert-type scale how strongly the reasons listed described their feelings. Only the responses of survey participants who had previously indicated that they had either driven a personal vehicle (*n*=147) or rental vehicle (*n*=115) to the island were considered.

The mean scores of both personal and rental vehicle drivers fall into the same rank order, with the exception of the highest rated reason for driving. For drivers of personal vehicles, *Freedom to do as you please* received the highest mean score (*M*=3.4, *SD*=.93), and *The drive is scenic* shares the second place mean score with *Driving is convenient* (*M*=2.9, *SD*=1.15). Rental vehicle drivers share the top three motivations for driving with personal vehicle drivers, but with *Freedom to do as you please* and *The drive is scenic* receiving equal mean scores (*M*=3.2, *SD*=.98; *M*=3.2, *SD*=1.02), and *Driving is convenient* rated third (*M*=2.7, *SD*=1.05). *Safety* was not a strong motivator for any drivers surveyed (*M*=1.9, *SD*=1.05; *M*=1.9, *SD*=1.00). (See Figure 7)

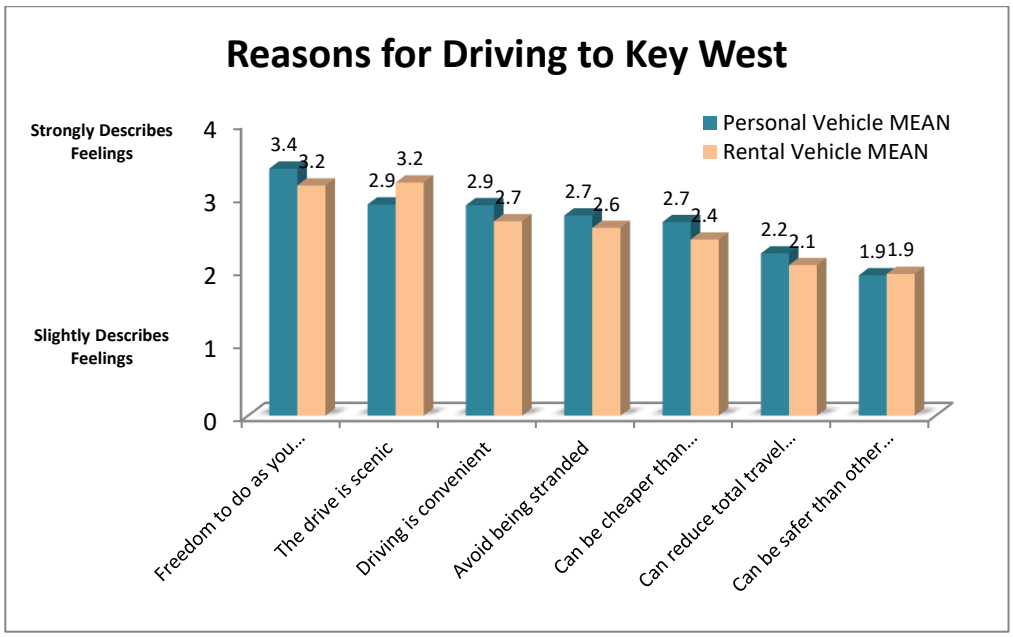


Figure 7: Reasons for Driving to Key West
(Personal Vehicle *n*=147, Rental Vehicle *n*=115)

7. Central Research Question: What options, incentives, or disincentives could the City of Key West offer first time visitors that would successfully prevent their arrival by personal vehicle?

To address the incentives aspect of this research question, survey participants were asked how effective a variety of possible incentives would be at discouraging their arrival by car. For the results in Figure 8, the responses of personal vehicle drivers (*n*=147) and rental vehicle drivers (*n*=115) are combined (*n*=262).

The highest rated mean scores among drivers were *Free Public Transportation* (*M*=3.00, *SD*=1.07), *Convenient Public Transportation* (*M*=2.95, *SD*=.97), and *Hotel Shuttle to and from Old Town* (*M*=2.95, *SD*=1.03). (See Figure 8)

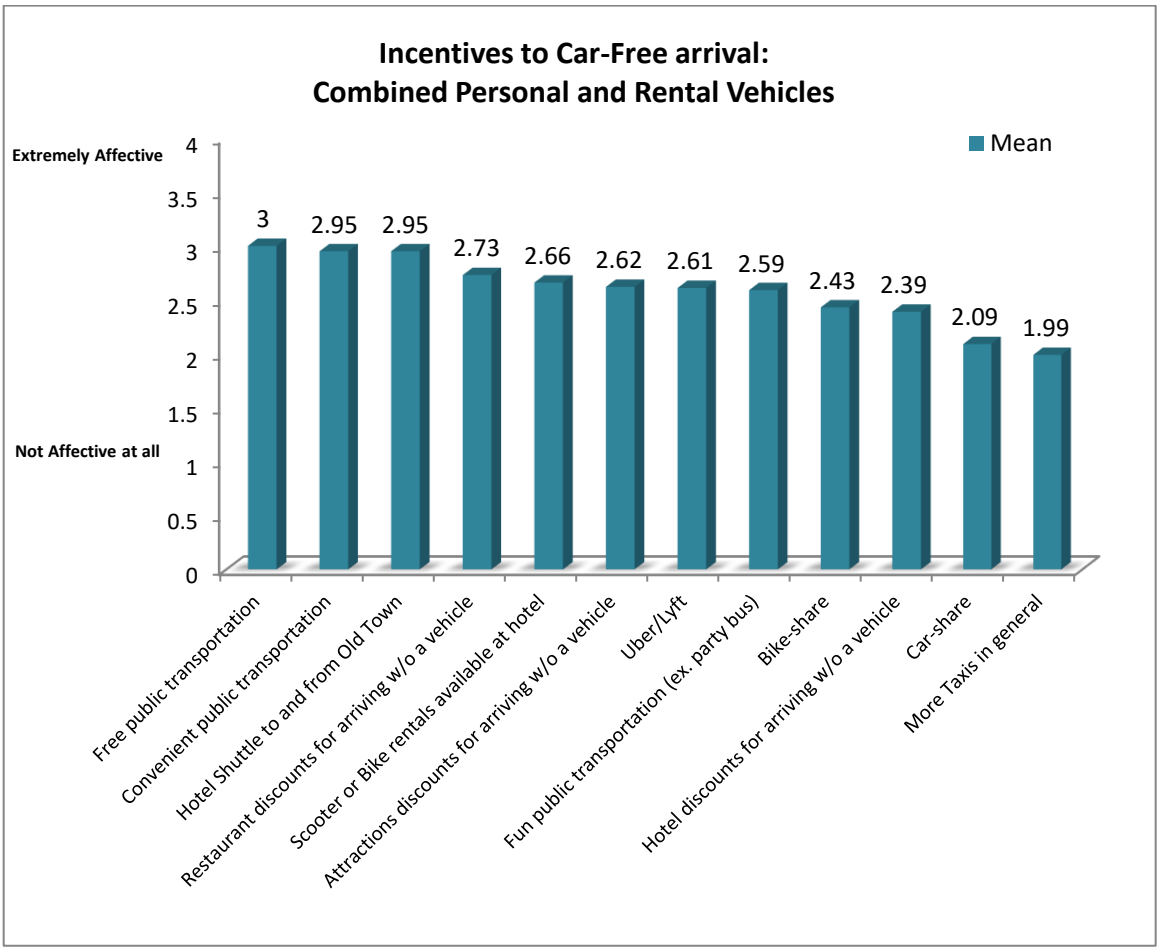


Figure 8: Incentives to Car-Free arrival
(Personal Vehicle + Rental Vehicle, *n*=262)

To address the disincentives aspect of this research question, survey participants were asked how effective a variety of possible disincentives would be at discouraging their arrival by car. For the results in Figure 9, personal and rental vehicle drivers are combined (*n*=262). The mean scores all disincentives fall between *M*=2.33 and *M*=2.52, with *Parking fees elsewhere on the island* receiving the highest mean score (*M*=2.52, *SD*=.99). Eight out of the twelve possible 'incentives' received mean scores higher than the highest 'disincentives' mean score. While the disincentives listed may be somewhat effective, a strong case cannot be made for any of them based on this data.

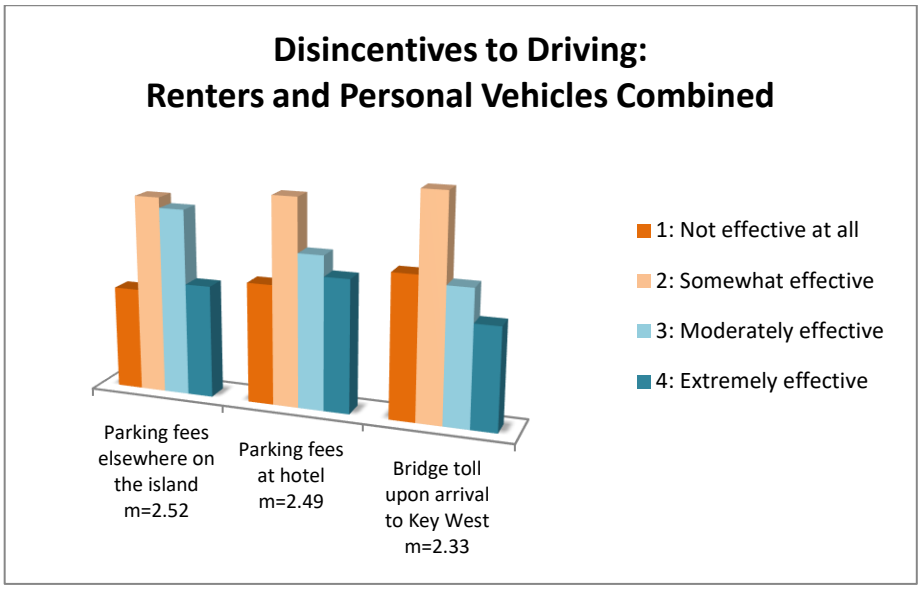


Figure 9: Driving Disincentives
(Personal Vehicle + Rental Vehicle, *n*=262)

Personal vehicle drivers, when compared to both rental car drivers and non-driver groups, were significantly more likely to rate disincentives as "not affective at all" and less likely to rate disincentives as "extremely affective". This relationship is illustrated in Table 1. In comparison to other groups, personal vehicle drivers rated all disincentives as relatively ineffective. There were no other statistically significant relationships between mode of arrival and the effect of disincentives.

Table 1: Disincentives have relatively little affect on personal vehicle drivers (n=147)

Parking Fees Hotel	0.01	Not Affective at all	t=3.2, p=.00, n=135
Parking Fees Elsewhere	0.01	Not Affective at all	t=2.9, p=.00, n=132
Bridge Toll	0.02	Not Affective at all	t=2.6, p=.01, n=133

4.2 Part 2: More Questions to Consider

In Part 2 of this analysis, primary modes of transportation, rental car trends, behavior of repeat visitors, considerations for future visits, and priority groups for marketing car reductions will be explored.

8. Who is responsible for car traffic?

Here, the data was sifted through to determine if there were any distinguishing characteristics of those arriving with personal and/or rental vehicles. A significant difference between visitors traveling from different regions was discovered.

Perhaps unsurprisingly, those visiting from Southern Florida accounted for 56% of all personal vehicle arrivals (n=147), though they represent only 33% of total visitors. Those who rented vehicles for their visit were disproportionally from the Midwest; while only 19% of total visitors are from the Midwest, they accounted for 35% of vehicle rentals (n=115). (See Figure 10)

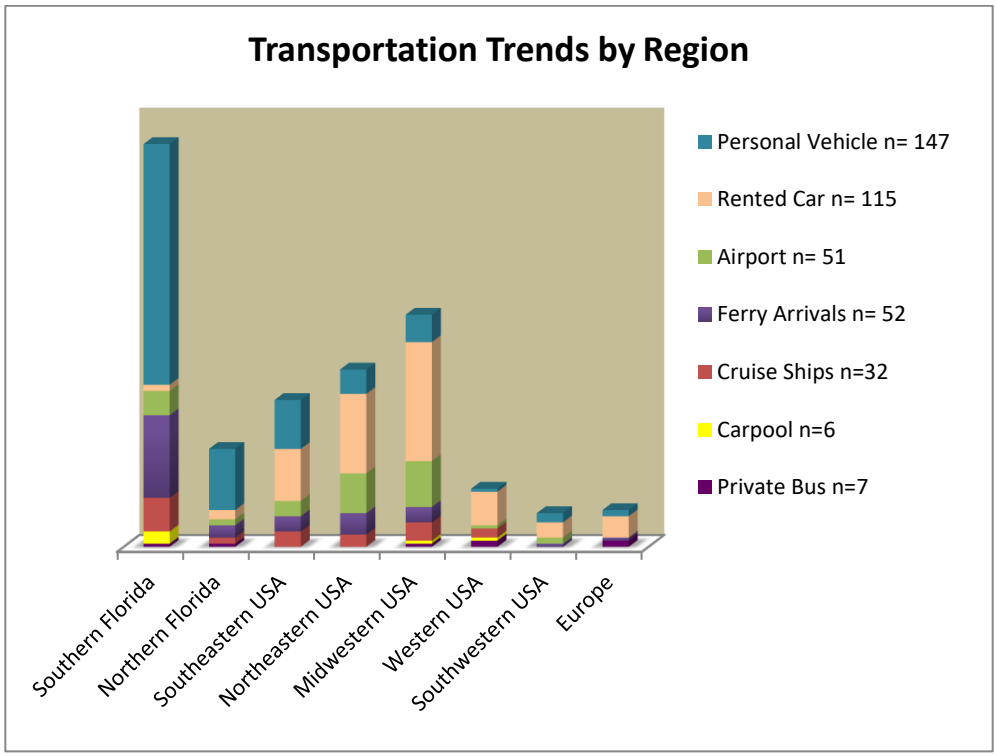


Figure 10: Transportation Trends by Region (*n*=387)

Rental vehicle choices were also found to vary over the number of visits. First time visitors are significantly more likely to rent a car than to arrive via other transportation options (*t*-test=6.71, *p*>.01, *n*=168) and repeat visitors are significantly less likely to arrive via rental car than first time visitors (*t*-test=3.5, *p*=.00, *n*=110).

Meanwhile, those who have visited Key West more than five times are significantly more likely to arrive via the Key West Airport than those that have visited fewer than five times (*t*-test=3.44, *p*=.00, *n*=51). (See Figure 11)

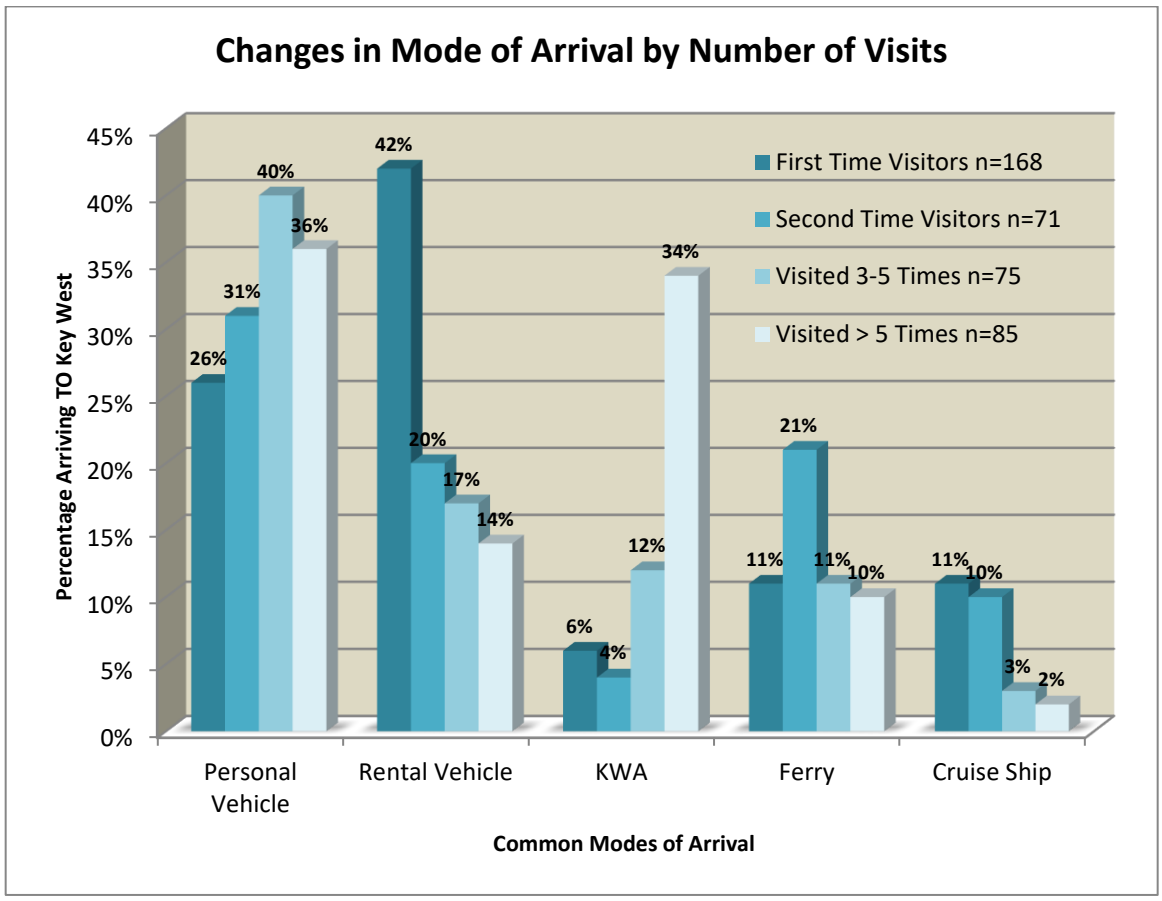


Figure 11: Repeat visits impact on transportation choices (*n*=399)

9. Who is not responsible for car traffic?

For this question, the characteristics of those who are not responsible for car traffic are explored. As can be seen in Figure 12, across all visitors, visiting any number of days from one to greater than 10, 32% reported not having used a personal or rental vehicle at all during their visit.

Figure 13 is a breakdown of how non-vehicle users arrived to the island. Over half of non-vehicle users arrived by either the Key West Express Ferry (31%) or the Key West Airport (24%).

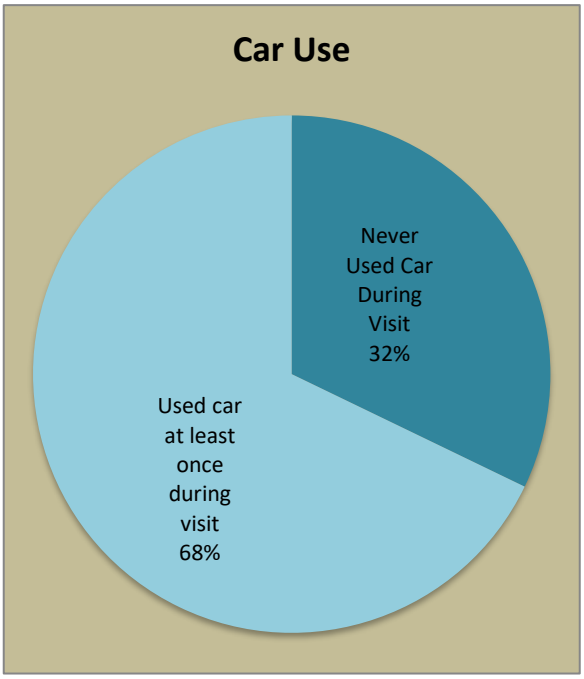


Figure 12: Car Use (*N*=398)

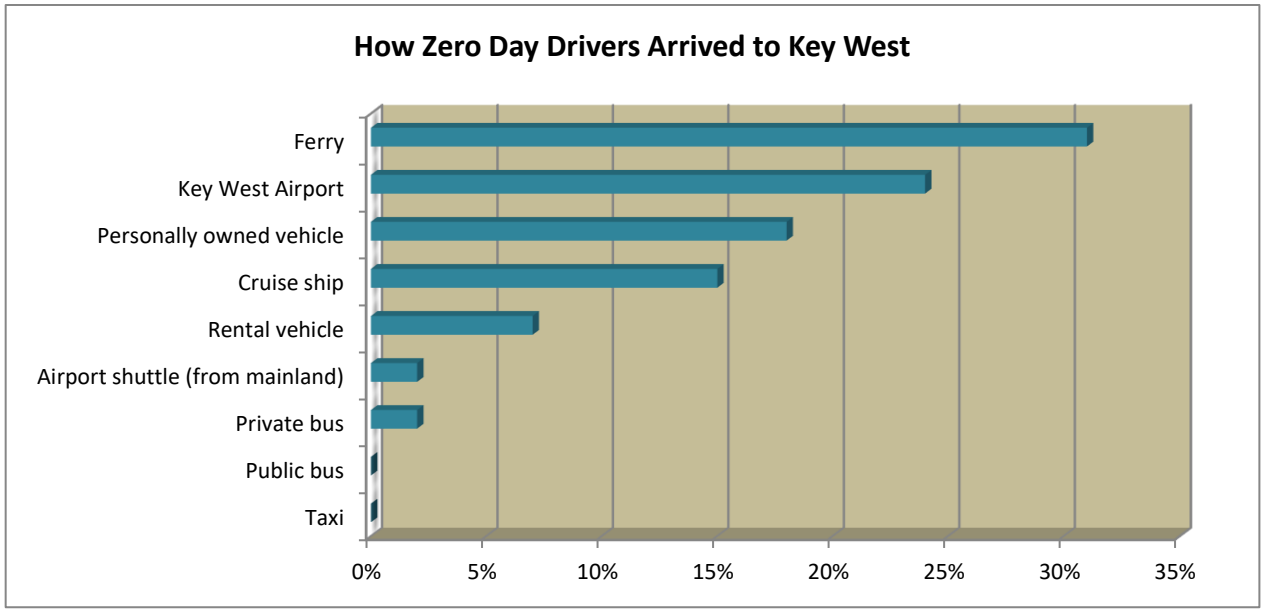


Figure 13: How Zero Day Drivers Arrived to Key West (*n*=129)

10. Who are the priority groups for reducing car traffic?

- What options are car drivers willing to consider?
- Where are those who would consider other options from?

Figure 14 is an illustration of the 398 completed survey responses collected from the question "What is or was your primary form of transportation while visiting Key West?" As can be seen in Figure 14, 49.4% of respondents selected *Walking*, while only 15.1% selected *Privately owned vehicle*, and 11.9% selected *Rental Vehicle*.

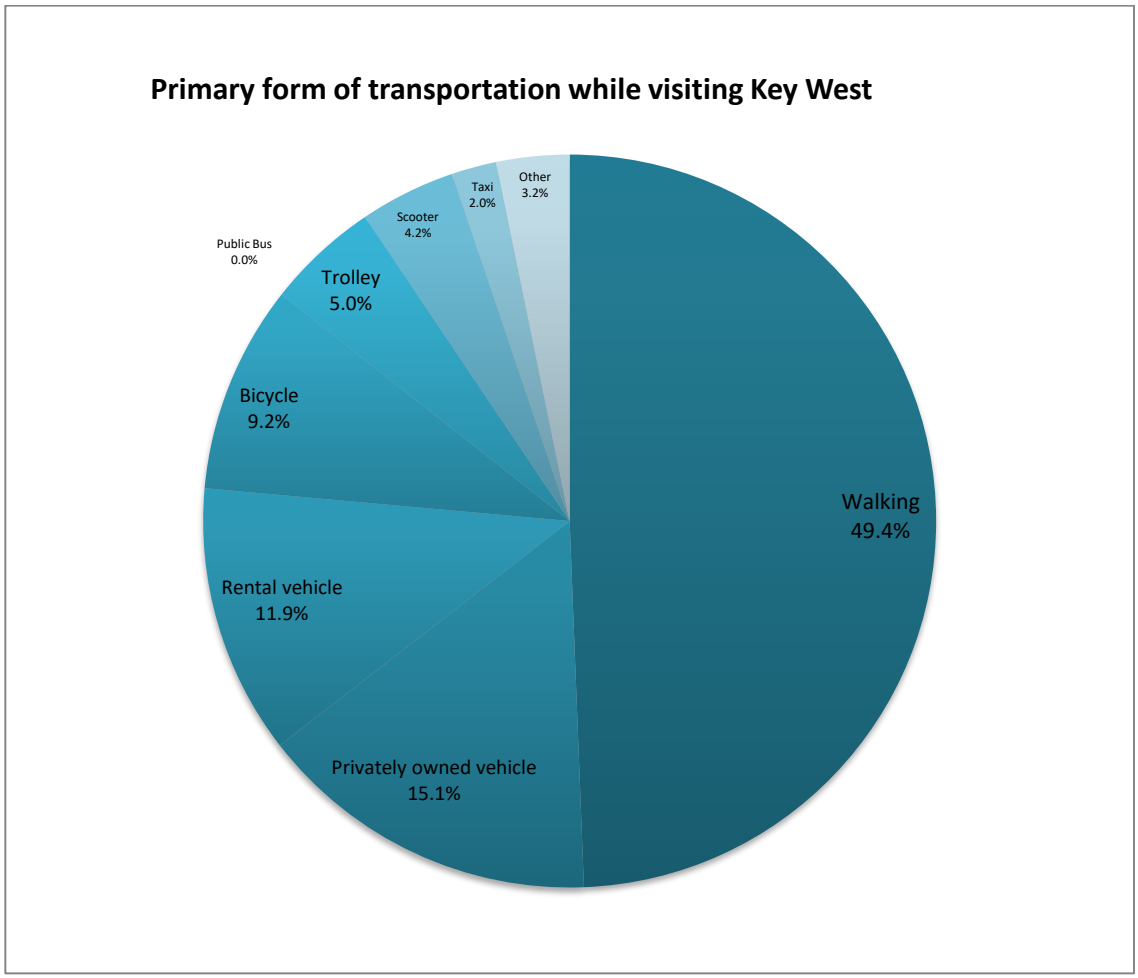
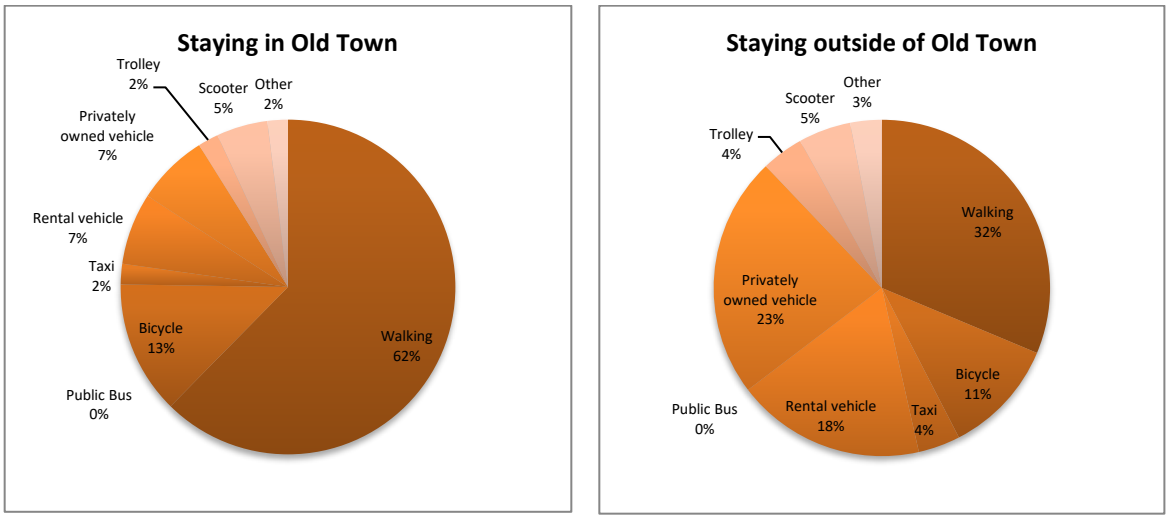


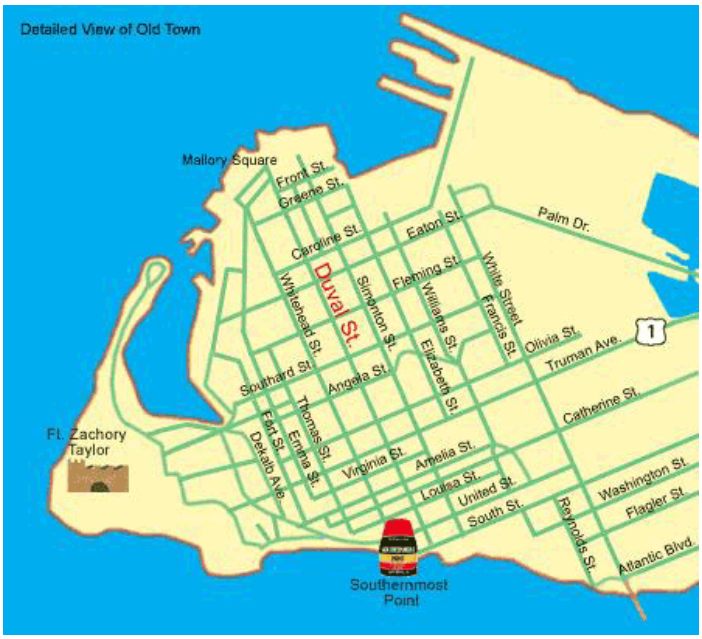
Figure 14: Primary Form of Transportation during visit (N=398)

While 66% of visitors in this study arrived with a vehicle, only 27% reported using that vehicle as their primary form of transportation during their visit. The location of visitors accommodations appear to have an effect on their primary mode of transportation during their visit, as illustrated in Figures 15a & 15b.



Figures 15a & 15b:
Location of Accommodations Impact Transportation Behavior (n=284)

Note that only the 284 survey participants staying somewhere on Key West are included in Figures 15a & 15b. Day-trippers, cruise ship arrivals, etc. are not included here. Key West's 'Old Town' is synonymous with 'downtown' and generally refers to the westernmost portion of the island, with Mallory Square at its northern point, the Southernmost Point Buoy at its southern point, and Duval street at its central axis.



As illustrated in Figures 15a & 15b, 62% of Old Town visitors reported *Walking* as their primary form of transportation, while only 32% of visitors outside of Old Town did. Perhaps more important for our purposes, only 7% of those staying in Old Town reported their personal vehicle as their primary form of transportation, while 23% of those outside of Old Town reported their personal vehicle as their primary form of transportation, placing those staying outside of Old Town as greater contributors to car traffic, and therefore a priority group for reducing car traffic.

As was mentioned in research question #8 (*Who is responsible for car traffic?*), a disproportionate number of personal vehicle drivers (56%) are from southern Florida, making southern Florida visitors another priority group to consider. The following figure illustrates the modes, other than personal vehicle, that visitors arriving from southern Florida would consider arriving by next trip. Of the 79 participants that drove a personal vehicle from Southern Florida, 39% said they would consider arriving by ferry for their next trip, and 29% said they would consider arriving via the Key West Airport. (See Figure 16)

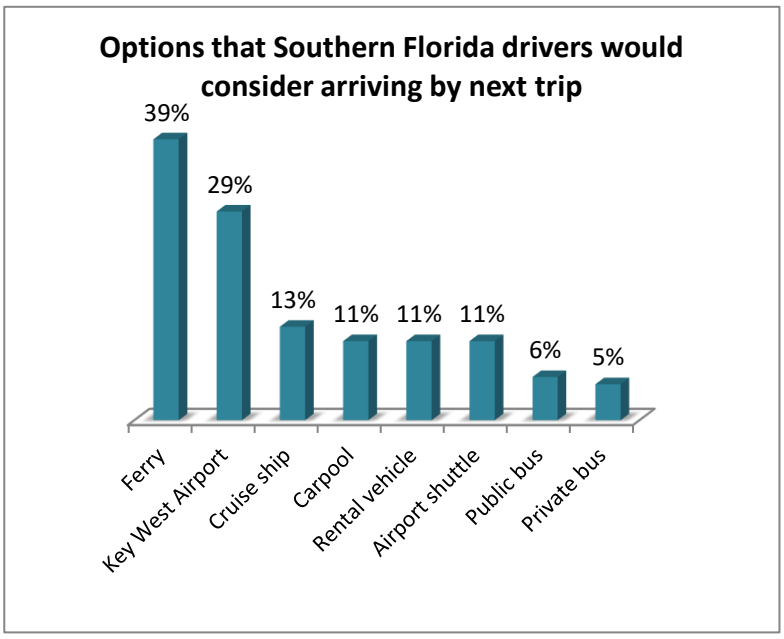
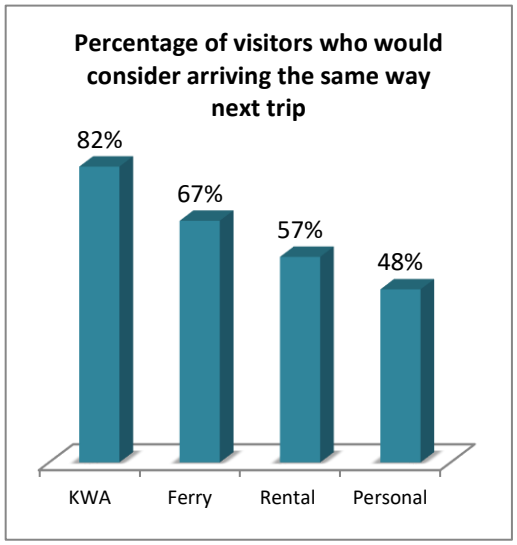


Figure 16: Options drivers from Southern Florida would consider (n=79)



As Figure 17 illustrates, visitors do not always consider repeating their transportation choices. Figure 17 compares how tourists arrived this time and how they would consider arriving next time. Although these questions were not specifically meant to imply satisfaction, some satisfaction implications may exist when a visitor arrives using a certain form of transportation but would not consider using that same form for a return visit.

Figure 17:
Satisfaction as indicated by considerations for next trip
(n=365)

5 Discussion and Interpretation of Findings

5.1 Discussion discussed

All discussion and interpretation of this data should be assumed to include the phrase "for tourists surveyed in this research". Only data from participants in this survey is being referenced in this analysis, and no claims are being made as to the representativeness of this sample. For simplicity and practicality, this discussion will primarily focus on the differences among the top five arrival types – personal vehicle, rental vehicle, airport, ferry, and cruise ship. Only 4% of survey participants 'arrived to' Key West using modes other than these five, and only a combined 14% 'would consider' *any* of the other six modes of arrival. Table 2 compares the arrival mode of participant from the 2013 TDC research and the data from this survey.

Table 2: Comparison of 2013 TDC Data and this 2016 Data

	2013	2016
Personal Vehicles	26%	37%
Rental Vehicles	56%	29%
Key West Airport	6%	13%
Ferry	NO DATA	13%
Cruise Ship	NO DATA	8%

5.2 Incentives and Disincentives

According to McKenzie-Mohr (2011), in order to foster sustainable behavior, one has to study the barriers, benefits, and social norms of their audience before finding the right set of incentives and disincentives. In order for future planning to be effective, appropriate incentives must be paired with the barriers identified (McKenzie-Mohr, 2011).

In this survey, the most highly rated **barriers** to using public transportation were the challenges of *Having to wait around* (M=2.91, SD=.95) and *Coordinating different schedules* (M=2.89, SD=.96). These results appear to be in line with the highly rated **incentives** of *Convenient Public Transportation* (M=2.95, SD=.97), and *Hotel Shuttle to and from Old Town* (M=2.95, SD=1.03). Visitors to Key West do not want to wait around

or have to think too hard about how to get around; they want their transportation options to be convenient and frequent.

As anticipated by the research of Gardner & Abraham (2007), driving provides people the perception of control and public transit is viewed as restrictive to personal freedom. Both of these **barriers** were found to factor into tourist perceptions in this research. *Lack of freedom to do as one pleases* (M=2.73, SD= 1.05) rated third among the challenges of using public transportation. For drivers of personal vehicles, *Freedom to do as you please* was rated the number one reason for driving to Key West, receiving the highest mean score of M=3.4 (SD=.93). For rental vehicle drivers, *Freedom to do as you please* tied with *The drive is scenic* for the number one reason for driving to Key West (M=3.2, SD=.98).

Meanwhile, *Monetary cost* was rated as *Not at all Challenging* by 41% of participants, and received the lowest mean score of M=1.87 (SD=.94). It is difficult to reconcile this low rating of *Monetary cost* as a **barrier** with the most highly rated **incentive** of *Free Public Transportation*. It seems that while added cost is the weakest deterrent to public transportation, offering free public transportation is perceived to be the most effective **incentive** for increasing ridership.

Overall, tourist beliefs about car-free travel were overwhelmingly positive, as illustrated in Figure 6. All aspects of car-free travel listed were most frequently rated as *Extremely Beneficial*. The most highly rated among these benefits were *Avoid having to find parking* (M=3.58, SD=.79), *Avoid parking fees* (M=3.49, SD=.85), and *Avoid drinking and driving* (M=3.38, SD=1.01).

Overall, disincentives were rated in the *somewhat* to *moderately effective* range. The mean scores of all disincentives fell between M=2.33 and M=2.52. It is worth noting that personal vehicle drivers rated disincentives as significantly less effective compared to all other groups. On their own, disincentives such as parking fees and tolls would do little to reduce car arrivals.

5.3 Priority groups

As illustrated in Figure 3, of the top five modes tourists use to arrive on the island, there are only two modes that were 'considered' more frequently than they were used. Those are the Key West Airport and the Key West Express ferry. Given this difference, we can assume that a significant portion of those who considered either of these options ultimately decided on a different option. The follow-up question to *what was considered before arrival?* was the question *what options would you consider arriving by next trip*? Both personal vehicle and rental vehicle drivers showed strong consideration for using the airport next trip, as respectively 37% and 31% 'would consider' it. Similarly, 27% of personal vehicle drivers 'would consider' the ferry next trip. (See Figure 4)

Following those considerations, let's take a closer look at who is ***not*** responsible for car traffic. Of those arriving to the Key West Airport, 67% answered that they did not use a car at all during their visit. For the Key West Express arrivals, 78% answered that they did not use a car at all during their visit. Before we go further, a potential concern with these percentages will be addressed. Some may wonder if ferry and airport arrivals are visiting for only one or two days. To assuage this concern, Table 3 illustrates the number of days that "zero day drivers" were visiting. As you can see, there are "zero day drivers" across the board, visiting from one to seven days. In fact, almost 20% of airport arrivals were zero day drivers at the seven day mark.

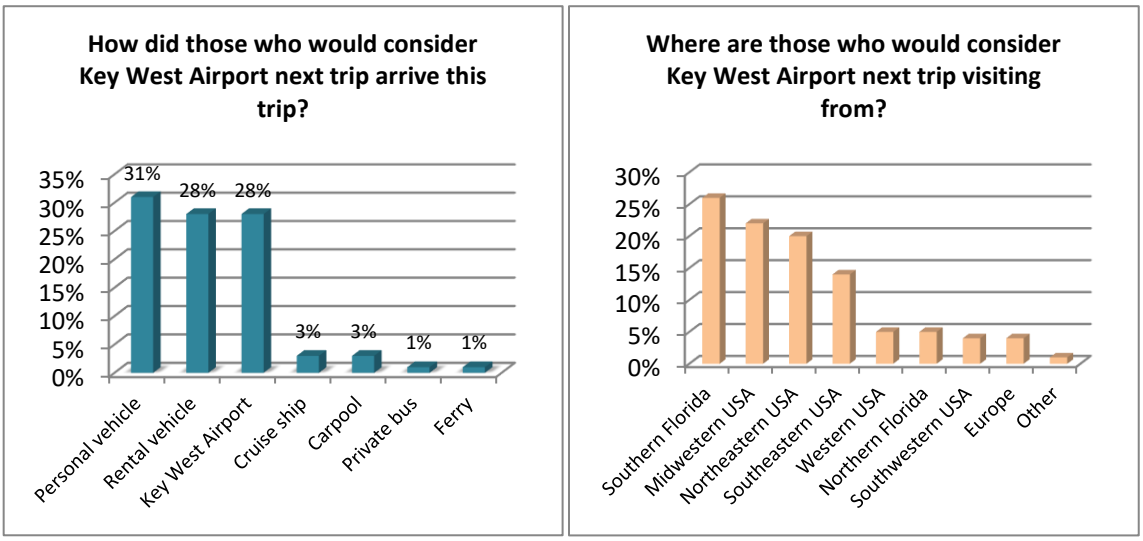
Table 3: Zero Day Drivers - Number of Days Visiting (Ferry *n*=39, KWA *n*=31)

Number of Days Visiting	1	2	3	4	5	6	7
Ferry arrivals that used car ZERO times	13%	31%	33%	15%	8%	0%	0%
Airport arrivals that used car ZERO times	19%	0%	0%	16%	16%	6%	19%

Many visitors considered the airport and ferry. It appears that those who actually choose these options were less likely to use a vehicle during their visit when compared to other arrival types. This brings us to these questions: *How can we get more tourists to arrive via these modes? Is there a priority group that may be more easily persuaded to choose these options?* Next, the considerations of those who arrived with a vehicle will be reviewed.

One priority group to consider is visitors from Southern Florida. This group is responsible for 56% of personal vehicles brought to the island (see Figure 10). Fortunately, of those who drove personal vehicles from Southern Florida, 39% indicated that they *would consider* arriving by ferry for their next trip and 29% said they *would consider* the Key West Airport (see Figure 16).

Both airport and ferry arrivals are less likely to use cars during their visit when compared to personal vehicle and rental vehicle drivers (see Figure 13). In Figure 18a below, you can see that of those who would consider arriving via the Key West airport next trip, 31% arrived via personal vehicle and 28% arrived via rental vehicle. Figure 18b illustrates that 26% of those who *would consider* the Key West Airport are visiting from Southern Florida, and 22% are visiting from the Midwest. Recall from Figure 10 that Midwestern visitors are responsible for 35% of all rental cars on the island.



Figures 18a &18b: Characteristics of those considering Key West Airport (*n*=140)

Geographically, priority groups for driving reduction would be the 56% of personal vehicles drivers who are visiting from Southern Florida and the 35% of rental vehicle drivers who are visiting from the Midwest. Those two groups are, according to this research, responsible for an inordinate amount of cars on the island. Fortunately, both groups indicated that they *would consider* arriving via the airport for their next trip. (See Figure 18b) And 39% of Southern Florida drivers *would consider* the ferry for their next trip to the island. (See Figure 16)

5.4 You don't need a car OR Knowledge of repeat visitors

There is substantial evidence from this survey data to indicate that a vehicle is not necessarily needed once visitors arrive on the island. While 49% of total visitors report *Walking* as their primary form of transportation while visiting, 32% of total visitors report not using a vehicle at all during their stay. The lack of need for a vehicle can also be indicated by the changing trends with repeated visits. While 42% of first time visitors rent a vehicle for their stay, the percentage drops to 20% by only the second visit. Meanwhile, airport arrivals, 67% of whom did not use a car at all during their stay, become more popular over the number of visits. Airport arrivals rise from only 6% for first time visitors to 34% for visitors who have visited greater than five times (See Figure 11). This brings us back to a question mentioned in the Problem Statement earlier: *What might it take to convey the knowledge of repeat visitors to first time visitors?*

6 Recommendations

The following recommendations are based on the CMSM strategies outlined by Dr. McKenzie-Mohr (2013). Throughout this research, the behavior selected to change was arriving by vehicle to Key West. The barriers and benefits were evaluated through survey research and are outlined in the previous two sections. Here, we seek to develop strategies based on barriers to public transportations, benefits of car free travel, the potential effectiveness of various incentives and disincentives, and as well as other results provided by this survey.

The recommendations outlined in the following text combine the results uncovered in this paper with creative problem solving. They include: a coordinated effort for effective car free marketing to priority groups, promotions and discounts for modes of transportation that are likely to provide visitors who are unlikely to use cars during their visit (Key West Airport and Key West Express Ferry), and the development of public transportation systems that meet the desires of tourists. These recommendations are designed to reduce the barriers and increase the benefits that tourists perceived in this research. A monitored pilot program would be needed to evaluate their effectiveness.

6.1 Marketing

Proper marketing and promotion could dissuade those accustomed to driving to the island to consider other modes. It is clear from these survey results that Key West visitors see the value of car-free travel. While all aspects of car-free travel were most frequently rated as *Extremely Beneficial*, the most highly rated among these benefits were *Avoid having to find parking* (M=3.58, SD=. 79), *Avoid parking fees* (M=3.49, SD=. 85), and *Avoid drinking and driving* (M=3.38, SD=1.01). Perhaps these benefits could be emphasized with a marketing angle along the lines of *Car-free is Carefree* (Idea Credit: Key West Transportation Coordinator, Christopher Hamilton). Working under the assumption that those seeking an island vacation desire few hassles and headaches, perhaps convincing them that their visit will be more enjoyable, perhaps even cheaper, without a vehicle could be a successful marketing angle.

6.2 Increase Ridership of Key West Express Ferry

While it is clear from the data that people *did* and *would* consider both the Key West Airport and the Key West Express Ferry, I can only offer anecdotal evidence as to why those options were ultimately not chosen.

A handful of visitors expressed to me something along these lines "We looked into the ferry, but there are *six* of us. It's just too expensive if you have that many people." It is difficult to argue with that point. For example, if we consider the round trip fares of two adults, three children, and one senior, before tax the total price would be $731. If we compare that to the cost of driving a car, even after accounting for gasoline, taxes, insurance, and depreciation, car driving is still going to be significantly less costly. The ferry does an excellent job of promoting itself as 'an experience unto itself' – with the slogan *Where getting there is half the fun!* Perhaps they could incorporate another marketing angle that emphasize the benefits of car free travel and the barrier of the added costs of having a vehicle once on the island.

If we assume that cost is the largest obstacle for those that ultimately did not choose the ferry (but were in a geographic position to consider it) we should examine how to reduce the barrier of cost. Could the ferry offer discounted rates during their slowest weeks of the year? Or could they offer last minute rates for those booking within 24 hours of departure? At present, the ferry terminal has relatively high parking rates. Would ridership increase if parking fees were reduced or eliminated **and** the high cost of parking on Key West were emphasized?

Perhaps in a coordinated effort to reduce car traffic, the city could work with the Key West Express to increase ridership and thereby decrease car arrivals to the island. In future multi-modal transportation plans for the island, perhaps the city could guarantee frequent stops at the ferry terminal or some other appealing compromise.

Another frequent, yet still anecdotal, explanation I was given about ferry ridership was the difficultly in coordinating schedules between the Ft. Meyers Airport and the Ft. Meyers

ferry terminal. One might make the incorrect assumption that ferry riders are overwhelmingly from southern Florida. While it is true that 54% of ferry riders are from southern Florida, and another 8% are from northern Florida, that leaves 38% of ferry users traveling from elsewhere. I heard from more than one ferry user that because of the Key West Express schedule, they had to stay with a friend or family member in the Ft. Meyers area. Similarly, I heard from more than one ferry non-user that the reason they did not take the ferry was because it left too early for them to arrive at the terminal straight from the airport. Basically, as it stands, the KWE schedule does not accommodate airport arrivals or departures, because it leaves too early and returns too late. Perhaps as the ferry business grows, it will run multiple routes a day instead of its current single trip per day. Perhaps a coordinated effort with Ft. Meyers International Airport would be useful in coordinating schedules between the ferry and the airport, or offering vacation packages to visitors utilizing both transportation modes.

6.3 Increase Ridership of Key West International Airport

Through similar efforts outlined in the above section, increasing the percentage of Airport arrivals would be helpful to the overall goal of reducing cars on Key West. The airport received he highest satisfaction rating of all of the current transportation choices (82%). When considering priority groups, southern Florida (33%) and the Midwest (19%) combined account for over half of visitors to Key West. Fortunately, 26% of southern Florida visitors and 22% of Midwesterners said they *would consider* the Key West International Airport next trip. It is worth noting once again that 67% of visitors who arrive via the airport reported not using a vehicle at all during their visit.

From speaking with visitors about this consideration, I heard one very common explanation about why they did not arrive via the airport: cost. As outlined in the above section, particularly for those from southern Florida, there is simply no cheaper way to arrive than by personal vehicle. This is where CBSM strategies need to be considered. *How could the benefits of car free travel surpass the barrier of the additional cost of airport travel*? To increase the number of airport arrivals, perhaps the airport could employ effective marketing that illustrates the lack of need for a car. Perhaps the perceived barrier of cost is

great enough that promotions and discounts could be offered as well. During the "off-season" last minute promotions that would fill planes or Florida resident discounts could be offered. Of course, some strategy would need to be developed to make up for any loss of revenue, be it through increased taxi service or offering a subsidy of some sort.

If the information contained in this report is in fact disseminated at the Southeast Florida Regional Climate Compact summit (as intended), perhaps members of that coalition can brainstorm on increasing ridership for the Key West International Airport. Some known limitations include the smaller size, and therefore capacity, of planes that are allowed to land on the airports' short runway. A brainstorming session with that group of experts may be the best 'next step' in the islands effort to reduce car arrivals to Key West.

6.4 Once on island – give tourists the public transportation options they want

What do tourists want in public transit?

Finally, after marketing and promotion of a car free arrival, it is important to consider what tourists are hoping for in a public transportation system after arriving *on* island. According to this study, the most important considerations are easy to understand transportation schedules and not having to wait around. Future transportation systems should have simple schedules and arrive with high frequency. *Freedom to do as one pleases* is limited by slow and difficult to coordinate public transportation schedules. A downtown circulator or a greater number of hotel shuttles would prevent tourists from having to wait more than 15 minutes. As was illustrated in question #10, visitors staying in Old Town more commonly rate walking as their primary form of transportation when compared to those staying outside of Old Town. In future multimodal plans, this is a factor that may need to be considered – and an "downtown circulator" may be more effective at reducing car traffic if it actually reaches the outskirts of what is considered "downtown".

If a "most frequently asked questions" section were a requirement of this report, I would have to offer, anecdotally, that *dozens* of tourists that participated in this survey asked about or mentioned Uber. Many would say they used it at home, most would say that Uber was

convenient, user friendly, or efficient. Then I would explain, with great brevity, that Uber might be the most hotly debated transportation topic on Key West in 2016. While Uber is currently banned from the island, it may be possible to improve current taxi system to emulate Uber in some ways. The Uber system is very efficient. Riders can chose to share rides, monitor the GPS location of their ride to know exactly how close it is, and the app insures that you always get the taxi which is closest to you. These were all points mentioned by visitors with whom Uber was discussed. A personal observation is that with Uber, users can also choose the quality of their taxi. Many of the taxis on Key West are older minivans or pink SUVs. Some visitors may choose to drive their personal vehicles on island merely because of the low quality of the taxis available. Many visitors are accustomed to using Uber at home. Even without allowing Uber on the island, there are numerous improvements that could be made to the current system, such as a user-friendly app or improved vehicle quality. Many Key West visitors in 2016 are accustomed to using apps and live in an on-demand world. Denying tourists what they want is not likely to serve taxi drivers, whose livelihoods depend on those tourist dollars, for much longer.

It may be worthwhile to mention the moderate effects of disincentives listed. According to this data, a strong case cannot be made for the effectiveness of the disincentives included in this survey (parking fees and tolls). The city of Key West may consider raising their parking rates in order to provide funding for alternative transportation. It appears that with the overall moderate effect of a parking rate increase, and its even lesser effect on personal vehicle drivers, there may be significant wiggle room to increasing parking rates before an increase would actually cut down on parking spot use. Meanwhile, the increase in revue could help to provide the city with the cheap and convenient public transit systems that tourists desire.

6.5 Final Notes

Please keep in mind that at this point, we are not making recommendations on how to eliminate cars altogether, as that is a feat far to large for the scope of this research and beyond the timeline available to this researcher. The recommendations described here are

for immediate changes (1-5 years) that do not require large infrastructural investments.

Following these recommendations, we can hope to reduce car traffic by discouraging 1% to 5% of drivers at most. At certain times of year, the island is functioning *beyond its carrying capacity* (Insights, Inc., 2013). A small reduction in traffic may simply move the city down to *at capacity*, at which point more and greater changes will be needed to plan for the future.

Lastly, it will take a concerted effort of partners and stakeholders for any of these recommendations to be successful. Policy, education, and enforcement all have a role, as do vocal community members interested in improving quality of life on the island.

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Appendix

Qualitative Survey:

Interview Survey

Seeking: exactly which options would work best, which message would be most motivating and where to place that message.

1. What has been your primary form of transportation while visiting?
2. Did you rent a car?
3. Is this your first visit?
4. Before arriving at a destination, where do you typically look for information about transportation? Which sources do you turn to find information about how to get around town (ex. Gov. website, hotel website, travel books, etc.)
5. Why is it important to have access to a personal vehicle when you're traveling?
6. What challenges can you think of having if you did not have a personal vehicle on the island?
7. Can you think of any benefits to not bringing a personal vehicle to the island?
8. If you had family or friends visit Key West previously, do you know if they brought a car? Did this influence your decision to bring a personal vehicle/car to the island? How?
9. If you were asked to convince a family member or friend not to drive a personal vehicle to Key West, what would you tell them? What would be most motivating?
10. Using public transportation in Key West has the following potential benefits. Please place a check next to any potential benefits that would make you more likely to use public transportation:

    _____ A. Avoid parking fees
    _____ B. Avoid traffic
    _____ C. Protect the Keys fragile environment.
    _____ D. Get closer to attractions and dining than car parking could bring you.
    _____ E. Avoid drinking and driving
    _____ F. Relax and let someone else do the driving
    _____ G. Prevent road congestion.

DEMOGRAPHICS:

What is your age in years? _____

Where are you from?

How did you travel from there to Key West?

How many days are you here? How many of those days did you use a car?

Where did you stay during your visit?

Observations: Male / Female / Other Walking / Bicycling / Wheelchair

Quantitative Survey:

Car-Free

Thank you for your willingness to participate in this survey. Through graduate student research, The Patel College of Global Sustainability at USF and the City of Key West are coordinating to help Key West promote "Car-Free" initiatives. Your responses are extremely valuable to this research. We truly could not do it without you :)

Please read each question carefully, as some questions are asking about transportation TO the island and others are asking about transportation once ON the island. Many first-time visitors to Key West are hesitant to arrive without a rental or personal vehicle, although the island is relatively small and offers many affordable and convenient options. We are interested in learning how to convey this information to first-time visitors before they arrive on the island. We estimate that these 14 questions will take you around 5 minutes to complete.

NOTE: This survey is meant only for current and former visitors to Key West, not residents. Thank you.

Q1 What is or was your primary form of transportation while visiting Key West?
- ❍ Walking (1)
- ❍ Bicycle (2)
- ❍ Taxi (3)
- ❍ Rental vehicle (4)
- ❍ Privately owned vehicle (5)
- ❍ Public Bus (6)
- ❍ Trolley (7)
- ❍ Scooter (8)
- ❍ Other (9) _____

Q2 Did you rent a car for your visit?
- ❍ Yes (1)
- ❍ No (2)

Answer If Did you rent a car for your visit? Yes Is Selected

Q2B From which location did you rent your car?
- ❍ Miami Airport (1)
- ❍ Key West Airport (2)
- ❍ Ft. Lauderdale Airport (3)
- ❍ Other (4) _____

Q3 Select any of the following sources you used to get information about Key West transportation options:

	Before arriving (1)	During visit (2)
City of Key West website (cityofkeywest-fl.com) (1)	❑	❑
Key West Chamber website (keywestchamber.org) (2)	❑	❑
Keys Tourism Council (fla-keys.com) (3)	❑	❑
TripAdvisor (4)	❑	❑
Booking website (travelocity, orbitz, booking, etc.) (5)	❑	❑
Airport website (6)	❑	❑
My Hotel (7)	❑	❑
Friends/Family (8)	❑	❑
Travel agent (9)	❑	❑
Did not explore transportation options (10)	❑	❑
Other (11)	❑	❑

Q4 Which do you think would be the best way of getting information to first-time visitors to Key West BEFORE ARRIVING?

- ❍ City of Key West website (cityofkeywest-fl.com) (1)
- ❍ Key West Chamber website (keywestchamber.org) (2)
- ❍ Keys Tourism Council (fla-keys.com) (3)
- ❍ TripAdvisor (9)
- ❍ Booking website (travelocity, orbitz, booking, etc.) (4)
- ❍ Airport website (5)
- ❍ Guest Hotels (6)
- ❍ Travel agencies (7)
- ❍ Other (8) _____

Answer If Which do you think would be the best way of getting information to first-time visitors to Key West BEFORE ARRIVING? Travel website (travelocity, orbitz, booking, etc.) Is Selected

Q4B Which travel websites do you use most often?

Q5 Regarding your arrival TO Key West for your current or most recent visit:

	I actually arrived TO Key West using this mode of transportation: (1)	I considered arriving TO Key West using these options: (2)	I would consider arriving TO Key West using this option for my next trip: (3)	I would never consider using this option to travel TO Key West: (4)	I was not aware that this option was available to travel TO Key West: (5)
Rental vehicle (1)	❑	❑	❑	❑	❑
Personally owned vehicle (2)	❑	❑	❑	❑	❑
Key West Airport (3)	❑	❑	❑	❑	❑
Airport shuttle (from mainland) (4)	❑	❑	❑	❑	❑
Public bus (5)	❑	❑	❑	❑	❑
Private bus (6)	❑	❑	❑	❑	❑
Cruise ship (7)	❑	❑	❑	❑	❑
Carpool (8)	❑	❑	❑	❑	❑
Ferry (9)	❑	❑	❑	❑	❑
Taxi (10)	❑	❑	❑	❑	❑
Bicycle (11)	❑	❑	❑	❑	❑
Other (12)	❑	❑	❑	❑	❑

Q6 Regarding your current or most recent stay ON Key West:

	I actually used these options DURING my visit (1)	I considered using these options to get around BEFORE I arrived to the island (2)	I considered using these option to get around DURING my visit (3)	I would consider using these option during my next visit (4)	I would never consider using these option (5)	I am not aware of these option (6)
Walking (1)	❑	❑	❑	❑	❑	❑
Bicycle (2)	❑	❑	❑	❑	❑	❑
Taxi (3)	❑	❑	❑	❑	❑	❑
Rental vehicle (4)	❑	❑	❑	❑	❑	❑
Privately owned vehicle (5)	❑	❑	❑	❑	❑	❑
Public Bus (6)	❑	❑	❑	❑	❑	❑
Trolley (7)	❑	❑	❑	❑	❑	❑
Scooter (8)	❑	❑	❑	❑	❑	❑
Bike-taxi (10)	❑	❑	❑	❑	❑	❑
Other (9)	❑	❑	❑	❑	❑	❑

Q7A For how many days are you visiting (or did you visit) Key West?

- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)
- ❍ 10+ (11)

Q7B Out of the total number of days indicated in the previous question, how many of those days do you plan to (or did you) use a personal or rental vehicle?

- ❍ 0 (1)
- ❍ 1 (1)
- ❍ 2 (2)
- ❍ 3 (3)
- ❍ 4 (4)
- ❍ 5 (5)
- ❍ 6 (6)
- ❍ 7 (7)
- ❍ 8 (8)
- ❍ 9 (9)
- ❍ 10 (10)
- ❍ 10+ (11)

Q8 Where are you staying tonight (or where did you stay for the majority of your trip)?

- ❍ Old Town/Downtown Key West (1)
- ❍ Outside of Old Town/Downtown but still on Key West (2)
- ❍ One of the other Keys (3)
- ❍ Miami (4)
- ❍ Another part of Florida (5)
- ❍ Cruise Ship (6)
- ❍ Other (7) _____

Q9 Including your current visit, how many times have you visited Key West?

- ❍ Once (1)
- ❍ Twice (2)
- ❍ Three to five times (3)
- ❍ Who's counting?! (Five and up) (4)

Q10A During your current or most recent visit, how many other people did you travel with?
_____ Number of people I traveled with (excluding self) (1)

Q10B How many of your fellow travelers are (or were) under 18?
_____ Number of people I traveled with under 18 (1)

Q11 Do you use public transportation (i.e. bus, rail, train, subway, etc.) at home?
- ❍ Yes (1)
- ❍ No (2)

Answer If Do you use public transportation (i.e. bus, rail, train, subway, etc.) at home? Yes Is Selected

Q11B Which types of public transportation do you use?
- ❑ Bus (1)
- ❑ Ferry (2)
- ❑ Passenger Train (3)
- ❑ Light Rail or Tram (4)
- ❑ Streetcar or Trolley (5)
- ❑ Rapid Transit (i.e. subway, underground, metro, etc.) (6)
- ❑ Other (7) _____

Q12A How accurately do the following describe your reasons for DRIVING TO Key West: (if you did not drive this trip, feel free to answer hypothetically, answer for a previous trip, or skip)

	Slightly describes my feelings (1)	Moderately describes my feelings (2)	Mostly describes my feelings (3)	Strongly describes my feelings (4)
The drive is scenic (1)	❍	❍	❍	❍
Driving reduces total travel time (2)	❍	❍	❍	❍
Driving is convenient, requiring no extra effort (3)	❍	❍	❍	❍
Driving is safer than other options (4)	❍	❍	❍	❍
Driving offers the freedom to do as one pleases (5)	❍	❍	❍	❍
Driving can be cheaper than public transportation (6)	❍	❍	❍	❍
If you drive, you will avoid being stranded (7)	❍	❍	❍	❍
Other (8)	❍	❍	❍	❍

Q12B How challenging are the following potential challenges to using PUBLIC TRANSPORTATION?

	1 - Not at all Challenging (1)	2 (2)	3 (3)	4 - Extremely Challenging (4)
Lack of freedom to do as one pleases when compared to personal vehicle (1)	❍	❍	❍	❍
Having to wait around (2)	❍	❍	❍	❍
Coordinating different schedules (3)	❍	❍	❍	❍
Monetary cost (4)	❍	❍	❍	❍
Lack of reliability (5)	❍	❍	❍	❍
Learning a new and unfamiliar system (6)	❍	❍	❍	❍
Increased total travel time (7)	❍	❍	❍	❍
Lack of personal space (8)	❍	❍	❍	❍
Other (9)	❍	❍	❍	❍

Q12C How beneficial are the following features of CAR-FREE traveling:

	1 (1)	2 (2)	3 (3)	4 (4)
Avoid having to find parking (1)	❍	❍	❍	❍
Avoid parking fees (2)	❍	❍	❍	❍
Avoid traffic (3)	❍	❍	❍	❍
Avoid drinking and driving (4)	❍	❍	❍	❍
Help the environment (5)	❍	❍	❍	❍
Get closer to attractions and dining than in a car (6)	❍	❍	❍	❍
Let someone else worry about driving (7)	❍	❍	❍	❍
Other (8)	❍	❍	❍	❍

Q12D How challenging are the following features of DRIVING A CAR on Key West:

	1 - Not at all challenging (1)	2 (2)	3 (3)	4 - Extremely Challenging (4)
Finding a place to park (1)	❍	❍	❍	❍
Parking fees (2)	❍	❍	❍	❍
Traffic congestion (3)	❍	❍	❍	❍
Potential for drinking and driving (4)	❍	❍	❍	❍
Rental cars are an added expense (5)	❍	❍	❍	❍
Having to have a designated driver (6)	❍	❍	❍	❍
Not being able to park close enough to attractions and dining (7)	❍	❍	❍	❍
Remembering where car is parked on unfamiliar streets (8)	❍	❍	❍	❍

Q13 If the following INCENTIVES or options existed, how affective would they be at discouraging you from bringing a car TO Key West?

	Not affective at all (1)	Somewhat affective (2)	Moderately affective (3)	Extremely affective (4)
Hotel discounts for arriving without a vehicle (1)	❍	❍	❍	❍
Scooter or Bike rentals available at hotel (2)	❍	❍	❍	❍
Free public transportation (3)	❍	❍	❍	❍
Restaurant discounts for arriving without a vehicle (4)	❍	❍	❍	❍
Fun public transportation (ex. party bus) (5)	❍	❍	❍	❍
Attractions discounts for arriving without a vehicle (6)	❍	❍	❍	❍
Hotel Shuttle to and from Old Town/Downtown (7)	❍	❍	❍	❍
Convenient public transportation (8)	❍	❍	❍	❍
Bike-share (9)	❍	❍	❍	❍
Car-share (10)	❍	❍	❍	❍
Uber/Lyft (11)	❍	❍	❍	❍
More Taxis in general (12)	❍	❍	❍	❍
Other (13)	❍	❍	❍	❍

Q27 If the following PENALTIES existed, how affective would they be at discouraging you from bringing a car TO Key West?

	Not affective at all (1)	Somewhat affective (2)	Moderately affective (3)	Extremely affective (4)
Parking fees at hotel (1)	❍	❍	❍	❍
Parking fees elsewhere on the island (2)	❍	❍	❍	❍
Bridge toll upon arrival to Key West (3)	❍	❍	❍	❍
Other (4)	❍	❍	❍	❍

Q14A What is your age in years?

_____ Your Age: (1)

Q14B What is your gender?

❍ Male (1)
❍ Female (2)
❍ Prefer not to answer (3)

Q14C Where are you visiting from?

- ❍ Southern Florida (1)
- ❍ Northern Florida (2)
- ❍ Southeastern USA (3)
- ❍ Northeastern USA (4)
- ❍ Midwestern USA (5)
- ❍ Western USA (6)
- ❍ Southwestern USA (7)
- ❍ Europe (8) _____
- ❍ South America (9) _____
- ❍ Middle East (10) _____
- ❍ Asia (11) _____
- ❍ Other (12) _____

Q14D Which of the following most closely represents your annual household income (USD)?

- ❍ Less than $ 39,999 (1)
- ❍ $40,000 - 79,999 (2)
- ❍ $80,000 - 119,999 (3)
- ❍ $120,000 - 159,999 (4)
- ❍ More than $160,000 (5)
- ❍ Prefer not to disclose (6)

Thank you for taking the time to complete this survey. Is there anything else that you would like to share?

PCGS

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GLOBAL SUSTAINABILITY