**Technical Assistance Report** 

Evaluation of an Intelligent Transportation System for Rocky Mountain National Park and Estes Park



This document was prepared for Rocky Mountain National Park by the Paul S. Sarbanes Transit in Parks Technical Assistance Center.

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# LIST OF ABBREVIATONS

| CDOT  | Colorado Department of Transportation      |
|-------|--|
| CFLHD | Central Federal Lands Highway Division     |
| CVB   | Estes Park Convention and Visitor's Bureau |
| DMS   | Dynamic Message Sign                       |
| FCC   | Federal Communications Commission          |
| HAR   | Highway Advisory Radio                     |
| ITS   | Intelligent Transportation System          |
| Ν     | Number of Responses for Each Variable      |
| ROMO  | Rocky Mountain National Park               |

# **EXECUTIVE SUMMARY**

This document presents the results of an evaluation of a pilot intelligent transportation system for Rocky Mountain National Park (ROMO) and the Town of Estes Park. An intelligent transportation system was used to try to address congestion issues in ROMO and Estes Park as a result of visitation peaking. The deployment of the intelligent transportation system was designed and evaluated through the cooperation of ROMO, the Town of Estes Park, Central Federal Lands Highway Division, Colorado Department of Transportation, Western Transportation Institute, and the Paul S. Sarbanes Transit in Parks Technical Assistance Center. As summer is the peak visitation season for ROMO, the system was implemented during the summer of 2011. The pilot intelligent transportation system is composed of dynamic message signs and highway advisory radio. They are used in tandem to inform visitors of the availability of shuttles services and in particular, the presence of a new park-and-ride at the east end of Estes Park. Lessons learned from the pilot intelligent transportation system can be used for future intelligent transportation system deployments.

As a whole, the project was a success. ROMO became familiar with intelligent transportation systems. There was a measurable mode shift. Most visitors and stakeholders were receptive to the intelligent transportation system. Finally, ROMO gathered valuable information that can help to make future systems more successful.

Eight goals were identified by the partners through the process of developing an evaluation plan. These goals and the success of achieving them are subsequently discussed.

## • GOAL ONE: Shift visitors' travel mode from private vehicles to shuttle buses

Successful. The average Hiker Shuttle ridership during the intelligent transportation system operation was observed to be higher than predicted. An increase of 103 boardings per day occurred while the intelligent transportation system was active. That's a 34% increase in ridership! Additionally, visitor survey results reveal that of those respondents aware of the shuttles, 19% were aware due to the dynamic message signs.

## • GOAL TWO: Quantify the reductions in emissions pollution as a result of the mode shift

Successful. The intelligent transportation system resulted in the removal of an estimated twentynine vehicles per day from the roadway. The removal of these vehicles was associated with the reduction of sixteen types of emissions identified using MOVES 2010a: ammonia, atmospheric carbon dioxide, carbon dioxide equivalent, carbon monoxide, methane, nitrogen dioxide, nitrogen oxide, nitrous oxide, non-methane hydrocarbons, oxides of nitrogen, particular matter (PM10 and PM2.5), sulfate PM10, sulfur dioxide, total hydrocarbons, and volatile organic compounds. Even taking into account the addition of the Silver Route for the project, the net result was still a reduction of all of these pollutants.

#### • GOAL THREE: Intercept visitors east of their arrival to the Town of Estes Park

Partially successful. 86% of *visitors* using the Silver Route saw a dynamic message sign. Of those riders who tuned into the highway advisory radio, 80% strongly agreed that the message on the highway advisory radio influenced them to use the Silver Route. Therefore, considering the riders of

the Silver Route, the intelligent transportation system did seem to have an effect on intercepting the visitors. However, the number of visitors using the Silver Route was small.

# • GOAL FOUR: Peak spread the arrival of people and vehicles into ROMO using an "Insider's Tip" on the highway advisory radio

Partially successful. Only a small number of the highway advisory radio users indicated that they delayed their visit as a result of the Insider's Tip. However, the message containing the Insider's Tip was only used during 5 of the 14 days on which the surveying was conducted. The low level of exposure combined with few users tuning into the highway advisory radio limited the effectiveness of the "Insider's Tip." If more visitors could be persuaded to tune into the highway advisory radio, the data imply that the message can be effective.

The stakeholders did not feel the highway advisory radio was responsible for peak spreading, or that the use of an "Insider's Tip" has the potential to impact peak spreading if used again. Many stakeholders felt that visitors have already planned their trip and are on their way to the park by the time they would hear this message; therefore, it would be unlikely that they would change their plans at the last minute. Overall, the stakeholders felt it would be more effective to use some form of an "Insider's Tip" on the associated websites or in printed informational materials.

# • GOAL FIVE: Improve the visitor experience through better dissemination of traveler information

Partially successful. Statistical correlations between visitor experience ratings and seeing a dynamic message sign were investigated, but due to small sample sizes, the findings did not show a statistical significance. Therefore, overall experience ratings were analyzed. Silver Route survey respondents categorized as 'visitors' rated their overall *and* travel experience higher than employees or residents. Furthermore, visitor survey respondents who *used* shuttles rated their overall experience slightly higher than those who did not.

# • GOAL SIX: Successfully collaborate with the Town of Estes Park, Colorado Department of Transportation, and Central Federal Lands Highway Division

Successful. All stakeholders expressed support for the 2011 and future intelligent transportation system deployments. The two primary benefits cited as a result of the collaboration were expanded resources and improved communications. Some stakeholders also saw value in further engaging all partners and continuing to foster good communications.

## • GOAL SEVEN: Introduce ROMO to Intelligent Transportation Systems

Successful. The intelligent transportation system was deployed with highway advisory radio and dynamic message signs during the summer of 2011. Furthermore, the lessons learned from the pilot intelligent transportation system will be valuable for future intelligent transportation system deployments.

# • GOAL EIGHT: Select Intelligent Transportation System devices that are easy to operate and maintain

Partially successful. While the Colorado Department of Transportation dynamic message signs were remotely accessible, the signs provided by a private vendor were not. However, in both cases, Rocky Mountain National Park did not have to change the messages on the signs. Either the vendor or Colorado Department of Transportation made changes to the messages as requested. The highway advisory radio was remotely accessible throughout the project. The vendor took care of applying for the license for the highway advisory radio. As a whole, Rocky Mountain National Park perceived little difficulty in operating the highway advisory radio and dynamic message signs. However, there is still room for improvement. Minor difficulties included the message not being changed when scheduled and the bulbs on one sign not lighting up properly.

Based on the results, the research team developed recommendations for future intelligent transportation system deployments:

- Choose a name for the Fairgrounds Park-and-Ride lot in Estes Park that conveys that:
  - The lot is to be used by visitors of ROMO and Estes Park,
  - o The lot is different from the Bear Lake Park-and-Ride lot in ROMO, and
  - The lot is not related to the fairgrounds in Lyons, Colorado.
- Provide easy to follow wayfinding from the last dynamic message sign to the park-and-ride lot and associated shuttle pick-up location.
- Increase the number of visitors captured using the intelligent transportation system by activating the signs earlier in the day. For the signs to function earlier in the day, either the Hiker Shuttle needs to stop at the park-and-ride or the Silver Route needs to begin operations earlier.
- Provide pre-trip information about the intelligent transportation system, Fairgrounds Park-and-Ride lot, and ROMO and Estes Park shuttle systems.
- Supply the Estes Park Visitor Center, Town of Estes Park, and Rocky Mountain National Park staff with clear information about the purpose of and need for shuttles, so that these representatives can offer a consistent message to visitors that encourages shuttle use.
- Work with the Town of Estes Park and the Fairgrounds managers to develop a strategy that will help eliminate confusion during events that use the Fairgrounds Park-and-Ride lot. This can include better signage and designated parking areas for event staff and horse trailers.
- Provide clear information about the entrance pass needed to enter Rocky Mountain National Park when using a shuttle, as many respondents were under the impression that it might actually be cheaper to enter the park as a carload than to use the shuttle as a group.

# **INTRODUCTION**

Rocky Mountain National Park (ROMO) has approximately 3 million annual visitors [1], the majority of whom visit the park during the peak summer season. As a result of a large proportion of the visitation occurring over this short time period, ROMO and its eastern gateway community, the Town of Estes Park, experience significant traffic congestion.

A future, long-term planning study funded through a 2010 Paul S. Sarbanes Transit in Parks Program Grant will pursue options to reduce congestion in ROMO and the Town of Estes Park, including the redistribution of visitors and deployment of intelligent transportation systems (ITS).

As an interim solution to alleviate some of the congestion experienced within the Town of Estes Park and the Bear Lake corridor of ROMO, which includes the Bear Lake and Glacier Gorge Trailheads, ROMO hoped to take advantage of the new Fairgrounds Park-and-Ride lot in the Town of Estes Park to intercept visitors and shift their mode to shuttles during the summer of 2011.

From the Fairgrounds Park-and-Ride lot, travelers could take the Silver Route to the Estes Park Visitors Center. From there, travelers could choose to take the Hiker Shuttle (operates from 6:30 a.m. until 8 p.m.) to the Bear Lake Park-and-Ride where they can transfer to the Bear Lake or Moraine Park Shuttles, or travelers can elect to take the Red, Brown, or Blue Routes within the town.

To disseminate information about the new park-and-ride lot and the potential for mode shifting, ROMO worked with partners to create an intelligent transportation system, composed of dynamic message signs (DMS) and highway advisory radio (HAR). The design and deployment of the intelligent transportation system was a collaboration between ROMO, the Town of Estes Park, the Colorado Department of Transportation (CDOT), Central Federal Lands Highway Division (CFLHD), and the Western Transportation Institute (WTI). The Paul S. Sarbanes Transit in Parks Technical Assistance Center (TRIPTAC) partnered to assist with evaluating the intelligent transportation system.

Components of the ITS have three distinct locations along US 36 (Figure 1). While US 36, US 34, and SR 7 all lead into Estes Park, the US 36 corridor was chosen for the pilot project by the partners because the Fairgrounds Park-and-Ride lot was immediately accessible from US 36.



Figure 1: Intelligent Transportation System Deployment Locations [2]

Figure 1 shows the three locations where intelligent transportation system components were deployed. Location 1, also called Lyons, had two DMS (Figure 2) and one HAR (Figure 3).



Figure 2: Dynamic Message Sign (DMS)



Figure 3: Highway Advisory Radio (HAR)

One of the dynamic message signs at Location 1 faced westbound traffic on SR 66. The second DMS at Location 1 faced northbound traffic on US 36 prior to the junction point identified in Figure 1. Location 2, also called Pinyon Trail, had one HAR and one DMS. The DMS faced westbound traffic on US 36. Location 3, also called Community, had only one DMS facing westbound traffic on US 36.

The DMS and HAR were active from 9:45 a.m. through 6 p.m., daily. However, on Saturday and Sunday, Location 1 and 2 (Lyons and Pinyon Trail) used an alternative message during the peak-period from 11 a.m. to 2 p.m. on the dynamic message signs. Location 3 did not have a peak-period message. For the HAR, a message was used throughout the entire day either with or without the "Insider Tip." An "Insider Tip" provided extra information to encourage travelers to visit ROMO outside of the peak period. Detailed information about the DMS and HAR messages can be found in Appendix A. A more in-depth discussion of the ITS can be found in the Rocky Mountain National Park Dynamic Message Sign/Highway Advisory Radio Operations Plan [3].

The Rocky Mountain National Park Intelligent Transportation System Evaluation Plan [4] provides details about the goals, objectives and performance measures developed for the pilot study, identifies data to be collected, and discusses expectations of how the data will be used to determine if a goal was achieved.

As a reference for this evaluation, the eight goals and their objectives as identified by the partners are listed here:

- **GOAL 1:** Shift visitors' travel mode from private vehicles to shuttle buses
  - **OBJECTIVE:** Increase daily ridership of shuttles when the 2011 ITS system is operable as compared to the periods when the ITS is not operable
  - **OBJECTIVE:** Demonstrate that the 2011 ITS system has influenced visitors to utilize the shuttle system

- **GOAL 2:** Quantify the reductions in emissions pollution as a result of the mode shift
  - **OBJECTIVE:** Reduce the carbon dioxide emissions during the 2011 ITS deployment
- **GOAL 3:** Intercept visitors east of their arrival to the Town of Estes Park
  - **OBJECTIVE:** Increase usage of the new park-and-ride lot in the Town of Estes Park during the 2011 ITS deployment
- **GOAL 4:** Peak spread the arrival of people and vehicles into ROMO using an "Insider's Tip" on the HAR
  - **OBJECTIVE:** Delay the arrival of some visitors to ROMO by providing an "Insider's Tip," which tells visitors the best time to visit to avoid congestion, in the HAR message
- GOAL 5: Improve the visitor experience through better dissemination of traveler information
  - **OBJECTIVE:** Document a statistical correlation between a positive visitor experience and utilization of the information from the 2011 ITS
- **GOAL 6:** Successfully collaborate with the Town of Estes Park, CDOT, and CFLHD
  - **OBJECTIVE:** Show support from stakeholders in the Town of Estes Park for the 2011 and future ITS, show support from CDOT for the 2011 and future ITS on the corridor to ROMO, and show support from CFLHD for the 2011 ITS deployment
- GOAL 7: Introduce ROMO to ITS
  - **OBJECTIVE:** Introduce ROMO employees to the use of ITS by implementing DMS/HAR during the summer of 2011
- GOAL 8: Select ITS devices that are easy to operate and maintain
  - **OBJECTIVE:** Allow ROMO remote access to the DMS for the 2011 ITS
  - **OBJECTIVE:** Allow ROMO remote access to the HAR for the 2011 ITS
  - **OBJECTIVE:** ROMO staff spends less than 4 hours to apply for the temporary FCC license for the 2011 ITS
  - **OBJECTIVE:** ROMO has no perceived difficulty in operating DMS and HAR

This document discusses the evaluation results of the deployed intelligent transportation system. First, the methodology used to evaluate the system is described, followed by a discussion of the data collection process. Next, overall results, as well as results pertaining to each goal are presented. The final section identifies conclusions and future recommendations.

# **METHODOLOGY**

Three different methodologies were utilized to analyze the effectiveness of the intelligent transportation system: mode choice analysis, visitor surveys, and stakeholder interviews.

# MODE CHOICE ANALYSIS

#### Developing the Predictive Model

A statistical model was created to predict the ridership levels had the intelligent transportation system not been implemented. From the predictive model, an estimate of the mode shift imparted by the intelligent transportation system can be deduced. Therefore, this model is not intended to be used to forecast future conditions. Initially the Silver Route ridership was proposed as the ridership that would be predicted; however, the Silver Route ridership was not used for two reasons. First, numerous events held in Estes Park made use of the Fairgrounds Park-and-Ride lot (see the Events subsection under Data). The events that made use of the Fairgrounds Park-and-Ride lot created a lot of variability in the occupancy of the park-and-ride lot that could not be explained based on the collected data. Second, the Silver Route was frequented by employees. However, no data was collected to allow an understanding of when and how many employees used the Silver Route. If an employee rode the Silver Route was expected to connect riders to the Hiker Shuttle, the ridership from the Hiker Shuttle was used in the analysis. The authors feel that this is the best ridership to use for the analysis as nearly 50% of Silver Route survey respondents indicated that they used the Hiker Shuttle, and an additional 16.7% of survey respondents indicated that they planned to use the Hiker Shuttle during their trip.

A negative binomial regression model was chosen as the structural form of the statistical model for several reasons. First, ridership is a continuous variable. Second, ridership is a count variable. Therefore, ridership is composed of nonnegative integers. Poisson and negative binomial structures can be used to model count data [5]. However, a negative binomial was chosen because it is the more relaxed version of the two structures. The results will indicate based on the overdispersion parameter if the Poisson distribution is preferred to the negative binomial structure.

Fifteen variables were considered for the mode choice analysis, including:

- the month,
- the day of the week,
- holiday influence,
- Beaver Meadows Monthly Entrance Count,
- Beaver Meadows Daily Entrance Count,
- Bear Lake Daily Entrance Count,
- Bear Lake Occupancy,
- whether or not it rained,
- the daily precipitation,
- the high temperature (in °F),
- the low temperature (in °F),
- the activation of the intelligent transportation system,
- an indicator variable for rain between 6 a.m. and 8 p.m.,

- an indicator variable for rain between 8 a.m. and 6 p.m., and
- an indicator variable for rain between 8 a.m. and 2:30 p.m.

The first precipitation indicator variable was expected to reflect the total hours that a visitor might utilize the park. The second precipitation indicator variable was similar to the first, except that the time period was narrowed to reflect drive time into the park and visitors leaving early to travel home or eat dinner. The third precipitation indicator variable was designed to take into account the typical occurrence of an afternoon thunderstorm, after 2:30 p.m.

Data was collected for both 2010 and 2011. However, only data from 2011 was used in the final model because there were gaps in the data collected for the Beaver Meadows Daily Entrance Count, Bear Lake Daily Entrance Count, and Bear Lake Occupancy. These variables were important because they provide an indication of exposure. Initially, it was expected that an estimate could be developed for the 79 data pieces without information in 2010. However, every attempt at identifying a relationship that could be used to predict these data pieces for 2010 without imparting endogeneity was unsuccessful. In other words, variables could not be used to predict the 2010 Beaver Meadows Daily Entrance Count, Bear Lake Daily Entrance Count or Bear Lake occupancy count without going against the independence assumption necessary to use the model. The variables must be independent, otherwise the statistics could be artificially inflated, making them statistically significant when in fact they are not. Additionally, there were concerns about the differences in visitation between 2010 and 2011. Since the majority of observations without an intelligent transportation system would have been taken from 2010 if the data was used, the resulting model may have overestimated the ridership attributable to the intelligent transportation system. In conclusion, 2010 data was removed.

Some data for the Beaver Meadows Daily Entrance Count, Bear Lake Daily Entrance Count, and Bear Lake Occupancy Count were also not available in 2011. However, the missing data were only from 19 days (21 for the Bear Lake Occupancy Counts). Therefore, observations from other days of the week within the same month were used to obtain an estimate. The days on which observations were not available for the Beaver Meadows Daily Entrance Count and Bear Lake Daily Entrance Count are:

- July 5-8, 2011
- July 29-31, 2011
- August 1, 2011
- August 16-17, 2011
- September 7-11, 2011
- September 17-18, 2011, and
- September 24-25, 2011.

The days on which observations were not available for the Bear Lake Occupancy counts are the same, except the 3<sup>rd</sup> and 4<sup>th</sup> of July were also not available.

## **Estimating Emissions Pollution Reduction**

The reductions in emissions were computed via two steps: 1) estimating the pollutant factors specific to the implementation area and 2) computing the vehicle miles traveled.

The Environmental Protection Agency Motor Vehicle Emission Simulator (MOVES 2010a) was utilized by aggregating the emission database of Boulder, Grand, and Larimer County and accepting the model's default assumptions. The pollutants are calculated for all days in 2011 from 9:00 am to 6:00 pm for both passenger vehicles and two-axle, four tire, single-unit vehicles.

Two changes were made as a result of the intelligent transportation system: the implementation of the Silver Route to connect the Fairgrounds Park-and-Ride and the Estes Park Visitors Center, and the mode shift of users of the Fairgrounds Park-and-Ride from passenger vehicles to the shuttle buses.

The transit service provider indicated that the Silver Route ran 48 trips per day with an approximate round-trip distance of 2.8 miles.

From the negative binomial model, there was an addition of approximately 103 people per day. From the Rocky Mountain National Park Visitor Study [6], the estimated group size was 3.6 people. However, a subsequent question also indicated that there may be more than one vehicle per group. Therefore, when dividing 103 people per day by 3.6 people per group to determine the number of vehicles, the result was rounded up for an estimated 29 private vehicles per group removed from the system. The estimated one-way distance from the Estes Park Visitor Center to the Bear Lake Park-and-Ride is 10 miles [7]. Using this distance is a conservative assumption for two reasons. First, the displaced private vehicles may have chosen to drive from the Estes Park Visitor Center all the way to the Bear Lake Trailhead parking lot. Second, if there was no parking at the Bear Lake Trailhead, vehicles may have traveled additional miles while searching for a parking space.

## VISITOR SURVEYS

Visitor surveys were conducted in conjunction with the University of Maine Parks, Recreation and Tourism Program. The purpose of the visitor surveys was to determine visitors' awareness of the DMS and HAR, as well as the influence of these technologies on visitor travel behavior.

#### **On-Site Survey Design**

Two discrete on-site questionnaires were designed to provide a comprehensive analysis of visitors' awareness and use of the DMS and HAR. A shuttle survey was designed for distribution onboard the Silver Route shuttle. Additionally, an intercept visitor survey was designed to capture visitors who did not use the Silver Route, including non-riders and visitors who were influenced by the ITS to use visitor shuttles, but who chose to board at the Estes Park Convention and Visitors Bureau (CVB) rather than the Fairgrounds Park-and-Ride lot.

The shuttle survey was intended to provide information on visitors' evaluations of the ITS and the Silver Route. The survey asked questions related to:

- Satisfaction with overall trip and travel experience
- Route used to access Estes Park
- Awareness and use of DMS and HAR
- Influence of DMS and HAR on travel choice
- Evaluation of Silver Route features and amenities

The visitor survey was identical to the shuttle survey with the exception of the last section, which asked visitors to indicate why they did not park at the Fairgrounds Park-and-Ride and use the Silver Route shuttle to enter town. Both surveys were designed to be completed in 5 minutes or less so as to limit the burden on visitors. Demographic questions including gender, zip code, country of origin, age and

number of people in party were asked to help determine the representativeness of those sampled. The shuttle survey and visitor survey questionnaires can be found in Appendix B.

## Extended Mail Survey Design

In addition to the on-site surveys, all survey respondents were invited to participate in an extended mail survey, which was designed to provide in-depth information about trip planning and use of traveler information. On-site survey respondents who agreed to participate in the extended study provided their mailing information on a card, and an extended survey was sent to them within three weeks. The mail survey asked questions related to:

- Transportation mode use when visiting parks and recreation areas
- Opinions toward shuttle use
- Evaluation of strategies designed to influence future shuttle use
- Views about positive/negative outcomes associated with shuttle use
- Use of travel information sources
- Shuttle use-history
- Extended demographic information

The Dillman Tailored Design Method [8] was used for the mail-survey portion of the evaluation. For the purpose of this study a four step treatment was used: 1) an invitation letter and mail survey to all participants 2) a post-card reminder and thank you 3) a replacement questionnaire for participants who had not yet completed surveys and 4) a final letter requesting participants return completed surveys. The mail questionnaire can be found in Appendix C.

## Survey Distribution

On-site surveys were conducted between 12:00 p.m. and 7:00 p.m. for 14 consecutive days from Wednesday July 27<sup>th</sup>, 2011 until Tuesday, August 9<sup>th</sup>, 2011.

The data collection team consisted of two research assistants from the University of Maine, five volunteers from the Town of Estes Park, and three employees from Central Federal Lands Highway Division. One research assistant from the University of Maine served as the data collection supervisor and facilitated a two hour training for all volunteers on July 26<sup>th</sup>, 2011.

The shuttle surveys were distributed onboard the Silver Route shuttle as it made return trips from the CVB to the Fairgrounds Park-and-Ride lot. One adult (18 or older) from each party was asked to complete a survey. Several people rode the shuttles on multiple days but were only allowed to complete the survey once during the 14 day survey period. Respondents returned completed surveys to data collection personnel as they exited the shuttles.

The intercept visitor surveys were distributed at two locations: the CVB and Bond Park, a small community park located in downtown Estes Park. Random assignment was used to determine where surveying would occur on each day of the surveying period with the intention of collecting surveys from each location on four week-days (Monday-Thursday) and three weekend-days (Friday-Sunday). However, due to weather conditions, surveying had to be moved to the CVB on several days because

Bond Park lacked cover from rain. The locations and corresponding dates of collection are shown in Table 1.

| Date                   | Survey Location   |
|------------------------|-------------------|
| July 27 <sup>th</sup>  | CVB               |
| July 28 <sup>th</sup>  | CVB               |
| July 29 <sup>th</sup>  | CVB               |
| July 30 <sup>th</sup>  | CVB               |
| July 31 <sup>st</sup>  | Bond Park         |
| August 1 <sup>st</sup> | Bond Park and CVB |
| August 2 <sup>nd</sup> | CVB               |
| August 3 <sup>rd</sup> | CVB               |
| August 4 <sup>th</sup> | Bond Park and CVB |
| August 5 <sup>th</sup> | Bond Park and CVB |
| August 6 <sup>th</sup> | CVB               |
| August 7 <sup>th</sup> | Bond Park and CVB |
| August 8 <sup>th</sup> | CVB               |
| August 9 <sup>th</sup> | Bond Park         |

#### **Table 1: Dates and Locations of Survey Administration**

Data collection personnel approached approximately every 6<sup>th</sup> visitor at the CVB and Bond Park and asked them to complete a visitor survey. One adult (18 or older) per family or group was asked to complete a survey and return it to a data collection team member when it was completed. Data collection personnel recorded observational information for parties that refused to participate, including reason for refusal, party size, language issues, presence of children, and gender. These data were used to compare respondents with non-respondents to check for non-response bias.

## STAKEHOLDER INTERVIEWS

Telephone interviews were conducted by the University of Maine in order to determine stakeholder valuation of the pilot ITS. Qualitative interviews were chosen over quantitative surveys in order to provide specific details concerning perceived challenges, successes and recommendations for the future use of the ITS. Participating stakeholders included representatives from Rocky Mountain National Park, Rocky Mountain Transit, Colorado Department of Transportation (CDOT), Central Federal Lands Highway Division (CFLHD), and Public Works officials from the Town of Estes Park.

#### **Pre-Implementation Interviews**

Pre-implementation interviews took place between June 28<sup>th</sup> and July 15<sup>th</sup>, 2011. A total of 11 stakeholders participated in the telephone interviews. Stakeholders responded to questions concerning their evaluation of major transportation issues in the area, their expectations for the pilot ITS and the time and resources required from their agency to prepare for implementation of the system. The pre-implementation interview form can be found in Appendix D.

#### **Post-Implementation Interviews**

Post-implementation interviews took place between September 14<sup>th</sup> and October 17<sup>th</sup>, 2011. Two of the original participants were unavailable for post-implementation interviews, resulting in a total of 9 stakeholder participants. Participating stakeholders were given the opportunity to debrief on the pilot ITS by responding to questions related to their personal evaluation of the system, the challenges they encountered during the season, their experiences collaborating with other stakeholders, their opinions towards using the system in the future, and any recommendations they had for system improvements. The post-implementation interview form can be found in Appendix E.

# DATA

Ten types of data were collected for this project: ridership counts, event data, traffic counts, fleet observations, dynamic message sign and highway advisory radio logs, weather events, shuttle surveys, intercept visitor surveys, mail surveys, and stakeholder interviews. They are discussed in the following sections.

## **RIDERSHIP COUNTS**

Ridership data were obtained for both 2010 and 2011 for the Hiker, Bear Lake, and Moraine Park Shuttles operating in and around Rocky Mountain National Park (Table 2) and the Blue, Red, Brown, and Silver Routes operating in and around Estes Park (Table 3). No data are provided for the Silver Route in 2010 because the route was new in 2011. The data broken down by day, month, and year, can be found in Appendix F.

|           | Hiker  |        | Bear    | Lake    | Moraine Park |        |  |
|-----------|--------|--------|---------|---------|--------------|--------|--|
|           | 2010   | 2011   | 2010    | 2011    | 2010         | 2011   |  |
| May       | n/a*   | n/a*   | 4,294   | 1,755   | 807          | 645    |  |
| June      | 945    | 1,583  | 53,228  | 40,091  | 7,217        | 7,276  |  |
| July      | 8,448  | 13,232 | 131,534 | 142,758 | 14,805       | 15,167 |  |
| August    | 7,575  | 11,377 | 103,787 | 114,695 | 11,350       | 12,830 |  |
| September | 2,073  | 3,488  | 56,801  | 61,373  | 5,957        | 7,130  |  |
| October   | 177    | 337    | 16,627  | n/a     | 927          | n/a    |  |
| TOTAL     | 19,218 | 30,017 | 361,977 | n/a     | 40,256       | n/a    |  |

#### Table 2: Rocky Mountain National Park Ridership Summary

\*The shuttle did not run during this month.

The data in Table 2 show that for May, when only Bear Lake and Moraine Park are operating, the ridership decreased from 2010 to 2011. 2011 was an unusual year for Rocky Mountain National Park and Estes Park when compared with previous years because snow pack was present in the mountains long after what is normally experienced. Therefore, it is possible that the prolonged winter may have deterred some early season visitors from riding the shuttles.

In June, ridership on the Bear Lake Shuttle was lower in 2011 when compared with 2010. Ridership during this month on the Moraine Park Shuttle was approximately the same. In contrast, ridership for the Hiker Shuttle increased by approximately 68%.

When looking at the ridership on the Hiker Shuttle as compared with the Bear Lake and Moraine Park Shuttles from July through September, the Hiker Shuttle saw significant increases in ridership. Where the Hiker Shuttle saw increases ranging from 50-68%, the Bear Lake and Moraine Park Shuttles saw much smaller increases of 8-10.5% and 2.5-13%, respectively. This could imply that essentially the same number of people are making use of the Bear Lake and Moraine Park shuttles; however, they are accessing them by using the Hiker Shuttle.

|           | BI     | ue     | Red   |       | Bro    | Silver |        |
|-----------|--------|--------|-------|-------|--------|--------|--------|
|           | 2010   | 2011   | 2010  | 2011  | 2010   | 2011   | 2011   |
| June      | 807    | 1164   | 409   | 560   | 708    | 1,021  | 303    |
| July      | 6,177  | 9,138  | 3,440 | 4,498 | 6,059  | 6,291  | 4,153  |
| August    | 3,388  | 7,080  | 2,453 | 3,285 | 4,969  | 5,741  | 3,808  |
| September | 598    | 3,026  | 395   | 1,345 | 580    | 1,661  | 3,712  |
| TOTAL     | 10,970 | 20,408 | 6,697 | 9,688 | 12,316 | 14,714 | 11,976 |

#### Table 3: Town of Estes Park Ridership Summary

In Estes Park, due to service changes, all of the shuttles saw significant growth in September. For the other months, the Blue Route and Red Route saw an increase of about 45% and 35%, respectively. Although the Brown Route saw increases in every month, they ranged pretty widely from about 4% to 44%. One of the most interesting things to note is that the total ridership on the Silver Route, a new service, was greater than the ridership on the Red Route, an existing service!

Figure 4 shows the monthly Silver Route ridership divided by the number of days the shuttle was in service. The figure shows that ridership in June was quite low, July and August were similar, but September ridership was much higher.



Figure 4: Silver Route Monthly Ridership Per Service Day

## EVENT DATA

The following are dates on which events occurred in the Town of Estes Park, when use of the Fairgrounds Park-and-Ride lot for event parking may have affected the use of the Fairgrounds Park-and-Ride lot by potential users of the intelligent transportation system:

- June 18 19, 2011: Cowboy Mounted Shooting Show
- June 22 26, 2011: Rocky Mountain Miniature Horse Show
- June 30, 2011: Farmer's Market
- July 4, 2011: Fireworks
- July 12 17, 2011: Rooftop Rodeo
- July 21, 2011: Hunter Jumper Show; Farmer's Market
- July 22 24, 2011: Hunter Jumper Show
- July 27 31, 2011: Hunter Jumper Show
- August 3 7, 2011: Hunter Jumper Show
- August 10 14, 2011: Hunter Jumper Show
- August 18, 2011: Dressage Show Move-In; Farmer's Market
- August 19 20, 2011: Senior Professional Rodeo
- August 21, 2011: Draft Horse Show; Dressage Show Move-Out
- August 25, 2011: Farmer's Market
- September 1, 2011: Farmer's Market
- September 8 11, 2011: Longs Peak Scottish-Irish Highland Festival

#### TRAFFIC COUNTS

Traffic counts were recorded during the following periods:

- June 25, 2011 through July 4, 2011,\*
- July 9, 2011 through July 29, 2011,\*
- August 2, 2011 through August 15, 2011, and
- August 18, 2011 through September 7, 2011.\*

Due to counter malfunction, some of the data are not available for the periods identified with a (\*). Traffic counts were recorded at the Beaver Meadows Entrance only for vehicles entering the park and at the entrance and exits of the Fairgrounds and Bear Lake Park-and-Rides, respectively.

#### **Beaver Meadows Entrance Station Traffic Counts**

Table 4 shows the Beaver Meadows Entrance Station traffic counts collected by the National Park Service. The traffic counts are greater for 2011 as compared with the previous three years in June, July, August and September. The percent changes between 2011 and 2010 for June, July, August and September, respectively, are 17.6%, 13.7%, 7.6%, and 11.6%.

|      | April  | May    | June   | July    | August  | September | October | November |
|------|--------|--------|--------|---------|---------|-----------|---------|----------|
| 2008 | 12,846 | 32,421 | 41,301 | 99,466  | 89,386  | 78,381    | 40,650  | 13,750   |
| 2009 | 11,716 | 41,176 | 74,387 | 104,859 | 92,618  | 79,340    | 33,088  | 13,080   |
| 2010 | 14,565 | 33,615 | 76,245 | 108,614 | 98,128  | 83,970    | 45,968  | 13,728   |
| 2011 | 15,034 | 31,010 | 89,667 | 123,532 | 105,617 | 93,715    | n/a     | n/a      |

#### Table 4: Traffic Counts at Beaver Meadows Entrance Station [9]

n/a = Not Applicable for the project's purpose

The traffic counters were installed west of the Beaver Meadows Entrance Station. The purpose of collecting these counts as compared with the counts collected by the National Park Service is to obtain daily traffic counts. A breakdown of the visitation by month and day of the week can be found in Appendix G.

## Fairgrounds Park-and-Ride Traffic Counts

The traffic counts collected for the Fairgrounds Park-and-Ride were highly variable as a result of event traffic, lot closures, and potentially vehicles driving over curbs. Counter malfunction and data collection dates further limited the number of days with data. Therefore, only 24 days out of the 79 days that the shuttle was in service had baseline data. The 24 days were those on which traffic counters collected counts and no events occurred. However, lot closures and vehicles exiting or entering the lot by driving over the curbs could have affected the counts. It is unclear which days the park-and-ride lot had a closure on 4<sup>th</sup> Street. A table is provided in Appendix G that shows the events, days on which the counters malfunctioned, and days on which the counters were being exchanged.

Analysis of the recorded data often implied that many vehicles remained in the park-and-ride lot overnight. An example plot illustrating this phenomenon is shown in Figure 5. However, on-site observations did not support the data. The data from Figure 5 imply that about 40 vehicles were present in the lot overnight, when in fact only a couple of vehicles may have been present.



#### Figure 5: Fairgrounds Park-and-Ride Example Occupancy Count, July 2, 2011

When analyzing the available count data to determine if the goals were met, the Fairgrounds Park-and-Ride data were not considered a reliable source – there was too much unexplained variability.

#### Bear Lake Park-and-Ride Traffic Counts

A traffic counter was installed at the entrance and exit, respectively, to the Bear Lake Park-and-Ride lot within ROMO. As shown by Figure 6, the counts at this location performed as expected; there was a peak each day and the counts at the end of the day resulted in few if any vehicles present in the lot overnight. The vehicles present may have represented backcountry hikers or shuttle vehicles. Only a few modifications had to be made to account for subtle errors because of the continuous nature of the count. The figures corresponding to other days on which data were collected can be found in Appendix G. Appendix G also contains information about the peak occupancy, the time of the peak occupancy, if the theoretical capacity of the lot was exceeded, and the time during which the theoretical capacity of the lot was exceeded. A reader should be aware that the occupancy numbers found in the table and charts were not validated in the field. They relate to readings taken from the traffic counters.



Figure 6: Bear Lake Park-and-Ride Occupancy, June 25, 2011

#### FLEET OBSERVATIONS

Data were collected on the types of vehicles observed in the Fairgrounds Park-and-Ride lot. The objective of collecting this data was to obtain an estimate of the types of passenger vehicles and light trucks that were displaced to the Fairgrounds Park-and-Ride lot as a result of the ITS installation. Table 5 presents the number of passenger cars, light trucks, recreational vehicles (RVs), and horse trailers observed to be parked in the Fairgrounds Park-and-Ride.

| Data      | Time e   |                | Num          | ber of: |                |       |
|-----------|----------|----------------|--------------|---------|----------------|-------|
| Date      | Time     | Passenger Cars | Light Trucks | RVs     | Horse Trailers | TOTAL |
| 7/27/2011 | 12:15 pm | 8              | 11           | 0       | 23             | 42    |
| 7/27/2011 | 5:30 pm  | 1              | 1            | 0       | 43             | 45    |
| 7/28/2011 | 1:10 pm  | 5              | 12           | 0       | 40             | 57    |
| 7/28/2011 | 4:00 pm  | 12             | 27           | 0       | 40             | 79    |
| 7/29/2011 | 2:15 pm  | 20             | 25           | 0       | 31             | 76    |
| 7/29/2011 | 4:45 pm  | 15             | 21           | 1       | 20             | 57    |
| 7/30/2011 | 1:00 pm  | 30             | 40           | 1       | 20             | 91    |
| 7/30/2011 | 3:30 pm  | 25             | 30           | 1       | 20             | 76    |
| 7/30/2011 | 6:10 pm  | 25             | 28           | 1       | 20             | 74    |
| 7/31/2011 | 12:15 pm | 30             | 45           | 1       | 20             | 96    |
| 7/31/2011 | 3:30 pm  | 30             | 40           | 1       | 20             | 91    |
| 7/31/2011 | 7:30 pm  | 7              | 1            | 1       | 20             | 29    |
| 8/6/2011  | 4:45 pm  | 8              | 11           | 1       | 20             | 40    |
| 8/7/2011  | 3:00 pm  | 6              | 15           | 0       | 12             | 33    |
| 8/8/2011  | 5:30 pm  | 4              | 5            | 0       | 3              | 12    |
| 8/9/2011  | 1:10 pm  | 3              | 8            | 1       | 4              | 16    |

#### Table 5: Fleet Observations in the Fairgrounds Park-and-Ride

The table shows that horse trailers were over-represented in the counts at the park-and-ride (See Figure 7). This information was recorded when TRIPTAC representatives were on-site administering surveys. Other events occurred outside of these dates that may or may not have had similar effects. On average, the horse trailers represented 42% of the occupancy of the park-and-ride. Grouping light trucks, recreational vehicles and horse trailers into a "heavy vehicle category," they represented 77% of the occupancy; passenger vehicles represented 24% of the occupancy.



Figure 7: Horse Trailer Occupancy at Fairgrounds Park-and-Ride

Estes Park hosts many events throughout the year. There was concern during the planning phase that the occurrence of events concurrent with the operations of the intelligent transportation system might cause some confusion. However, most events were expected to take place after 5:30 p.m. The presence of vehicles using the lot for the events prior to the 5:30 p.m. time frame was not considered. However, as the data show, the horse trailers were over-represented in the occupancy counts of the lot. Input provided from respondents during surveying indicate that the presence of the horse trailers and the need for better signage to the park-and-ride lot contributed to low utilization of the park-and-ride lot. Potential users did not realize that the lot was the park-and-ride. Therefore, it is unclear if the percentages of the passenger vehicles and the heavy vehicles are representative of those displaced by the information from the ITS. Hence, this information was not used to estimate the proportion of passenger cars and light trucks in the emission reduction calculations.

#### DMS & HAR LOGS

The DMS and HAR logs and messages can be found in Appendix A. The dates of any changes to the messages are identified in the logs.

There were three DMS installations as shown in Figure 1: Lyons (Location 1), Pinyon Trail (Location 2) and Community (Location 3).

The messaging on the signs in Lyons changed twice: on August 6<sup>th</sup> and August 12<sup>th</sup>. The first change was made to better convey to visitors that the shuttles are "free." The second change was made because Lyons also has a fairgrounds. There was concern that travelers might confuse the fairgrounds in Lyons with the one in Estes Park. The installation on SR 66 was not changed per the instructions on August 12<sup>th</sup>; therefore, the messaging for this sign was actually changed on August 23<sup>rd</sup>.

The Pinyon Trail DMS message was only changed on August 6<sup>th</sup>. This change was also made to better convey to visitors that the shuttles are "free." Additionally, this sign was out-of-order for less than 24 hours starting August 11<sup>th</sup>.

The Community DMS message was only changed on August 6<sup>th</sup>.

A HAR message was constructed with and without an "Insider Tip." The message with the "Insider Tip" was played on days when afternoon thunderstorms were not predicted. The "Insider Tip" on the highway advisory radio was utilized 16 times. The messaging scheme itself was only changed once, on August 6<sup>th</sup>. The message was changed in part to condense the length because the transmission may have been limited as a result of interference by another station and a weak transmission. This station had been assigned by the FCC. While there was no documented failure of the highway advisory radio, survey respondents identified several occurrences when the highway advisory radio was either too weak to make out or overpowered by the interfering radio station. Additionally, due to cloud cover, the solar power batteries were not always able to fully charge, which may have resulted in a weak radio transmission.

#### WEATHER EVENTS

Weather was identified by ROMO personnel as having a significant effect on visitation, particularly the afternoon thunderstorms. Weather information was used for two purposes: to determine if the "Insider

Tip" should be utilized and to analyze mode choice. Therefore, a source was identified that provides historic weather information: Weather Underground [10]. The specific station used was KCOESTES2. This station was chosen because it provided information about the rainfall rate over the course of the day, and it was in close vicinity to the park. The provided charts were converted into indicator variables, which were used in the mode choice analysis.

The average recorded high temperature for the 83 days considered in the mode choice analysis was 78.9°F. The average recorded low was 47.2°F. Twenty-eight of the 83 days included in the mode choice analysis had recorded precipitation. The average precipitation across these days was 0.04 inches.

## SHUTTLE SURVEY

Researchers had a goal of surveying 350 respondents onboard the Silver Route shuttle over the course of the 14 day data collection period. However, only 68 surveys were collected. This low number of responses can be attributed to multiple factors. Principally, daily Silver Route ridership was low, which was expected during the first year of operation. Additionally, it was observed that daily ridership was composed largely of repeat users, primarily local residents and area employees. Many of these repeat users completed surveys during the first week of data collection. Thus, the number of possible respondents declined towards the end of the data collection period, as riders were only permitted to complete one survey. Despite this small sample size, the response rate was actually quite high. Of the riders approached, 81.9 percent agreed to take the survey.

Respondents were asked if it was their first time visiting the Estes Park/Rocky Mountain National Park area. Only 38.2 percent of respondents were first time visitors, while 61.8 percent were return visitors.

Although respondent type was not a question on the original survey, data collection personnel were asked to record respondent type on the bottom of each survey, as pre-testing revealed that the majority of Silver Route riders were local employees. As shown in Figure 8, approximately 65 percent of respondents were categorized as "visitors," while the remaining 35 percent were "local residents" or "employees". This breakdown of respondent type represents survey respondents only and does not reflect all Silver Route riders. The overall percentage of local residents and employees who used the Silver Route on a daily basis would actually be much higher; however, these groups account for a smaller percentage of survey respondents because they were repeat users and could only fill out a survey once.



Figure 8: Respondent Type

All respondents were asked to provide their zip code or country of residence. These data were intended to help determine possible locations for future promotion of the park-and-ride and the town and park shuttles. Approximately 16 percent of shuttle survey respondents were international visitors, the majority of whom were working in Estes Park for the summer. The remaining 83.5 percent were U.S. visitors. Figure 9 shows the breakdown for U.S. residents. Zip codes were used to determine the origin cities of the Silver Route users who were residents of Colorado. The largest single source of riders came from Estes Park, further showing that the majority of Silver Route riders were local residents and employees. All other zip codes were categorized as "Other Colorado City" or "Other State," as the small sample size for the shuttle survey made it difficult to draw conclusions about the significance of a respondents' city of origin.



Figure 9: Area of Residence

Respondents were also asked how many people they were traveling with including themselves. The results for this question are shown in Figure 10. The majority of respondents (75 percent) were traveling alone or with one other person. Only 8.8 percent of respondents were traveling in a group of 6 or more. Group size did not contribute to non-response bias, as only one group in the 6 or more category refused to complete a survey.



Figure 10: Number of People in Group<sup>N</sup>

The Fairgrounds Park-and-Ride lot was designed to provide parking for day visitors, as overnight visitors can park at their lodging and use the Brown, Red or Blue Route shuttles to travel throughout the area.

Because of this, it was anticipated that the majority of Silver Route riders would be visiting for less than 24 hours. However, only 33.8 percent of respondents indicated that they were visiting for the day. Overnight visitors accounted for 41.2 percent of respondents, while 25 percent were local residents or seasonal employees. While it seems odd that 41.2 percent of respondents were overnight visitors, this can be explained by antidotal observations from data collectors. Respondents who indicated that they were overnight visitors can be broken down into two groups; 1) visitors who were lodging east of Estes Park and parking at the park-and-ride during day-trips and 2) international students who were working in Estes Park for the summer and staying 30 to 90 days.

Among respondents who were visiting for one day only, more than 90 percent indicated that they were staying between 4 and 12 hours. Only 8.7 percent of respondents were visiting for three hours or less. A breakdown of length of stay is shown in Figure 11.



Figure 11: Length of Stay for Day-Visitors

The results for all survey questions are provided in Appendix H and two-way tables showing the interrelationship between select questions (such as overall experience ratings by respondent type) are provided in Appendix I. The majority of the data were used to evaluate specific project goals, objectives and performance measures that were defined prior to the evaluation. The survey data are used in the Results section below to evaluate the effectiveness of the ITS to achieve these goals, objectives and performance measures.

In summary, 66.7 percent of shuttle survey respondents saw a DMS and 29.4 percent tuned to the HAR. Of those that tuned to the HAR, 80 percent strongly agreed that the information influenced them to use the Fairgrounds Park-and-Ride and 50 percent strongly agreed that they would use the information again. However, approximately 36 percent felt that they needed more information on the HAR. Respondents did not indicate what this information was.

When asked where they learned about the Silver Route shuttle, the DMS and HAR were listed as the top two sources of information. The ROMO and Estes Park websites were listed in the bottom three sources

of information, though mail survey results (which are presented in the next section) indicate that the websites are two of the top information sources that visitors use when planning a trip. This indicates that the Estes Park and ROMO websites could be more effective in communicating the shuttle information to visitors. For example, an eye-catching link on the main page could take visitors to the page with the shuttle information. As mentioned above, conveying that they are free would be a significant benefit to encouraging use.

Respondents also answered questions about the benefits provided by the Silver Route shuttle. More than 95 percent of respondents somewhat to strongly agreed that the shuttle was easy to use. Approximately 64 percent strongly agreed that the shuttle saved them time, and 77.6 percent strongly agreed that the shuttle was convenient. Ninety one percent of respondents somewhat to strongly agreed that they enjoyed their experience using the shuttle and 92 percent somewhat to strongly agreed that they would use the shuttle again. Overall, this demonstrates satisfaction by respondents with the quality of the Silver Route shuttle service.

## INTERCEPT VISITOR SURVEY

A total of 490 intercept visitor surveys were collected during the 14 day data collection period; 369 at the Estes Park Convention and Visitor's Bureau (CVB) and 121 at Bond Park. In total, 61.1 percent of visitors approached agreed to complete a survey. Observational characteristics for non-respondents were analyzed to determine if any specific factors contributed to a visitor's refusal to participate. Gender, party size, presence of children, and language issues were all examined and none had a significant effect on refusal to participate. The gender ratio, party size, and presence of children were all approximately the same for respondents as for non-respondents. Less than 1 percent of visitors who refused to participate cited a language issue.

Visitor survey respondents were also asked if it was their first time visiting the Estes Park/Rocky Mountain National Park area. First time visitors made up 43.4 percent of respondents, while 56.6 percent were return visitors.

Respondents also provided their zip code or country of residence. Approximately 96 percent of visitor survey respondents were U.S. visitors, while the remaining respondents were international visitors. Figure 12 shows the breakdown for U.S. residents. Zip codes were used to identify the most frequent origin cities of respondents. Approximately 68 percent of respondents were visiting from states outside of Colorado. Within Colorado, the two largest sources of riders came from Denver (4.9 percent) and Loveland (4.0 percent). Fort Collins (2.4 percent), Boulder (2.2 percent), Estes Park (2.2 percent), and Colorado Springs (1.8 percent) were also identified as primary sources of visitors. All other respondents were grouped into the category "Other Colorado City," as no other city accounted for more than a few respondents. The visitor survey data reveal that the above cities, especially Denver and Loveland, may be good locations to focus promotion campaigns for the Estes Park/Rocky Mountain National Park shuttle system.



Figure 12: Area of Residence

Respondents were asked how many people they were traveling with including themselves. The results for this question are shown in Figure 13. More than half (52.4 percent) of all respondents were traveling in a group of three or more, with the majority (40 percent) falling into the 3-5 category. These results coincide with those of the Rocky Mountain National Park Visitor Study [6] and therefore give further confidence to the findings from both surveys.



Figure 13: Number of People in Group

The majority of visitor survey respondents were overnight-visitors (64.1 percent), while 35.9 percent were day-visitors. The breakdown of length of stay for overnight and day-visitors are shown in Figure 14 and Figure 15, respectively. Nearly 90 percent of respondents categorized as overnight-visitors stayed in

the area between 1 and 7 days. For day-visitors, 77.7 percent planned to spend between 4 and 12 hours in the area. This shows that there is a large population of day-visitors who are in the area long enough to utilize shuttle services. This is the target demographic for the Fairgrounds Park-and-Ride.



Figure 14: Length of Stay for Overnight-Visitors



Figure 15: Length of Stay for Day-Visitors

The results for the visitor survey are provided in Appendix J and two-way tables showing the interrelationship between select questions (such as overall experience rating vs. use of shuttles) are provided in Appendix K. As with the shuttle survey data, visitor survey data are used to address specific goals, objectives and performance measures in the Results section.
In summary, 41.8 percent of visitor survey respondents saw a dynamic message sign, but only 7.0 percent tuned to the highway advisory radio. Of those that tuned to the HAR, 46.4 percent strongly agreed that they would use the information again. Approximately 53 percent felt that they needed more information from the HAR.

Visitor Center Staff and the DMS were listed as the top two sources of information about shuttles. The HAR was only listed as an information source by 4 percent of visitor survey respondents. Respondents were also asked to indicate why they did not use the Fairgrounds Park-and-Ride and Silver Route shuttle and 56.9 percent indicated that they were not aware of the option. This indicates that further promotion is needed to make visitors aware of all shuttle options. Respondents were asked to provide other reasons why they did not use the Park-and-Ride. Answers included "I drove around & could not find lot," "Need better advertising and signage," "Didn't know how to get there based on signs. Thought Park-and-Ride was for work commute," and "Not our style." While some respondents indicated that they simply were not interested in the shuttles, the remaining comments suggest that better signage and promotion could increase shuttle use.

As a result of the feedback received during the surveys, the Paul S. Sarbanes Transit in the Parks Technical Assistance Center recommended on August 4, 2011 that additional signage be added, as shown with the yellow pegs in Figure 16. However, these recommendations were not implemented.



Figure 16: Recommended Park-and-Ride Sign Additions [2]

### MAIL SURVEY

All on-site survey respondents (including shuttle survey and visitor survey respondents) were invited to participate in an extended mail survey. The purpose of the mail survey was to gather in-depth

information related to trip-planning and shuttle use. This section presents the data associated with the extended mail survey.

A total of 233 on-site survey respondents agreed to participate in the mail survey. Eight respondents did not receive their surveys due to errors in address information, leaving 225 potential participants. A total of 163 surveys have been returned, resulting in a 71 percent response rate.

Males (50.3 percent) and females (49.7 percent) were represented evenly among the survey population. The mean respondent age was 48.3, with 60 percent of respondents falling into the '40-64' category. Results are shown in Figure 17. These results are consistent with those of the 2010 ROMO Visitor Study [6] when corrected for differences in the respondent populations.



Figure 17: Respondent Age

On average, mail survey respondents reported education levels much higher than the United States average, with approximately 70 percent reporting a Bachelor's degree or higher. In particular, the number of respondents with graduate degrees (35.2 percent) was much higher than that reported for U.S. residents 18 and over in the 2010 census, which was 7.9 percent [11]. However, these data are also consistent with the results of the 2010 ROMO Visitor Study [6], where 37% of respondents indicated that they held a graduate degree. Therefore, the mail survey respondent population is assumed to be representative of Estes Park/ROMO visitors.

Respondents were asked to indicate how many times they had visited Estes Park/ROMO before their most recent visit. Approximately 30 percent of respondents were first time visitors, while an additional 30 percent indicated that they had visited once before. A complete breakdown of number of visits is shown in Figure 18.



Figure 18: Number of Visits to Estes Park/ROMO before most recent visit

Respondents were also asked to indicate the type of group they were traveling with on their most recent visit. The vast majority, 65 percent, were traveling with family. These data are also consistent with the results of the 2010 ROMO Visitor Study [6].

Determining the length of stay of visitors is very important, as the new Fairgrounds Park-and-Ride was designed for use by day-visitors. Additionally, the type of accommodations used by overnight visitors is also important, as the pilot ITS was used to promote use of all park and town shuttles, and information on visitor accommodations can be used to determine appropriate areas for additional promotion of shuttles. The results indicate that twenty-nine percent of mail survey respondents were day-visitors.

Among overnight visitors, the most frequently cited accommodations were hotels/motels in town (16.7 percent), private campgrounds (8.0 percent), the YMCA of the Rockies (7.4 percent), and campgrounds within ROMO (6.1 percent). These are all key locations to provide information on shuttles, such as schedules and routes. Additionally, word of mouth and personal recommendations are an effective way to encourage shuttle-use; therefore, the staff of these accommodations should be provided with shuttle schedules and route maps so that they can offer guests information about the local transportation system. Figure 19 presents a complete breakdown of accommodations. Approximately 23 percent of respondents indicated "other" for their type of accommodation. A complete list of responses for "other" can be found in Appendix L. Responses primarily included cabins, condominiums, rental houses, and hotels in Boulder or Denver.



Figure 19: Accommodations used on most Recent Trip to Estes Park/ROMO

### STAKEHOLDER INTERVIEWS

Permanent implementation of the DMS and HAR requires support from the stakeholders who will be responsible for operating and maintaining these systems. Interviews with key stakeholders were conducted before and after the pilot ITS deployment to gauge stakeholders' perceptions of the utility and feasibility of using these technologies as long-term management tools. All interviews were transcribed and coded into themes using NVivo software for qualitative research. The major themes that emerged during the analysis are used in the Results section to address specific project goals, objectives and performance measures.

### RESULTS

This section first presents overall results from the project tasks beyond the goals and objectives identified in the Introduction. Subsequently, the results associated with each goal and objective are presented and discussed.

### OVERALL MODE CHOICE RESULTS

The best predicted model result is presented in Table 6. This model was used to predict the Hiker Shuttle ridership had the intelligent transportation system not been present. Again, this model should not be used to predict future ridership. That was not the intended function of the model.

| Variable   | Coefficient              | Standard Error           | t-stat | Mean of X |  |  |  |  |
|--|--------------------------|--------------------------|--------|-----------|--|--|--|--|
| Constant   | 2.802                    | 0.4318                   | 6.489  | -         |  |  |  |  |
| Bear Lake Daily Entrance Count                       | 4.046 x 10 <sup>-4</sup> | 6.048 x 10 <sup>-5</sup> | 6.691  | 3383      |  |  |  |  |
| High (°F)  | 1.870 x 10 <sup>-2</sup> | 5.150 x 10 <sup>-3</sup> | 3.632  | 78.9      |  |  |  |  |
| ITS Activation                                       | 0.2791                   | 9.073 x 10 <sup>-2</sup> | 3.076  | 0.63      |  |  |  |  |
| Overdispersion parameter for negative binomial model |                          |                          |        |           |  |  |  |  |
| Alpha  | 0.1017                   | 1.891 x 10 <sup>-2</sup> | 5.381  | -         |  |  |  |  |

### Table 6: Mode Choice Model

n = 83

Log Likelihood Function  $[LL(\beta)] = -504.62$ Restricted Log Likelihood Function [LL(0)] = -1688.6 $\rho^2 = 1 - (LL(\beta)/LL(0)) = 1 - (504.62/1688.6) = 0.701$ Chi-Squared = 2368

The results show that the negative binomial distribution was the appropriate structure as compared with the Poisson distribution because the alpha parameter, which is a measure of overdispersion, was not statistically significant [5]. This means that the mean is not equal to the variance. Also notice that the  $p^2$  statistic is relatively high. A perfect model has a  $p^2$  statistic equal to one [5]. Therefore, the model is explaining some amount of variation.

Figure 20, Figure 21, and Figure 22 show plots of each variable in the model against one another. As demonstrated by the essentially zero R<sup>2</sup> value, there is no correlation between Bear Lake Daily Entrance counts and the high temperature. The plot of Bear Lake Daily Entrance Count vs. ITS shows that regardless of whether or not the ITS was active (0 vs. 1), there is a similar distribution of Bear Lake Daily Entrance Counts. Therefore, these variables are not correlated. A similar result is found when looking at the plot of high temperature versus whether or not the ITS was active.



Figure 20: Bear Lake Daily Entrance Count vs. High Temperature



Figure 21: Bear Lake Daily Entrance Count vs. ITS



Figure 22: High Temperature vs. ITS

Figure 23 shows the predicted value in comparison to the observed ridership.



The average percent error of the model's prediction was 31.2%. The error can be attributed to weather, day of the week, month, or other unknown variables. Also, Figure 23 shows that the prediction for September is more variable. Although the weather, day of the week, and month were attempted for inclusion in the model, the small sample size likely caused the variables to not be statistically significant. The average observed predicted ridership was 404 boardings per day. The model predicted an average ridership of 301 boardings per day. Consequently, the average difference between observed and predicted is 103 boardings per day that can be attributed to the intelligent transportation system, a. 34 percent increase in ridership. The result is similar to the 30 percent increase observed as a result of a traveler information system implemented at Grand Canyon National Park with similar characteristics (connection between gateway community and park and use of dynamic message signs and highway advisory radio) [12].

### **Estimating Emissions Pollution Reduction:**

To compute the emissions pollution reduction, first the grams per day for each pollutant were calculated using the Environmental Protection Agency Motor Vehicle Emissions Simulator (MOVES 2010a). To determine the appropriate factors, the vehicle types must first be identified. From the HPMS Field Manual [13], the vehicle type that the mode shift is expected to replace is passenger vehicles. Passenger vehicles are defined as "All sedans, coupes, and station wagons manufactured for the

purpose of carrying passengers and including those passenger cars pulling recreational or other light trailers" [13].



Figure 24: Silver Route vehicle

In addition, the Silver Route (Figure 24) was added to connect the Fairgrounds Park-and-Ride with the Estes Park Visitors Center. Figure 24 shows that the Silver Route vehicle is a four-tire, single unit vehicle. According to the HPMS Field Manual vehicle classification system, this type of shuttle is not defined as a Type 4 "Bus." Instead, it is defined as a Type 3: Other Two-Axle, Four-Tire, Single-Unit Vehicles. Therefore, Table 7 presents the factors for each of the sixteen considered pollutants for a passenger vehicle and a two-axle, four tire, single-unit vehicle.

### **Table 7: Pollutants**

| Pollutant                             | Passenger Vehicle Multiplier | Shuttle Multiplier |  |  |
|---------------------------------------|------------------------------|--------------------|--|--|
|                                       | (grams/day)                  | (grams/day)        |  |  |
| Ammonia (NH3)                         | 0.075126                     | 0.03803            |  |  |
| Atmospheric Carbon Dioxide (CO2)      | 876.843                      | 502.334            |  |  |
| Carbon Dioxide Equivalent (CO2_Equiv) | 880.333                      | 505.055            |  |  |
| Carbon Monoxide                       | 8.5026                       | 5.79969            |  |  |
| Methane (CH4)                         | 0.013742                     | 0.00907            |  |  |
| Nitrogen Dioxide (NO2)                | 0.20009                      | 0.1484             |  |  |
| Nitrogen Oxide (NO)                   | 1.3702                       | 1.00294            |  |  |
| Nitrous Oxide (N2O)                   | 0.010328                     | 0.00816            |  |  |
| Non-Methane Hydrocarbons (NMHC)       | 0.24392                      | 0.19205            |  |  |
| Oxides of Nitrogen (Nox)              | 1.5703                       | 1.15134            |  |  |
| Particulate Matter (PM10)             | 0.027199                     | 0.01593            |  |  |
| Particulate Matter (PM2.5)            | 0.025039                     | 0.01467            |  |  |
| Sulfate PM10                          | 0.000101                     | 0.000056           |  |  |
| Sulfur Dioxide (SO2)                  | 0.016983                     | 0.00973            |  |  |
| Total Hydrocarbons (HC)               | 0.25766                      | 0.20112            |  |  |
| Volatile Organic Compounds (VOC)      | 0.24915                      | 0.19617            |  |  |

Next, researchers calculated the daily decrease for each pollutant as a result of the passenger vehicles removed based on the assumptions identified in the methodological section. A sample calculation for ammonia is provided.

Ammonia, passenger vehicle, daily emissions *decrease* = (0.075126 grams/day)\*(20 miles roundtrip)\*(29 vehicles/day) = 43.573 grams/day

Similarly, they calculated the daily increase for each pollutant as a result of the provision of the Silver Route based on the assumptions identified in the methodological section. A sample calculation for ammonia is provided.

Ammonia, shuttle, daily emissions *increase* = (0.03803 grams/day)\*(48 trips/day)\*(2.8 miles/trip) = 5.111 grams/day

Next, the researchers multiplied the daily results by 53, the number of days during which the intelligent transportation system was in operation for both the passenger vehicles and shuttle.

Ammonia, passenger vehicle, system operation = (43.573 grams/day)\*(53 days) = 2309.4 grams

Ammonia, shuttle, system operation = (5.111 grams/day)\*(53 days) = 270.9 grams

Then, they converted the results into pounds.

Ammonia, passenger vehicle, system operation = (2309.4 grams)\*(0.00220462 lbs/gram) = 5.0913 lbs

Ammonia, shuttle, system operation = (270.9 grams)\*(0.00220462 lbs/gram) = 0.5972 lbs

Finally, researchers subtracted the two results to find the next effect.

0.5972 lbs - 5.0913 lbs = -4.4941 lbs

The result shows that the net effect is a decrease in the amount of ammonia pollutant as a result of the intelligent transportation system. The following table shows the results for the other pollutants.

#### **Table 8: Emission Results**

|                                       | Silver Shuttle |          |           | Passenger Vehicles |            |           |           |           |          |
|---------------------------------------|----------------|----------|-----------|--------------------|------------|-----------|-----------|-----------|----------|
|                                       |                |          | Emissions | Emissions          |            |           | Emissions | Emissions |          |
|                                       |                | Daily    | Increase  | Increase           |            | Daily     | Decrease  | Decrease  |          |
|                                       |                | Emission | System    | System             |            | Emissions | System    | System    | Net      |
|                                       | Multiplier     | Increase | Operation | Operation          | Multiplier | Decrease  | Operation | Operation | Effect   |
| Pollutant                             | (grams)        | (grams)  | (grams)   | (lbs)              | (grams)    | (grams)   | (grams)   | (lbs)     | (lbs)    |
| Ammonia                               | 0.03803        | 5.111    | 270.9     | 0.5972             | 0.075126   | 43.573    | 2309.4    | 5.0913    | -4.4941  |
| Atmospheric Carbon Dioxide (CO2)      | 502.334        | 67514    | 3578226   | 7888.63            | 876.843    | 508569    | 26954154  | 59424     | -51535   |
| Carbon Dioxide Equivalent (CO2_Equiv) | 505.055        | 67879    | 3597608   | 7931.36            | 880.333    | 510593    | 27061436  | 59660     | -51729   |
| Carbon Monoxide (CO)                  | 5.79969        | 779.478  | 41312.4   | 91.0780            | 8.5026     | 4931.5    | 261370    | 576.22    | -485.14  |
| Methane (CH4)                         | 0.00907        | 1.219    | 64.6      | 0.142              | 0.013742   | 7.9704    | 422.43    | 0.93130   | -0.789   |
| Nitrogen Dioxide (NO2)                | 0.1484         | 19.94    | 1057      | 2.330              | 0.20009    | 116.05    | 6150.8    | 13.560    | -11.230  |
| Nitrogen Oxide (NO)                   | 1.00294        | 134.795  | 7144.14   | 15.7501            | 1.3702     | 794.72    | 42120     | 92.858    | -77.108  |
| Nitrous Oxide (N2O)                   | 0.00816        | 1.10     | 58.1      | 0.128              | 0.010328   | 5.9902    | 317.48    | 0.69993   | -0.572   |
| Non-Methane Hydrocarbons (NMHC)       | 0.19205        | 25.812   | 1368.0    | 3.0159             | 0.24392    | 141.47    | 7498.1    | 16.530    | -13.514  |
| Oxides of Nitrogen (Nox)              | 1.15134        | 154.74   | 8201.2    | 18.081             | 1.5703     | 910.77    | 48271     | 106.42    | -88.34   |
| Particulate Matter (PM10)             | 0.01593        | 2.141    | 113.5     | 0.2502             | 0.027199   | 15.775    | 836.10    | 1.8433    | -1.5931  |
| Particulate Matter (PM2.5)            | 0.01467        | 1.972    | 104.5     | 0.2304             | 0.025039   | 14.523    | 769.70    | 1.6969    | -1.4665  |
| Sulfate PM10                          | 0.000056       | 0.0075   | 0.40      | 0.00088            | 0.000101   | 0.0586    | 3.10      | 0.00684   | -0.00597 |
| Sulfer Dioxide (SO2)                  | 0.00973        | 1.31     | 69.3      | 0.153              | 0.016983   | 9.8501    | 522.06    | 1.1509    | -0.998   |
| Total Hydrocarbons (HC)               | 0.20112        | 27.031   | 1432.6    | 3.1584             | 0.25766    | 149.44    | 7920.5    | 17.462    | -14.304  |
| Volatile Organic Compounds (VOC)      | 0.19617        | 26.365   | 1397.4    | 3.0806             | 0.24915    | 144.51    | 7658.9    | 16.885    | -13.804  |

### OVERALL ON-SITE SURVEY RESULTS

Dynamic message signs were placed at three locations en route to Estes Park: one near the Town of Lyons (Location 1), one on the descent into Estes Park (Location 2, a.k.a. Pinyon Trail), and one right before the turn for the Fairgrounds Park-and-Ride (Location 3, a.k.a. Community).



Figure 25: Dynamic Message Sign Locations

To help determine the most effective placement of the DMS, both shuttle and visitor survey respondents were asked to indicate at which locations they saw a DMS. The results are shown in Figure 26. Surprisingly, the smallest percentage of respondents saw a DMS at Location 3 for both the shuttle and visitor survey. Less than half of all respondents saw the DMS at that location (46.3 percent of shuttle survey respondents and 39 percent of visitor survey respondents). Approximately 71 percent of shuttle survey respondents saw the DMS at Location 2, while 55.5 percent of visitor survey respondents saw the DMS at that location. This location appears to be the most effective, especially considering the high percentage of shuttle. Location 1, outside of Lyons, was the second most effective sign as it was seen by 51.2 percent of shuttle survey respondents and 60 percent of visitor survey respondents. What is important to note is that the most "seen" sign was only seen by 71 percent of respondents, and most signs were only seen by about half of the respondents (from both surveys). These results indicate that a regionalized application of signage appears to be more effective for Estes Park/Rocky Mountain National Park, as more than half of the respondents drove by one or more DMS without seeing it.



Figure 26: Locations Where Respondents Saw DMS

Respondents were also asked to indicate on a scale from 1 (strongly disagree) to 5 (strongly agree) if they felt the DMS were in a good location. Location 2 (on the descent into Estes Park) was rated as the best location by both shuttle and visitor survey respondents. The data associated with these questions can be found in Appendix H and J. It is recommended that caution is used when interpreting the data associated with these questions, as some respondents expressed uncertainty regarding the locations where they saw a DMS.

### OVERALL MAIL SURVEY RESULTS

Mail survey respondents were asked multiple questions to determine their prior experience using shuttles. One challenge of encouraging alternative transportation use in Estes Park/ROMO is that many

of the area visitors come from Midwestern and Plains states where public transportation is not as widely used as it is in larger cities on the east and west coasts. When asked how often they use public transportation at home, approximately 85 percent of respondents indicated that they 'never' or 'hardly ever' use public transportation. The complete results of this question are shown in Figure 27. Due to the exceptionally low experience use-history among area visitors, it is critical that shuttle routes be marked clearly and shuttle schedules be designed in simple and easy to read formats. The system must be made as easy to use as possible to accommodate new users.



Figure 27: Use of Public Transportation at Home

It was hypothesized that respondents with previous experience using shuttles at other parks or recreation areas would be more likely to use shuttles at Estes Park/ROMO. To test this hypothesis, respondents were asked if they had used shuttles while visiting another park or recreation area and 36.6 percent answered 'yes.' In addition, 46.6 percent of respondents indicated that they used shuttles on their most recent visit to Estes Park/ROMO. A two-way table was used to compare the results of these two questions, the results of which can be found in Appendix M. These results demonstrate no association between shuttle use at other recreation areas and shuttle use in Estes Park/ROMO.

To further gauge visitor travel behavior, data were collected on the various modes of transportation commonly used by visitors to ROMO. Figure 28 presents the results. Nearly 95 percent of respondents indicated that they "always" or "often" use a car to get around when visiting a recreation area. In contrast, only 18.6 percent of visitors indicated that they "always" or "often" use visitor shuttles. Walking was ranked high, with approximately 60 percent of respondents indicating that they "always" or "often" walk to get around when visiting recreation areas. Bicycles and tour buses were ranked very low, with 69 percent and 78.3 percent of respondents, respectively, stating that they "never" use theses modes of transportation to get around at recreation areas. While automobiles were used more than any



other form of transportation, these data suggest that walking and visitor shuttles are the two most preferred alternative modes of transportation by ROMO visitors.

Figure 28: Use of Travel Modes when Visiting Parks/Recreation Areas

Several questions were used to evaluate the factors influencing respondents' use of shuttles. First, respondents were asked their specific reason for using shuttles. Nearly 70 percent of respondents indicated that they used shuttles to visit attractions within ROMO. Approximately 37 percent of respondents claimed they used the shuttles to visit shops in Estes Park (these total more than 100 percent because respondents were instructed to "check all that apply"). There were no other significant reasons for shuttle use reported by respondents.

Due to rising national fuel costs, it was hypothesized that the price of gasoline would influence visitors' decisions to use shuttles. However, when asked, 77 percent of survey respondents indicated that the price of gasoline did not influence their decision. Thus, it can be concluded that fuel costs do not have a significant influence on a visitor's choice of travel mode. The results of this question are shown in Figure 29.



Figure 29: Influence of Gasoline Costs on Respondents Decisions to Use Shuttles

In an effort to determine potential strategies for promoting shuttle use, respondents were asked to rate eleven potential scenarios on a three point scale from "not at all increase my use" to "strongly increase my use." Detailed results for the top three strategies are presented in Figure 30. "Special recreation opportunities, such as drop-off and pick-up for one-way hikes," was ranked highest, with 36.4 percent of respondents stating that this strategy would "strongly increase" their use of shuttles. "Direct shuttle routes between parking and park attractions" ranked second with 30.4 percent of respondents stating it would "strongly increase" their on-site surveys also show support from respondents for a direct route. Comments include:

- "The [Silver Route] shuttle doesn't seem worth it. The other shuttles in the park are great. It would be better if the shuttle went right to the Beaver Meadows Visitor Center."
- "There should be a shuttle (Hiker) that stops at/near Moraine Visitor Center on the way to/from Park & Ride."

These results support our recommendation to add a stop along the Hiker Shuttle at the Fairgrounds Park-and-Ride. The third highest ranked strategy was "electronic signs showing real-time arrival/departure." The use of real-time arrival messaging is a logical addition to an intelligent transportation system, and these data suggest that the technology would be well-received by Estes Park/ROMO visitors.



Figure 30: Influence of Potential Strategies on Future Shuttle Use

Four strategies ranked particularly low, with 40 percent or more of respondents stating that the strategy would 'not at all increase' their use of shuttles. These strategies include:

- An interpretive program played onboard the shuttles to describe the area's natural and cultural history
- Additional space for gear such as coolers, camping gear, strollers or bicycles
- Information about the environmental benefits of shuttle use, such as reduced air and noise pollution
- Park shuttles that operate on alternative fuels such as ethanol, propane, electricity or biodiesel

It is important to note that although these four strategies were ranked as the least effective strategies for influencing future shuttle use, they could none-the-less improve the visitor experience. Detailed results for all eleven potential strategies can be found in Appendix L.

To help determine the best ways to provide visitors with traveler information, respondents were asked to rank thirteen travel information sources on a five point scale from "not at all useful" to "very useful." The results are shown in Figure 31. The top three travel information sources ranked as "very useful" were the ROMO website (68.6 percent), online (61.0 percent), and park brochures/maps (60.9 percent). While these travel information sources are already used by Estes Park/ROMO, the data suggest that continued use and improvement of these sources would benefit visitors.

The highway advisory radio (HAR) was ranked the lowest of all thirteen travel information sources, with only 4.4 percent of respondents indicating that the HAR would be "very useful." This corroborates the findings from the on-site surveys, which showed low use of the HAR by visitors and minimal support for the use of the HAR by project stakeholders. Also worth noting is that only 15.7 percent of respondents

stated that Smartphone applications would be "very useful." This information is important to keep in mind, as several project stakeholders expressed a desire to see Smartphone applications used as part of an intelligent transportation system in future years.



Figure 31: Usefulness of Travel Information Sources

There were also several very useful and informative written comments provided by mail survey respondents. A full list of written comments is included with the "Detailed Mail Survey Results" in Appendix L. The comment below captures many of the concerns that were mentioned by survey respondents:

"My original comments to the surveyor were a result of my frustration with the newly established shuttle route and the absence of signage leading to new parking lot by the fairgrounds. Much of that lack has been corrected, but the sign of the actual lot must be more obvious, bigger! Believe me: I know how easily visitors do not see signs. What still remains, however, is the suggestion that the new shuttle will take visitors directly into the park. If I found myself dropped at the visitor's center to take another shuttle, I would not be happy!! As a visitor, I would be furious to learn that this first shuttle was one of three I needed to arrive at Bear Lake; i.e. shuttle from fairgrounds to the visitors center, shuttle from VC to park and ride, and yet another shuttle to Bear Lake or Glacier Gorge. Our need for a workable shuttle system is very important since RMNP is a park that is being 'loved to death.' However, such a system will need clear and visible signage outside the park (you've made a good start there with signs outside Lyons and just before the descent into Estes), clear directions toward the first shuttle, and adequate parking (such as keeping huge horse trailers out of the shuttle's lot). Also, I'm afraid that having to take three shuttles to reach one destination inside the park is both unwieldy and unappealing!!!"

### OVERALL STAKEHOLDER INTERVIEW RESULTS

A few themes emerged from the stakeholder interviews that do not relate to specific project goals. For example, stakeholders were asked to identify technologies they would recommend as part of a future intelligent transportation system in Estes Park/Rocky Mountain National Park. The use of real-time arrival messaging boards was mentioned by several stakeholders, as well as a web-camera located in downtown Estes Park that could show real-time parking lot conditions for various locations within ROMO.

Additionally, numerous stakeholders discussed the potential for SmartPhone applications that would provide visitors with information about shuttle routes and schedules, locations of parking areas, and real-time information about parking lot conditions within ROMO. One stakeholder said, "[I would like it] if there was an application...to indicate where the parking is. That's the direction that...transportation is headed. People want to look to their phone for, 'when am I going to be able to get the bus, what time is that bus going to be here, where can I park?'"

Another stakeholder added, "In the future... I think that the phone applications where you can feed real time traffic and weather would be useful." A third stakeholder echoed these sentiments; "A lot of people will choose the web in today's society. My son is 22 years old and he doesn't get a newspaper... he goes straight to electronic information. It's all on the net for him. Well, it's on his I-Pad. He would check that before he goes anywhere, especially on a trip [to a recreation area]."

A few small issues also surfaced during the pilot ITS deployment. One stakeholder commented, "We had a situation where... a family from out of town read the [DMS] sign, they parked at the new Park-and-Ride, and they got on the Silver Route which brings them over to the Visitor's Center. And they got into the Visitor's Center and one of the volunteers said, 'oh, go back and get your car and take it up to Bear Lake.' Which I was upset about because it is counterproductive, it's just the opposite of [what we're trying to do]." A similar situation was observed by a data collection team member during the survey period in Estes Park. While both of these events were observed during the week (when Bear Lake is less busy), it nonetheless contributes to visitors forming the impression that congestion is not a big enough issue to warrant the need of shuttles. Volunteers and staff should present a consistent message promoting shuttle use in order to ensure visitors that the Estes Park/Rocky Mountain National Park shuttle system is an enjoyable and reliable service. The DMS and HAR will only be effective if the information provided on them is supported by volunteers and staff.

This same stakeholder stressed the need for consistent and accurate messaging on all static and dynamic message signs. The respondent was particularly concerned with a static sign placed near the Bear Lake Park-and-Ride, which while not a part of the evaluation, nonetheless is a component of the overall transit system. The respondent stated, "I had just passed the sign saying that Bear Lake was full... ...and there must've been 30 parking spots up in Bear Lake that were available. And yet the sign was still up that said it was full, so to some degree you can't blame [people] that they don't believe us...and again that's communications." This observation highlights the need for accurate information on all static and dynamic message signs. For the DMS and HAR to effectively encourage shuttle use, visitors must trust the information that is presented to them, as well as the information on associated static signs. This

trust can only be built over time if the messages presented on all signage are consistent with what visitors actually experience.

Multiple stakeholders were concerned that visitors were confused by the messages on the DMS, specifically, that visitors may have thought that the Fairgrounds Park-and-Ride was the same as the Bear Lake Park-and-Ride located within ROMO. This may have interfered with surveying as well, if some visitors were in fact influenced by the ITS to use *a* park-and-ride, but were not captured during surveying because they drove straight to the Bear Lake Park-and-Ride. When asked if they felt the DMS and HAR influenced visitors to use shuttles, one respondent said, "I'm under the impression it may have actually helped inside the park some, as it didn't actually help the situation outside the park. I think it might have called attention to Bear Lake."

When this stakeholder was asked explicitly if he or she felt visitors were confusing the Fairgrounds Parkand-Ride with the Bear Lake Park-and-Ride, the stakeholder responded, "Yes. I do." Another stakeholder said, "I don't know why the town called it Park-and-Ride. You know, now we have two Park-and-Rides, one in the park and one downtown. And the one up here has been called Park-and-Ride for eons...Why would two things have the same name?"

These comments highlight the need for an original name to distinguish the Fairgrounds Park-and-Ride lot from the Bear Lake Park-and-Ride lot. Unique and descriptive names for all transportation facilities and routes will eliminate confusion among visitors and hopefully improve the travel experience, thereby encouraging visitors to use the shuttle services again in the future.

### GOAL ONE: SHIFT VISITORS' TRAVEL MODE FROM PRIVATE VEHICLES TO SHUTTLE BUSES

### *Objective 1: Increase daily ridership of shuttles when the 2011 ITS system is operable as compared to the periods when the ITS is not operable*

The model predicted an average daily ridership of 301 passengers. In contrast, the observed average daily ridership was 404 passengers. Thus, the increase of 103 passengers per day (approximately 34%) can be attributed to the intelligent transportation system.

### Objective 2: Demonstrate that the 2011 ITS system has influenced visitors to utilize the shuttle system

Two performance measures were identified for this objective. The first one was the percentage of survey users who were influenced by the DMS/HAR to utilize the shuttles. Shuttle survey respondents were asked to indicate on a five point scale how strongly they agreed or disagreed with the statement that the information on the HAR influenced them to park at the Fairgrounds Park-and-Ride and use the Silver Route shuttle. The results show that 80 percent of respondents who tuned to the HAR, or 23.5 percent of total survey respondents, strongly agreed that they were influenced by the HAR to use the shuttle. Fifteen percent of those who tuned to the HAR, or 4.4 percent of total survey respondents, somewhat agreed with this statement. Results from this question are shown in Figure 32.



Figure 32: Influenced by HAR to Use Silver Route

While it is hard to draw conclusions about the success of the HAR on influencing visitors to use shuttles, visitor comments suggest that several respondents learned about the shuttles from the DMS and HAR, but were unable to use the Silver Route shuttle because they could not find the Fairgrounds Park-and-Ride. A sample of visitor comments from both the shuttle and visitor surveys include:

- "Better signage needed for Silver Route at Fairgrounds."
- "Need to give flyer or something on where/when shuttles come. Fairground electronic sign then nothing to direct you to where actual shuttle is. Great otherwise."
- "Some instructions in parking lot."
- "The signs weren't clear once I turned. You should have a sign where the shuttle stops to pick people up."
- "Was hard to find shuttle stop at Silver Route Park-and-Ride."
- "Once on community drive the signs are small, absent at 1st stop sign, or confusing."
- "Didn't know how to get there based on signs. Thought Park-and-Ride was for work commute."
- "Very poor trying to find the new park & ride from RT36. As a volunteer at Bear Lake, I strongly support the development of the shuttle system. The hiker & bear lake shuttle is superb & usually well used! I found the Silver shuttle a great idea but signage needs to be large & continuous! I also feel that the initial electric message suggests that one can take the shuttle straight into RMNP & not just the EPVC."

The second performance measure attempted to identify the percentage of survey users who learned about the shuttles from the DMS/HAR. The implementation of the ITS was intended to shift visitors from private vehicles to shuttles by providing them with traveler information, including shuttle routes and times. Respondents were asked to indicate where they learned about the shuttles in order to determine if the DMS and HAR successfully provided visitors with shuttle information. Respondents were instructed to specify every source of information. Many respondents indicated that they learned

about the shuttles from multiple sources. The results for the shuttle and visitor survey are shown in Figure 33 and Figure 34, respectively.

For shuttle respondents (Figure 33), the primary source of information about the shuttles was the DMS at 41.5 percent, which is nearly twice as high as any other source of information. The HAR, at 21.5 percent, was ranked as the second most common source of information.



Figure 33: Shuttle Survey: Sources of Information about Shuttles

Approximately 20 percent of visitor survey respondents indicated that they learned about the shuttles from the DMS, making it one of the most common sources of shuttle information among both survey groups (Figure 34). The HAR, however, was only listed by 4 percent of visitor survey respondents.



Figure 34: Visitor Survey: Sources of Information about Shuttles

To further quantify the effect of the 2011 pilot ITS deployment, mail survey results were also used. Mail survey respondents were asked to report the modes of transportation they planned to use on their most recent trip to Estes Park/ROMO, the modes they actually used, and an explanation if their actual mode use differed from their planned use. Figure 35 compares planned mode use to actual mode use. What is important to note is the nearly two-fold increase in actual shuttle use compared to planned shuttle use. Approximately 23 percent of respondents actually used a mode of transportation different from what they had planned to use. Open ended explanations for the change in planned mode use were loosely coded using NVivo software. Two dominate themes emerged from the coded responses revealing that respondents primarily switched from automobile use to shuttle use because they 1) learned about the shuttles and decided to try them or 2) saw or learned that parking lots were full and were thus forced to use an alternative. In the "learned about the shuttles" category, a subtheme included the desire to avoid driving in crowded conditions.



Figure 35: Planned Shuttle Use vs. Actual Shuttle Use

### GOAL TWO: QUANTIFY THE REDUCTIONS IN EMISSIONS POLLUTION AS A RESULT OF THE MODE SHIFT

The net effect of shifting some visitors from private vehicles to the shuttle system while providing an additional connection between the Fairgrounds Park-and-Ride and the Estes Park Visitor Center was a decrease in all sixteen types of emissions considered using MOVES 2010a.

### GOAL THREE: INTERCEPT VISITORS EAST OF THEIR ARRIVAL TO THE TOWN OF ESTES PARK

### *Objective: Increase usage of the new park-and-ride lot in the Town of Estes Park during the 2011 ITS deployment*

For this objective, three performance measures were identified. The first one was the development of ridership counts with and without ITS. The Silver Route ridership was proposed as a performance measure for this goal. However, considering the effect of events and the use of the shuttle by students employed at local businesses, the Silver Route ridership is not expected to provide an accurate understanding of whether or not visitors were intercepted east of their arrival to the Town of Estes Park. Therefore, the other performance measures considered for this goal should be used to gauge its success.

The second performance measure was the calculation of the Fairgrounds Park-and-Ride lot occupancy, with and without ITS. The traffic counters at the Fairgrounds Park-and-Ride did not perform as expected as discussed in the Data section. Expectations were that few to no vehicles would be counted as occupying the park-and-ride overnight. Instead, the raw data implied that there was a significant

overnight occupancy. Furthermore, during the time when the counters were deployed, the occupancy counts (calculated using the data) continued to build. These results did not coincide with actual observations. Therefore, this data cannot provide an indication of whether or not this goal was achieved.

For the third performance measure, the percentage of survey users influenced by the DMS/HAR to utilize the Silver Route was calculated. Of those respondents who completed a shuttle survey onboard the Silver Route, 66.7 percent of total respondents indicated that they saw a DMS, or 86 percent of respondents categorized as "visitors" (a two-way table displaying the breakdown of responses by respondent type can be found in Appendix I). Additionally, 29.4 percent of respondents indicated that they tuned to the HAR, or 45.5 percent of respondents categorized as "visitors." Overall, 47.6 percent of respondents *who saw* a DMS tuned to the HAR.

Respondents were asked to indicate on a five point scale how strongly they agreed or disagreed with the statement that the information on the HAR influenced them to park at the Fairgrounds Park-and-Ride and use the Silver Route shuttle. Eighty percent of shuttle survey respondents who tuned to the HAR strongly agreed that they were influenced by the HAR to use the shuttle. Fifteen percent somewhat agreed with this statement. Figure 32 shows these results.

When data from the shuttle and visitor surveys are compared, the results show that respondents who tuned to the HAR were more likely to use the Silver Route shuttle than respondents who simply saw the DMS.

## GOAL FOUR: PEAK SPREAD THE ARRIVAL OF PEOPLE AND VEHICLES INTO ROMO USING AN "INSIDER'S TIP" ON THE HAR

### Objective: Delay the arrival of some visitors to ROMO by providing an "Insider's Tip," which tells visitors the best time to visit to avoid congestion, in the HAR message

For this objective, two performance measures were developed. The first one was to determine the percentage of survey respondents who delayed their visit to ROMO due to the "Insider's Tip" on the HAR. Survey respondents were asked to indicate on a five point scale how strongly they agreed or disagreed that the information on the HAR influenced them to visit ROMO later in the day. This question was designed to evaluate the effect of the "Insider's Tip" on peak spreading the arrival of people and vehicles to ROMO. The results for this question from the shuttle survey are shown in Figure 36. The majority of respondents selected "neither" which suggests that they did not think the question was relevant to them and could neither agree nor disagree that it influenced their travel experience. There was an even split between somewhat agree and strongly disagree (17.6 percent for each) that the information influenced respondents to visit attractions later in the day. However, the "Insider Tip" was only used 5 of the 14 days while surveys were collected. Given these data, the effect of the "Insider's Tip" on peak spreading among Silver Route riders is inconclusive.



Figure 36: Influenced by HAR to Visit ROMO Later<sup>N</sup>n the Day

The second performance measure was the documentation of stakeholders' opinions on the effectiveness of the "Insider's Tip." Stakeholders were asked to evaluate the effect of the "Insider's Tip" on peak spreading the arrival of visitors to ROMO. Three of the nine stakeholders who participated in the post-implementation interviews felt that they did not know enough about the Insider's Tip to comment on its effectiveness. The remaining six stakeholders expressed skepticism regarding the ability of the Insider's Tip to encourage peak spreading.

Weather presents a challenge for peak spreading in Estes Park because daily afternoon thunderstorms motivate visitors to start their day early so as to avoid getting caught in inclement weather. This variable limited how often the Insider's Tip could be broadcast. One stakeholder stated, "I think it's hard to see peak spreading probably in Rocky Mountain because of the weather in the afternoon and I think people want to get in early and see as much as they can in the morning. It would be difficult to get [people] to come in the afternoon if they kind of have their day planned out."

Another stakeholder added, "I think [the Insider's Tip] is great, but it's too late. Multiple day people, yeah I can understand that, but for people coming up for the day, they're coming up for the day....There are other ways to get that message out...put it on the Estes Park website or a travel website...versus putting it on the HAR and [visitors are] already on their way out."

Many stakeholders observed that the park was busier all around during the 2011 season, making peak spreading difficult to observe. "We were busier at that 4:00 p.m. to 6:00 p.m. timeframe then we have been in the past. However, ridership was up considerably in the park this summer. Those are still terrible, terrible times from ten to noon. [The message] changed nothing. ...What drivers and supervisors were telling me this year was they were seeing people staying later in the park... So was it a result of what they heard on the radio or on the broadcast? I can't answer yes or no. But I know that our peak times didn't change. Peak times were still peak times; they just lasted a little longer."

Another stakeholder felt that a small amount of peak spreading was occurring naturally. "I think a lot of our peak spreading that's happening now comes from personal experience...people are up there at 10:00am and thinking, 'hey this place is crazy,'....I think that if you had that to compare it to [the Insider Tip], I think [personal experience] is probably more effective."

Overall, stakeholders did not express strong support for the use of the 'Insider's Tip' as a tool to encourage peak spreading.

## GOAL FIVE: IMPROVE THE VISITOR EXPERIENCE THROUGH BETTER DISSEMINATION OF TRAVELER INFORMATION

### *Objective: Document a statistical correlation between a positive visitor experience and utilization of the information from the 2011 ITS*

The performance measure for this objective sought to determine visitor ratings of visitor experience and use of the 2011 ITS. Shuttle survey respondents were asked to rate both their overall experience and travel experience while visiting Estes Park/Rocky Mountain National Park. While the data show very high satisfaction ratings among both survey groups, slightly higher overall experience ratings and travel experience ratings were reported by shuttle survey respondents. On a five point scale from very poor (1) to very good (5), the mean overall experience rating for shuttle survey respondents is 4.67, compared to 4.61 for visitor survey respondents. The mean travel experience rating for shuttle survey respondents is 4.26, which is also slightly higher than reported by visitor survey respondents, at 4.15.

These results were further analyzed by respondent type to extrapolate visitors' experience ratings from the shuttle survey responses. A two-way comparison of these results can be found in Appendix I, including the breakdown for "local residents" and "employees" (both groups rated their overall experience and travel experience lower than visitors). For overall experience, there was no difference in ratings between the different survey groups. However, shuttle survey respondents categorized as "visitors" reported a mean travel experience rating of 4.48, which is markedly higher than the visitor survey rating of 4.15. These results are shown in Figure 37. Although Silver Route ridership was low during the pilot season, these results indicate that visitors who used the Silver Route shuttle had better travel experiences, on average, than respondents who did not use the Silver Route shuttle. As the DMS and HAR were the two primary sources of information about the Silver Route shuttle, these results demonstrate improved visitor experience and travel experience through dissemination of traveler information.



Figure 37: Experience Ratings for Shuttle and Visitor Survey Respondents

Overall, shuttle survey respondents categorized as "visitors" rated their travel experience the highest of all groups (4.48). Among visitor survey respondents, there were no differences in experience ratings between shuttle users and non-users. Despite congestion and parking issues, respondents from both survey groups indicated high satisfaction with their overall experience and travel experience.

Several respondents provided written comments with their surveys, and these comments offer useful ideas for improving the information that is provided on the DMS and HAR. A full list of all visitor comments can be found in Appendix H, J and L within the 'Detailed Survey Results' headings. A sample includes:

- "Put "free" on the ads coming into town."
- "Put free on every sign. I think it says park & ride only. Everyone loves free."

This suggestion was addressed, as the DMS message set was changed during the pilot season to explicitly state that the shuttles are free. Other comments include:

- "Free shuttle signs need to say when the shuttle service starts. 10:00am is a little late but that needs to be on the sign."
- "We were told the shuttle bus went into Rocky Mountain National Park, (which it did). We didn't know it didn't go all the way through. It would have been nice to know all the info up front."
- "Time to downtown Estes Park would be good to add to new shuttle park by Fairgrounds."

These comments demonstrate that the visitor experience could be improved by providing more information via DMS, HAR or static signage.

# GOAL SIX: SUCCESSFULLY COLLABORATE WITH THE TOWN OF ESTES PARK, CDOT, AND CFLHD

# Objective: Show support from stakeholders in the Town of Estes Park for the 2011 and future ITS, show support from CDOT for the 2011 and future ITS on the corridor to ROMO, show support from CFLHD for the 2011 ITS deployment

For this objective, the performance measure was the documentation of stakeholder opinions on the benefits of collaboration, challenges experienced while collaborating, satisfaction with the 2011 ITS deployment, effectiveness of DMS/HAR to affect driver behavior, and support for future ITS deployments. All stakeholder interviews were transcribed and analyzed using qualitative research software. Quotes were selected from the interviews to highlight the common successes and challenges discussed by the stakeholders. A brief summary of key points from the stakeholder analysis is provided. Direct quotes are also used to offer specific examples and comments from stakeholders.

### Benefits and Challenges of Collaboration

Nine stakeholders participated in post-implementation interviews during which they were asked to discuss the benefits they observed from collaborating with other agencies during the pilot ITS deployment. The primary benefits mentioned included improved communication and expanded resources.

One stakeholder said, "I think [this collaboration] is huge. Federal Highways and Rocky and even our transit provider have got a new burst of energy with this new hub and a new sense of focus. And CDOT has become very engaged where they weren't before...It's just a huge collaborative partnership going on right now."

Several stakeholders discussed the long-term benefits that were initiated by the pilot study. "I think bringing in CDOT...not only them loaning us some equipment but just building that relationship... getting that partnership with them to where they could update signs through their control center rather than us having do it here... In the future I think that's going to be hugely beneficial. And it was a good eye opener for them too, to see how much traffic we're responsible for putting on their road because of what the park attracts."

One respondent mentioned organizational strategies that worked well to keep communication open among the partners. "I think there were some things that were done well with the pilot. The calls in the beginning... e-mail [communication]...and having a designated contact from each of the entities was another good thing."

These comments reflect a strong collaborative effort among the partner agencies. Maintaining this collaboration and further strengthening communication will be paramount as the stakeholders continue to work towards the common goal of improved transportation in Estes Park/Rocky Mountain National Park.

While all stakeholders expressed satisfaction with collaboration among the various agencies, a few challenges were mentioned. Foremost, all stakeholders said that the project required less effort from their organization than what was anticipated. Though stakeholders expressed satisfaction with the

limited amount of time and resources they had to contribute to the project, this could ultimately result in stakeholders feeling a lack of connection and ownership if an ITS is permanently implemented.

Communication, which was considered a strength of the pilot study by many stakeholders, was also mentioned as an area for improvement. "Sometimes...people weren't always as responsive as we would have liked... I think sometimes folks get busy. Getting answers or getting something took a little longer."

Another stakeholder added, "The communications and marketing I think became the biggest challenge... that was probably the biggest [challenge] was just trying to urge them to get information out there. If it's done again next year I think that it will be a lot easier and we'll have more time to prepare for it."

Despite these few challenges, the majority of stakeholders felt there were no issues concerning collaboration. Overall, these comments demonstrate successful collaboration among the various agencies and enthusiasm for the use of ITS in Estes Park/Rocky Mountain National Park. "Everybody's really stepped up," one stakeholder stated. "I'm pretty excited about that actually."

### Satisfaction with the 2011 ITS Deployment

Throughout the evaluation, all stakeholders expressed satisfaction with the overall study and a desire to use ITS in future years. However, the majority of stakeholders felt that the pilot study did not address major transportation issues in the area. When asked if they felt the ITS had an effect on driver behavior, one respondent said, "I feel that if it did we didn't notice it. I don't know what else to say but the traffic congestion was still terrible, [and] parking was still terrible." Comments from stakeholders are presented here to highlight areas of improvement for future use of ITS.

As a group, the stakeholders seemed to find value in the use of DMS to provide traveler information. Despite feeling that the ITS had no effect on driver behavior, one respondent still felt the technologies should be used in future years. "I think the technologies will work. I do. I think by just placing those signs on one route in, it may have helped a little but we really needed some signage on US34 because that's a busy corridor...and also coming in from Route 7."

Another stakeholder said, "I think that the ITS application was very effective... if there was anything that couldn't be improved it wasn't due to the ITS. It was operational in nature. For instance...the [Hiker] shuttle didn't go all the way out to the park-and-ride so what would happen is...rather than park at that park-and-ride, [people] would go downtown and park...because the [Silver] shuttle only went to the Estes Park hub in town. [People] were willing to take the shuttle but they didn't necessarily want to transfer and they also wanted to have their car closer in town. If the [Hiker] shuttle would've gone all the way out to that outlying park-and-ride ... more people would've been willing to park there and just take that shuttle all the way through to the park."

Stakeholders were split on their opinions towards the use of the HAR in future years. One respondent said, "I think it's a great tool [but] also I'd like to see new technologies [like] the downloadable applications...I think we can't just rely on the radio but I think we're going to have to include the newer technologies with this program. But I think [the HAR] was effective."

Other stakeholders were more doubtful about the ability of the HAR to affect driver behavior. One stakeholder suggested that if the HAR were to be used as a permanent tool, it should be used to provide

general travel information in addition to shuttle information. Others felt that it may not be needed at all; "I don't know how many people tuned in...personally I'm still a little skeptical...I think that technology is kind of...at the end of its cycle. I don't know if a lot of people even know how to tune to their AM [radio]. I mean I certainly never use it."

Still, this stakeholder felt that the DMS and HAR may have had some effect during the 2011 season. "I think the Hiker shuttle benefitted. I think the use on the Hiker shuttle... when we get all said and done with the season will be up 50% over the previous year. That's the biggest single year jump that we've seen, so I would think that the ITS was a factor in that increase...there's been steady growth in the use of [the Hiker shuttle], but that was quite a jump. Usually we see a 10 to 15 percent increase of use."

### Support for 2011 and Future ITS Deployments

A total of 11 stakeholders participated in pre- interviews, and all 11 expressed support for the 2011 implementation. Despite challenges during the pilot deployment, all 9 stakeholders who participated in the post-interviews expressed confidence that the study had produced valuable information and lessons-learned that will help strengthen any future ITS.

During the post-interviews, many stakeholders expressed that they had not expected to see drastic changes in the first year. "Realistically, I think this is a long-term thing...as things go around here it seems you need to have things in place for two or three years until you see a noticeable impact."

Additionally, all stakeholders supported the use of DMS in future years, though many were less certain that the HAR was an essential component of the system. When asked if the ITS should be used again, one stakeholder said, "I think that the [dynamic] message signs, definitely yes. I'm not sure about the highway advisory radio." Another stakeholder added, "I think that's our only hope is to have signs like [the DMS]. I don't think it will do any good unless we do have those signs."

Many stakeholders expressed the belief that the ITS would improve over time as visitors become more aware of the system. "With the repeat customers that we have in the area [there is] strong potential for people learning the system over the years and getting comfortable using it...I almost feel like if the [dynamic message] signage is permanent it will feel like it's a more dependable system. I think when you see a temporary sign on the side of the road it doesn't give a sense of security of a dependable transit system."

Overall, all stakeholders from ROMO, CDOT, CFLHD and the Town of Estes Park indicated support for future ITS. "What's going to be the value [of the pilot study]," one stakeholder said, 'is that people are going to look for that [signage] again next summer. If they've been exposed to it and they're repeat customers they're going to say, 'I wonder if that's still running?"

After analyzing all the stakeholder opinions, the following key points and consistent themes emerged:

- DMS should be used as part of a future ITS, though not necessarily the HAR
- A stop at the Fairgrounds Park-and-Ride should be added to the Hiker Shuttle route
- Better static signage is needed on Community Drive en route to the Park-and-Ride
- In the future, DMS should be placed on additional highways on the east side of Estes Park
- The Fairgrounds Park-and-Ride needs to be distinguished from the Bear Lake Park-and-Ride

### GOAL SEVEN: INTRODUCE ROMO TO ITS SYSTEMS

### *Objective: Introduce ROMO employees to the use of ITS by implementing DMS/HAR during the summer of 2011*

The project team established a performance measure to determine if ROMO staff members recorded entries on the DMS and HAR logs showing that the equipment was implemented and utilized. While ROMO did not record DMS and HAR logs, ROMO representatives indicated that they checked on the DMS/HAR equipment on a weekly basis. In addition, the DMS and HAR were implemented and operable during the summer of 2011. Finally, this data was recorded by the Paul S. Sarbanes Transit in Parks Technical Assistance Center.

### GOAL EIGHT: SELECT ITS DEVICES EASY TO OPERATE AND MAINTAIN

#### **Objective 1: Allow ROMO remote access to the DMS for the 2011 ITS**

For this objective, the performance measure was acknowledgement by stakeholders that rented equipment allowed ROMO to remotely access and change messages on all of the DMS. The CDOT DMS were operable remotely. CDOT made requested changes to the messaging on their DMS. The vendors for the contracted DMS had promised equipment with remote operations; however, they never provided this functionality. Instead, the DMS were programmed to operate during the scheduled time periods. While they functioned during the appropriate times, ROMO could not make quick changes to the messages. This became a drawback when ROMO realized that only one of the two DMS signs were updated with a new message as requested. Instead of being able to immediately change the device, ROMO had to wait until the contractor was able to reprogram it a day later. If ROMO had remote access to the device, they would have been able to change it immediately. However, when changes were needed for the contracted DMS, the contractor made the changes.

#### **Objective 2: Allow ROMO remote access to the HAR for the 2011 ITS**

For this objective, the performance measure was acknowledgement by stakeholders that rented equipment allowed ROMO to remotely access and change messages on all of the HAR. The contractors who operated the highway advisory radio were very responsive about modifying the message as requested. In addition to changing the message in a timely manner, they were accessible on Saturdays. Finding a contractor who is willing to change messages on Saturdays is of great value considering that the majority of the visitation to the park is on the weekends.

### *Objective 3: ROMO staff spends less than 4 hours to apply for the temporary FCC license for the 2011 ITS*

The performance measure for this objective was to determine the amount of time spent to complete the FCC license for the 2011 ITS. The HAR was contracted through a private vendor. The chosen contractor applied for and obtained the FCC license to operate the equipment. Thus, ROMO had no workload related to acquiring an FCC license.

### **Objective 4: ROMO has no perceived difficulty in operating DMS and HAR**

The performance measure for this objective was to document stakeholder opinion on the ease or difficulty of DMS and HAR operations and maintenance. This objective sought to ensure easy operation of the DMS and HAR. During the post-implementation interviews, ROMO was asked if they experienced any difficulties operating the equipment. The ROMO representative indicated that they experienced very little difficulty due to the fact that the vendors were primarily responsible for changing messaging and maintaining the equipment. The availability of the vendors made operations very easy for ROMO and associated stakeholders.

Only a few issues were experienced concerning operations and maintenance during the pilot season. "One of the letters in one of the panels...seemed to be out a little bit, like every tenth message it wouldn't light for some reason. But we rang the contractor and they came out and addressed [the issue] and got it going again."

Additionally, ROMO stated that they experienced minor difficulty when trying to have the message set changed for the DMS. While the DMS were eventually changed, it took longer than anticipated. "I checked [the DMS] and [the old message] went for a week until they got it updated. But on the flip side of that...the ability of both the DMS's and the HAR to be changed remotely and by either the contractors or by CDOT, it kind of took us out of the loop of doing anything manually other than saying 'hey, change the message.' That was a big benefit."

Overall, ROMO indicated that the workload was less than they had anticipated; "There was some concern here at the park level about the work load...people thought we'd have to be manipulating messages three or four times a day...but for the pilot it went very well....we didn't have to do too much of that."

ROMO also expressed no perceived difficulty in operating the HAR and stated that remotely changing the messaging worked well. "They updated the message remotely [with a] new recording during the middle of the season...they basically switched back and forth between the standard message and the one that included the Insider's Tip...That worked really well."

Only four of the nine stakeholders who participated in the post-implementation interviews indicated that they had responsibilities concerning the operations and maintenance of the DMS and HAR. All four expressed only minor difficulties and felt that operating the ITS was less work than they had anticipated.

### **CONCLUSIONS & RECOMMENDATIONS**

Four of the eight goals were considered successful. The other four were considered partially successful.

- GOAL ONE: Shift visitors' travel mode from private vehicles to shuttle buses Successful
- GOAL TWO: Quantify the reductions in emissions pollution as a result of the mode shift -Successful
- GOAL THREE: Intercept visitors east of their arrival to the Town of Estes Park Partially Successful
- GOAL FOUR: Peak spread the arrival of people and vehicles into ROMO using an "Insider's Tip" on the HAR Partially Successful
- GOAL FIVE: Improve the visitor experience through better dissemination of traveler information - Partially Successful
- GOAL SIX: Successfully collaborate with the Town of Estes Park, CDOT, and CFLHD Successful
- GOAL SEVEN: Introduce ROMO to ITS Systems Successful
- GOAL EIGHT: Select ITS devices easy to operate and maintain Partially Successful

The findings of this evaluation indicate that the majority of the riders on the Silver Route were local residents and employees. Some of the visitors that used the Silver Route indicated that they were staying in lodging east of Estes Park. Therefore, the front range residents of Loveland, Fort Collins, and other Denver suburbs were not captured. The Bond Park/Visitor Center survey results show that 78% of respondents planned to stay in the area long enough (4-12 hrs) that using the shuttle would be feasible. Therefore, promoting the shuttle to these potential users would add to the success of any future intelligent transportation system installation.

The survey results indicated that the ROMO and Estes Park websites are two of the most preferred sources of travel information by area visitors, yet when asked how they learned about the shuttles, these websites were ranked the lowest. These websites should provide direct links to shuttle information and schedules, as the data suggests that visitors prefer to use these information sources, but are not currently finding adequate information about the shuttles. Additionally, survey results show that the rising cost of gasoline and environmental benefits have only a negligible impact on people's decisions to use shuttles. Without the impetus of cost savings, people will only choose to use shuttles if they feel that they provide an equal or more enjoyable travel experience than private automobiles. Therefore, ROMO and Estes Park Visitor Center staff and volunteers must present a consistent and positive message that promotes the use of visitor shuttles.

Mid-way through the project, the messages on the dynamic message signs were changed because there was a concern that the "PARK AND RIDE AT FAIRGRDS" message displayed on the dynamic message signs in Lyons could be confused with the Lyons' Fairgrounds. Furthermore, concern was expressed that the park-and-ride lot in Estes Park was being confused with the park-and-ride lot in ROMO. Finally, there was concern that potential users were assuming the park-and-ride lot in Estes Park was for employees only. Therefore, there is a need to better define the name for the lot in future years. It is recommended that the stakeholders involved in future projects discuss an appropriate name so that it can be promoted in a uniform manner.

The survey responses reflect a need for better signage to direct users to the Fairgrounds Park-and-Ride lot and subsequently to the shelter. Many of the users that the intelligent transportation system is trying to capture may not be familiar with alternative transportation systems. This is supported by the exceptionally low shuttle use-history reported by mail survey respondents. Therefore, it is critical that shuttle routes be marked clearly and shuttle schedules be designed in simple and easy to read formats. Exact and redundant information will encourage shuttle use.

The intelligent transportation system ran from 9:45 a.m. through 6 p.m. daily. This schedule was created to relate to the hours during which the Silver Route operated. One stakeholder mentioned that visitors start their day early at Rocky Mountain National Park because of the afternoon thunderstorms. For future intelligent transportation system operations, an attempt should be made to capture the visitors arriving earlier with the intelligent transportation system. There are two possible ways this could be accommodated. First, the Hiker Shuttle, which begins running at 6:30 a.m., could make a stop at the park-and-ride. Second, the Silver Route, which now begins operations at 10 a.m., could begin operating earlier in the morning.

Mail survey results indicate that three strategies have potential to significantly increase shuttle use: special recreation opportunities for shuttle users such as drop-off and pick-up for one-way hikes (such as a Long's Peak drop-off/pick-up), direct shuttle routes between parking and park attractions, and the use of real-time arrival messaging. Several stakeholders also provided strong support for direct shuttle routes and use of real-time technologies. Also mentioned by several stakeholders was the use of a SmartPhone application to provide visitors with travel information. The mail survey results indicate that SmartPhone applications could improve the visitor experience, though not as effectively as any of the three strategies listed above.

The peak-spreading information did not reach very many people. Several stakeholders felt that encouraging peak-spreading by advertising pre-trip would be more effective, primarily through various websites such as the ROMO and Town of Estes Park websites, and the COTRIP website operated by CDOT.

All stakeholders expressed satisfaction with the 2011 intelligent transportation study. In addition, they all felt that there was a need to employ some form of an intelligent transportation system as a transportation management tool in Estes Park/Rocky Mountain National Park. Furthermore, the stakeholders were all very supportive of the dynamic message systems. Survey results also show a significant effect on visitor awareness via the DMS. The use of DMS appears to be an effective travel information tool, and should be used as a part of a future ITS for Estes Park/Rocky Mountain National Park. In contrast, most of the stakeholders were skeptical of the effectiveness of the highway advisory radio, and survey results were inconclusive concerning the effect of the HAR. While the findings of this report indicate that the HAR may not be an ideal ITS component for the area, some form of technology is required to provide travelers with detailed shuttle information, as the DMS can only provide short messages. If the HAR is not used in future years, it is crucial that other technologies mentioned in the report are implemented, such as promotion of the shuttles in the front range, prominent shuttles links on the town and park websites, DMS messages that direct users to call COTRIP for travel information, or a combination of these strategies.

The results of the survey indicated that conveying that the shuttles were "free" was an important piece of information for potential users. While it was included in all highway advisory radio messaging, the results indicated that including this information in the dynamic message system is necessary. This is

because few users tuned into the highway advisory radio. Changes were made to the dynamic message signs midway through the intelligent transportation system operation. Unfortunately, the effect of the change is unclear, because surveys were only administered during a set period.

The intelligent transportation system scheme was developed from a regional perspective as compared to a localized perspective. When survey respondents were asked to identify which dynamic message signs they saw, the locations in Lyons and Pinyon Trail were more frequently observed than the dynamic message sign at Community. Therefore, future intelligent transportation system applications should continue to convey information from a regional perspective.

Three recommendations can be implemented for future evaluations. First, there is a phenomenon occurring in the Fairgrounds Park-and-Ride lot which is not fully understood. Therefore, an alternative means to monitor this lot to answer questions about the observed queuing over time should be considered. For example, video surveillance is an option. Second, the results of this study indicated that users other than visitors may take advantage of the connection from the Fairgrounds Park-and-Ride lot to the Estes Park Visitor's Center. Future evaluations should quantify the number of local users and employee users, respectively. Third, if finances allow, performing surveys during two separate time periods could help to provide different evaluation perspectives.
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**Evaluation of an Intelligent Transportation** System for Rocky Mountain National Park and Estes Park: Appendices



This document was prepared for Rocky Mountain National Park by the Paul S. Sarbanes Transit in Parks Technical Assistance Center. SOLUTIONS

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## APPENDIX A: DMS & HAR MESSAGE LOGS

### DMS Message Log

| Date                | Location (Community,  | Accessed    | Message Number                     |
|---------------------|-----------------------|-------------|------------------------------------|
|                     | Pinyon Trl, or Lyons) | Remotely    | (if not pre-approved message, type |
|                     |                       | (yes or no) | out entire message)                |
|                     |                       |             |                                    |
| 7/15/2011-8/5/2011  | Lyons (SR 66 & US 36) | No          | OFF-PEAK: 2-2, PEAK: 1-5           |
| 8/6/2011-8/11/2011  | Lyons (SR 66 & US 36) | No          | OFF-PEAK: 2-9, PEAK: 1-6           |
| 8/12/2011-8/22/2011 | Lyons, SR 66          | No          | OFF-PEAK: 2-9, PEAK: 1-6           |
| 8/23/2011-9/5/2011  | Lyons, SR 66          | No          | OFF-PEAK: 2-10, PEAK: 1-6          |
| 8/12/2011-9/5/2011  | Lyons, US 36          | No          | OFF-PEAK: 2-10, PEAK: 1-6          |
|                     |                       |             |                                    |
| 7/15/2011-8/5/2011  | Community             | Yes         | 3-1                                |
| 8/6/2011-9/5/2011   | Community             | Yes         | 3-3                                |
|                     |                       |             |                                    |
| 7/15/2011-8/5/2011  | Pinyon Trl            | Yes         | OFF-PEAK: 2-2, PEAK: 1-5           |
| 8/6/2011-8/10/2011  | Pinyon Trl            | Yes         | OFF-PEAK: 2-9, PEAK: 1-6           |
| 8/11/11, 8/12/2011  | Pinyon Trl            | n/a         | DMS Failure                        |
| until 2:45pm        |                       |             |                                    |
| 8/12/2011 @ 2:45pm- | Pinyon Trl            | Yes         | OFF-PEAK: 2-9, PEAK: 1-6           |
| 9/5/2011            |                       |             |                                    |

### HAR Message Log

| Date                | Location            | Time        | Time         | Accessed    | Message Number      |
|---------------------|---------------------|-------------|--------------|-------------|---------------------|
|                     | (i.e. Pinyon Trl or | Message On  | Message Off  | Remotely    | (if not preapproved |
|                     | Lyons)              | (i.e. 10am) | (i.e. 10 am) | (yes or no) | message, please     |
|                     |                     |             |              |             | type out entire     |
|                     |                     |             |              |             | message)            |
| 7/15/2011-7/22-2011 | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-1                 |
| 7/23/2011           | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-IT-1              |
| 7/24/2011-          | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-1                 |
| 7/29/2011           |                     |             |              |             |                     |
| 7/30/2011           | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-IT-1              |
| 7/31/2011-8/5/2011  | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-1                 |
| 8/6/2011-8/14/2011  | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-IT-2              |
| 8/15/2011-          | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-2                 |
| 8/17/2011           |                     |             |              |             |                     |
| 8/18/2011           | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-IT-2              |
| 8/19/2011-          | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-2                 |
| 8/22/2011           |                     |             |              |             |                     |
| 8/23/2011           | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-IT-2              |
| 8/24/2011-9/1/2011  | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-2                 |
| 9/2/2011-9/4/2011   | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-IT-2              |
| 9/5/2011            | Lyons & Pinyon Trl  | 9:30am      | 6pm          | Yes         | H-2                 |

## Dynamic Message Sign Messages, Lyons and Pinyon Trail

| Message Number | On or Off-Peak | Dynamic Message Sign | Message  |         |
|----------------|----------------|----------------------|----------|---------|
| 1-5            | On-Peak        | BEAR LK              | PARK AND | TUNE    |
|                |                | PARKING              | RIDE IN  | ТО      |
|                |                | LIMITED              | ESTES    | AM 1630 |
| 1-6            | On-Peak        | BEAR LK              | FREE     | TUNE    |
|                |                | PARKING              | VISITORS | то      |
|                |                | LIMITED              | SHUTTLE  | AM 1630 |
| 2-2            | Off-Peak       | PARK AND             | SHUTTLE  | TUNE    |
|                |                | RIDE IN              | ТО       | ТО      |
|                |                | ESTES                | RKY MTN  | AM 1630 |
| 2-9            | Off-Peak       | PARK AND             | FREE     | TUNE    |
|                |                | RIDE AT              | VISITORS | ТО      |
|                |                | FAIRGRDS             | SHUTTLE  | AM 1630 |
| 2-10           | Off-Peak       | RKY MTN              | FREE     | TUNE    |
|                |                | ESTES PK             | VISITORS | ТО      |
|                |                | INFO                 | SHUTTLE  | AM 1630 |

### Dynamic Message Sign Messages, Community

| Message Number | Dynamic Message Sign Message |          |      |
|----------------|------------------------------|----------|------|
| 3-1            | PARK AND                     | NEXT     |      |
|                | RIDE IN                      | LEFT     |      |
|                | ESTES                        |          |      |
| 3-3            | PARK AND                     | FREE     | NEXT |
|                | RIDE AT                      | VISITORS | LEFT |
|                | FAIRGRDS                     | SHUTTLE  |      |

| Message | Highway Advisory Radio Message  |
|---------|---|
| Number  |   |
| H-1     | The following is traveler information for Rocky Mountain National Park. Rocky Mountain National Park and the Gateway Community of Estes Park invite you to use free shuttle services between the new park-and-ride lot in Estes Park and Rocky Mountain National Park. Riding the shuttle is a relaxed and convenient way to explore the Park; you will not have to wait in entrance lines, find a parking space at each attraction or navigate your own way through the Park. By using this service, you will also help the National Park Service reduce congestion and preserve natural resources.  |
|         | While the shuttle services are free, be sure to purchase your entrance pass at the Estes Park<br>or Beaver Meadows Visitors Center. You can also pick up maps and information about<br>shuttle services at either visitor center, so stop in and learn about these options for car-free<br>travel within the Park.  |
|         | Here is an overview of the shuttle routes available. From the park-and-ride lot, take the Silver Route to the Estes Park Visitors Center, where you can connect to the four shuttle routes that travel to and within Rocky Mountain National Park and Estes Park: the Hiker, Brown, Red and Blue Routes. Shuttle schedules and maps are available at both Visitor Centers.  |
|         | We hope you will take advantage of the new park-and-ride lot, with its convenient access to<br>Park shuttle services. As you travel west along US 36 into the Estes Park valley, turn left on<br>Community Drive to access the park-and-ride lot. Watch for the electronic message sign<br>just before the turn.  |
| H-2     | Rocky Mountain National Park and the gateway community of Estes Park invite you to use<br>free shuttle services between the Fairgrounds park-and-ride lot, the Town of Estes Park, and<br>Rocky Mountain National Park. By using the shuttles, you will help the National Park Service<br>and the Town reduce congestion and preserve natural resources. Remember to purchase<br>your entrance pass at the Estes Park or Beaver Meadows Visitor Center, and while you're<br>there, pick up maps and helpful information about shuttle services at either visitor center.<br>As you travel west along US 36 into the Estes Park valley, turn left on Community Drive and<br>follow the green park-and-ride signs to the lot. Watch for the electronic message sign just<br>before the turn onto Community Drive. Once at the park-and-ride lot, head to the shuttle<br>shelter to board the Silver Route. This route will allow you to connect to the Hiker, Brown,<br>Red, or Blue Route, running daily from 10am to 8pm. The Hiker shuttle connects you to<br>Rocky Mountain National Park and the other shuttles provide service to attractions in and<br>around Ester Park |

## Highway Advisory Radio Message, Without "Insider Tip," Lyons and Pinyon Trail

## Highway Advisory Radio Message, With "Insider Tip," Lyons and Pinyon Trail

| Message | Highway Advisory Radio Message   |
|---------|--|
| Number  |  |
| H-IT-1  | The following is traveler information for Rocky Mountain National Park. Rocky Mountain National Park and the Gateway Community of Estes Park invite you to use free shuttle services between the new park-and-ride lot in Estes Park and Rocky Mountain National Park. Riding the shuttle is a relaxed and convenient way to explore the Park; you will not have to wait in entrance lines, find a parking space at each attraction or navigate your own way through the Park. By using this service, you will also help the National Park Service reduce congestion and preserve natural resources.   |
|         | While the shuttle services are free, be sure to purchase your entrance pass at the Estes Park<br>or Beaver Meadows Visitors Center. You can also pick up maps and information about<br>shuttle services at either visitor center, so stop in and learn about these options for car-free<br>travel within the Park.   |
|         | Here's an insider's tip that may help you enjoy area attractions even more. Most visitors come to the National Park in the morning. If your schedule permits, explore Estes Park in the morning and come to Rocky Mountain National Park in the afternoon.   |
|         | Here is an overview of the shuttle routes available. From the park-and-ride lot, take the Silver Route to the Estes Park Visitors Center, where you can connect to the four shuttle routes that travel to and within Rocky Mountain National Park and Estes Park: the Hiker, Brown, Red and Blue Routes. Shuttle schedules and maps are available at both Visitor Centers.   |
|         | We hope you will take advantage of the new park-and-ride lot, with its convenient access to<br>Park shuttle services. As you travel west along US 36 into the Estes Park valley, turn left on<br>Community Drive to access the park-and-ride lot. Watch for the electronic message sign<br>just before the turn.   |
| H-IT-2  | Rocky Mountain National Park and the gateway community of Estes Park invite you to use<br>free shuttle services between the Fairgrounds park-and-ride lot, the Town of Estes Park, and<br>Rocky Mountain National Park. By using the shuttles, you will help the National Park Service<br>and the Town reduce congestion and preserve natural resources. Here's an insider's tip:<br>you may also want to consider exploring Estes Park in the morning and come to Rocky<br>Mountain National Park in the afternoon when there are less visitors. Remember to<br>purchase your entrance pass at the Estes Park or Beaver Meadows Visitor Center, and while<br>you're there, pick up maps and helpful information about shuttle services at either visitor<br>center. |
|         | As you travel west along US 36 into the Estes Park valley, turn left on Community Drive and follow the green park-and-ride signs to the lot. Watch for the electronic message sign just before the turn onto Community Drive. Once at the park-and-ride lot, head to the shuttle shelter to board the Silver Route. This route will allow you to connect to the Hiker, Brown, Red, or Blue Route, running daily from 10am to 8pm. The Hiker shuttle connects you to Rocky Mountain National Park and the other shuttles provide service to attractions in and around Estes Park.   |

## **APPENDIX B: ON-SITE SURVEYS**

**Silver Route** 

# ESTES PARK TRAVEL SURVEY 2011

### PLEASE READ FIRST:

We are working with Rocky Mountain National Park and the Town of Estes Park to improve travel conditions and provide useful travel information to improve your recreation experience! Please take a moment to answer the following questions. Your participation in this survey is voluntary and anonymous and should only take about 5 minutes. **Thank you!** 



| 1. | Is this your first time visiting Estes Park/Rocky Mounta   | in Nationa                  | al Park?                  |                       |                              |                  |
|----|--|-----------------------------|---------------------------|-----------------------|------------------------------|------------------|
| 2. | How would you rate your overall experience visiting Es   | tes Park/R                  | ocky Mou                  | ntain Na<br>y poor    | tional Park                  | ?                |
| 3. | How would you rate your travel experience (i.e. driving<br>Park/Rocky Mountain National Park?  | , navigatin                 | g, parking                | ) while v             | isiting Este                 | 25               |
|    | ☐ Very good ☐ Good ☐ Average   | □ Poor                      |                           | y poor                |                              |                  |
| 4. | How long do you plan to spend visiting Estes Park/Rock   | xy Mounta                   | in Nationa                | l Park?               |                              |                  |
|    | HOURS (if less than 24 hours) of   | рг                          | D                         | AYS (if 2             | 4 hours or                   | more)            |
|    | <ul> <li>U.S. Highway 36 (From Boulder, Longmont, a</li> <li>U.S. Highway 34 (From Fort Collins, Loveland</li> <li>Colorado State Highway 7</li> <li>Other (please specify):</li></ul> | nd Lyons a<br>1 area)       | rea)                      |                       | _                            |                  |
| 6. | Did you see an <u>electronic message sign</u> while traveling of<br>$\Box$ Yes $\Rightarrow$ If yes, go to question 6a<br>$\Box$ No $\Rightarrow$ If no, go to question 7              | n this trip                 | ?                         |                       |                              |                  |
|    | 6a. Please look at the map attached to your clipboa<br><u>message sign</u> ? (Please check ALL that apply)   | rd. At whie                 | ch location               | (s) did ye            | ou see an <u>e</u>           | lectron          |
|    | <ul> <li>Location 1 (Near the town of Lyons)</li> <li>Location 2 (On the descent into Estes)</li> <li>Location 3 (Right before the turn for th</li> <li>I don't remember</li> </ul>    | Park)<br>1e Fairgrou        | nds Park-n                | Ride)                 |                              |                  |
|    | 6b. For each location where you saw an electronic n<br>with the following statements about the placeme   | nessage sig<br>ent of the s | gn, how str<br>igns? (Ple | ongly do<br>ase check | you <u>agree</u><br>CONE box | or disa<br>only) |
|    |  | Strongly<br>Agree           | Somewhat<br>Agree         | :<br>Neither          | Somewhat<br>Disagree         | Stron:<br>Disagr |
|    | The sign at Location 1 was in a good spot  |                             |                           |                       |                              |                  |
|    | The size of Length 2 mention and send  |                             |                           |                       |                              |                  |
|    | The sign at Location 2 was in a good spot<br>The sign at Location 3 was in a good spot   |                             |                           |                       |                              |                  |

#### 7. Did you tune to AM 1630 during this trip?

 $\Box$  Yes  $\rightarrow$  If yes, go to question 7a  $\Box$  No  $\rightarrow$  If no, go to question 8

#### 7a. How strongly do you agree or disagree with the following statements about how your travel plans were influenced based on the information provided on AM 1630? (Please check ONE box for each statement)

|  | Strongly<br>Agree | Somewhat<br>Agree | :<br>Neither | Somewhat<br>Disagree | Strongly<br>Disagree |
|--|-------------------|-------------------|--------------|----------------------|----------------------|
| The information influenced me to use the<br>Park-n-Ride  |                   |                   |              |                      |                      |
| I decided to visit certain attractions within the<br>park <i>later</i> in the day based on the information |                   |                   |              |                      |                      |

#### 7b. How strongly do you agree or disagree with the following statements about AM 1630? (Please check ONE box for each statement)

|  | Strongly<br>Agree | Somewhat<br>Agree | Neither | Somewhat<br>Disagree | Strongly<br>Disagree |
|--|-------------------|-------------------|---------|----------------------|----------------------|
| The information was accurate                           |                   |                   |         |                      |                      |
| The information saved me time                          |                   |                   |         |                      |                      |
| I was able to get around easier with the information   |                   |                   |         |                      |                      |
| I would plan to use this information if visiting again |                   |                   |         |                      |                      |
| The information helped me avoid traffic<br>congestion  |                   |                   |         |                      |                      |
| I needed more information (please specify):            |                   |                   |         |                      |                      |

#### 8. What is your reason for using the Fairgrounds Silver Route shuttle today? (Please check ALL that apply)

- To visit attractions within Rocky Mountain National Park
- To visit shops located in Estes Park
- □ To commute to/from work
- $\Box$  Other (*please specify*):

#### 9. Have you used a shuttle to travel around Estes Park/Rocky Mountain National Park prior to this visit?

Yes

No

10. Which shuttle route(s) have you used or do you plan to use while visiting Estes Park/Rocky Mountain National Park during this trip? (Please check ALL that apply)

|   | Have<br>Used | Plan to<br>Use |
|---|--------------|----------------|
| The Hiker Shuttle to Rocky Mountain National Park |              |                |
| The Bear Lake Shuttle                             |              |                |
| The Moraine Lake Shuttle                          |              |                |
| The Fairgrounds Silver Route                      |              |                |
| The Shopper Shuttle Red Route                     |              |                |
| The Shopper Shuttle Blue Route                    |              |                |
| The Campground Shuttle Brown Route                |              |                |

| <ul> <li>11. How did you learn about the Fairgrounds Silver Route</li> <li>Previous visits</li> <li>Family or friends</li> <li>A newspaper article</li> <li>Electronic message signs</li> <li>AM 1630</li> <li>From visitor center staff</li> <li>From hotel/lodge/campsite staff</li> <li>The Town of Estes Park website</li> </ul>            | shuttle? (                            | Please chec<br>The Rocky<br>website<br>Through m<br>Rocky Mo<br>Through m<br>business in<br>Other (plea | ck ALL ti<br>Mountain<br>ay employ<br>untain Na<br>ay employ<br>Estes Pa<br>ase specif | hat apply)<br>In National F<br>(ment with<br>ational Park<br>yment with a<br>rk<br>(y): | ark.                          |
|---|---------------------------------------|---|--|---|-------------------------------|
| 12. Please indicate how strongly do you agree or disagree w<br><u>Silver Route</u> shuttle? ( <i>Please check</i> ONE <i>box for each st</i>  | vith the fo<br>tatement)              | llowing sta   | tements  | about the F   | airgroun                      |
|   | Strongly<br>Agree                     | Somewhat<br>Agree   | Neither  | Somewhat<br>Disagree  | Strongly<br>Disagree          |
| The shuttle schedule is confusing   |                                       |   |  |   |                               |
| The shuttle saved me time   |                                       |   |  |   |                               |
| The shuttle is convenient   |                                       |   |  |   |                               |
| The shuttle does not run frequently enough for my needs   |                                       |   |  |   |                               |
| for me or someone in my group   |                                       |   |  |   | 0                             |
| desired destination   |                                       |   |  |   |                               |
| The shuttle does not have sufficient room for my gear   |                                       |   |  |   |                               |
| It seems difficult to travel with children on the shuttle   | п                                     | п   | П  | П   | П                             |
| Lenjoyed my experience using the shuttle  |                                       |   | Ē  |   |                               |
| I would use the shuttle again   |                                       |   | ā  |   |                               |
| <ul> <li>13. What is your zip code <i>or</i> country of residence?</li> <li>Zip code or</li> <li>14. How many people are you traveling with today, includi</li> <li> Children (5 years or younger)</li> <li>Children (6-17 years)</li> <li>15. Is there anything you would like to share related to you thoughts in the space below.</li> </ul> | Country o<br>ng yourse<br>nr travel e | of residence<br>If?<br><br>xperience?   | Adult<br>Senio<br>Please fo  | s (18-64 yea<br>rs (65 years<br>æl free to w  | rs)<br>or older)<br>rite your |
| THANK YOU FOR COMPLET   | TING TH                               | IIS SURV  | EY!  |   |                               |

# ESTES PARK TRAVEL SURVEY 2011

## PLEASE READ FIRST:

We are working with Rocky Mountain National Park and the Town of Estes Park to improve travel conditions and provide useful travel information to improve your recreation experience! Please take a moment to answer the following questions. Your participation in this survey is voluntary and anonymous and should only take about 5 minutes. **Thank you!** 



| 1. | Is this your first time visiting Estes Park/Rocky Mountain National Park?   |
|----|---|
| 2. | How would you rate your <u>overall</u> experience visiting Estes Park/Rocky Mountain National Park?   |
| 3. | How would you rate your <u>travel</u> experience (i.e. driving, navigating, parking) while visiting Estes<br>Park/Rocky Mountain National Park?<br>Uvery good Good Average Poor Very poor   |
| 4. | How long do you plan to spend visiting Estes Park/Rocky Mountain National Park?   |
|    | HOURS (if less than 24 hours) or DAYS (if 24 hours or more)   |
| 5. | Which route did you travel to arrive to the area on this trip?         U.S. Highway 36 (From Boulder, Longmont, and Lyons area)         U.S. Highway 34 (From Fort Collins, Loveland area)         Colorado State Highway 7         Other (please specify): |
| 6. | Did you see an <u>electronic message sign</u> while traveling on this trip?<br>$\Box$ Yes $\rightarrow$ If yes, go to question 6a<br>$\Box$ No $\rightarrow$ If no, go to question 7  |
|    | 6a. Please look at the map attached to your clipboard. At which location(s) did you see an <u>electronic message sign</u> ? ( <i>Please check ALL that apply</i> )  |
|    | <ul> <li>Location 1 (Near the town of Lyons)</li> <li>Location 2 (On the descent into Estes Park)</li> <li>Location 3 (Right before the turn for the Fairgrounds Park-n-Ride)</li> <li>I don't remember</li> </ul>  |
|    | 6b. For each location where you saw an electronic message sign, how strongly do you <u>agree or disag</u><br>with the following statements about the placement of the signs? ( <i>Please check</i> ONE <i>box only</i> )                                    |
|    | Strongly Somewhat Somewhat Strongl<br>Agree Agree Neither Disagree Disagree   |
|    | The sign at Location 1 was in a good spot   |
|    | The sign at Location 2 was in a good spot   |
|    | 6c. Did at least one of the electronic message signs display a message prompting you to tune to <u>AM</u><br>1630?  |

#### 7. Did you tune to AM 1630 during this trip?

 $\Box$  Yes  $\rightarrow$  If yes, go to question 7a  $\Box$  No  $\rightarrow$  If no, go to question 8

#### 7a. How strongly do you agree or disagree with the following statements about how your travel plans were influenced based on the information provided on AM 1630? (Please check ONE box for each statement)

|  | Strongly<br>Agree | Somewhat<br>Agree | Neither | Somewhat<br>Disagree | Strongly<br>Disagree |
|--|-------------------|-------------------|---------|----------------------|----------------------|
| The information influenced me to use the Park-n-Ride   |                   |                   |         |                      |                      |
| I decided to visit certain attractions within the<br>park <i>later</i> in the day based on the information |                   |                   |         |                      |                      |

#### 7b. How strongly do you agree or disagree with the following statements about AM 1630? (Please check ONE box for each statement)

|  | Strongly<br>Agree | Somewhat<br>Agree | Neither | Somewhat<br>Disagree | Strongly<br>Disagree |
|--|-------------------|-------------------|---------|----------------------|----------------------|
| The information was accurate                           |                   |                   |         |                      |                      |
| The information saved me time                          |                   |                   |         |                      |                      |
| I was able to get around easier with the information   |                   |                   |         |                      |                      |
| I would plan to use this information if visiting again |                   |                   |         |                      |                      |
| The information helped me avoid traffic<br>congestion  |                   |                   |         |                      |                      |
| I needed more information (please specify):            |                   |                   |         |                      |                      |

## 8. Have you used a shuttle to travel around Estes Park/Rocky Mountain National Park prior to this visit?

□ Yes

No

9. Which shuttle route(s), if any, have you used or do you plan to use while visiting Estes Park/Rocky Mountain National Park during this trip? (Please check ALL that apply)

|   | Have<br>Used | Plan to<br>Use |
|---|--------------|----------------|
| The Hiker Shuttle to Rocky Mountain National Park |              |                |
| The Bear Lake Shuttle                             |              |                |
| The Moraine Lake Shuttle                          |              |                |
| The Fairgrounds Silver Route                      |              |                |
| The Shopper Shuttle Red Route                     |              |                |
| The Shopper Shuttle Blue Route                    |              |                |
| The Campground Shuttle Brown Route                |              |                |

| <ul> <li>Previous visits</li> <li>Family or friends</li> <li>A newspaper article</li> <li>Electronic measure signs</li> </ul>  | ALL that a                | (pply)<br>The Rocky<br>website<br>Through n | y Mounta                    | in National H<br>yment with                   | Park                          |
|--|---------------------------|---|-----------------------------|---|-------------------------------|
| <ul> <li>☐ Electronic message signs</li> <li>☐ AM 1630</li> <li>☐ From visitor center staff</li> </ul>   |                           | Through n<br>business in                    | ny employ<br>N Estes Pa     | yment with a<br>wrk                           | ı                             |
| <ul> <li>From hotel/lodge/campsite staff</li> <li>The Town of Estes Park website</li> </ul>  |                           | Other (ple                                  | ase specif                  | ý):   |                               |
| 11. The following are possible reasons why you may have a shuttle. Please indicate how strongly you agree or disate the strongly strong strongly strongly strong strong strong strongly strong strongly strongly strong stron | decided N<br>gree with t  | OT to use t<br>the followin                 | he Fairg<br>1g statem       | rounds <u>Silv</u><br>ents.                   | er Route                      |
| (Please check <b>ONE</b> box for each statement)   | Strongly<br>Agree         | Somewhat<br>Agree                           | Neither                     | Somewhat<br>Disagree                          | Strongly<br>Disagree          |
| I was not aware of the shuttle   |                           |   |                             |   |                               |
| The shuttle wasn't running when I arrived  |                           |   |                             |   |                               |
| I had trouble finding the shuttle schedule   |                           |   |                             |   |                               |
| The shuttle schedule is confusing  |                           |   |                             |   |                               |
| The shuttle does not run frequently enough for my needs  |                           |   |                             |   |                               |
| Getting on and off a shuttle is physically challenging for<br>me or someone in my group  |                           |   |                             |   |                               |
| I would have to switch shuttles too many times to get to   |                           |   |                             |   |                               |
| The shuffle does not have sufficient room for my goor  |                           |   |                             |   |                               |
| It accord difficult to travel with abildron on the about   |                           |   |                             |   |                               |
| other (plage specify)  |                           | U   | U                           |   | U                             |
| Other (please specify):  |                           |   |                             |   |                               |
| 12. What is your zip code <i>or</i> country of residence?  | Country                   | of residence                                |                             |   |                               |
| Zip code or<br>13. How many people are you traveling with today, include<br>Children (5 years or younger)<br>Children (6-17 years)   | ing yourse                | الا?<br>                                    | Adult<br>Senio              | s (18-64 yea<br>rs (65 years                  | rs)<br>or older)              |
| Zip code or<br>13. How many people are you traveling with today, includ<br>Children (5 years or younger)<br>Children (6-17 years)<br>14. Is there anything you would like to share related to you<br>thoughts in the space below.  | ing yourse<br>ur travel e | xperience?                                  | Adult<br>Senio              | s (18-64 yea<br>rs (65 years<br>eel free to w | rs)<br>or older)<br>rite your |
| Zip code or         13. How many people are you traveling with today, includ         Children (5 years or younger)         Children (6-17 years)         14. Is there anything you would like to share related to you thoughts in the space below.   | ur travel e               | 4f?<br><br>xperience?                       | Adult<br>Senio<br>Please fo | s (18-64 yea<br>rs (65 years<br>eel free to w | rs)<br>or older)<br>rite your |

## **APPENDIX C: MAIL SURVEY**



## PLEASE READ FIRST:

The person who completed the onsite travel survey on your most recent visit to the Town of Estes Park/Rocky Mountain National Park should complete this survey. This is an effort by the Paul S. Sarbanes Transit in Parks Technical Assistance Center and the Town of Estes Park to understand how travel affects your experience. Thank you for your participation!

#### Section I. About your use of visitor shuttles

- During your most recent visit to Estes Park/Rocky Mountain National Park, did you use a visitor shuttle?
   □ Yes →If yes, go to question 1a
  - $\square$  No  $\rightarrow$  If no, go to question 2
  - What was your reason for using a visitor shuttle while visiting Estes Park/Rocky Mountain National Park? (Please check ALL that apply)
    - To visit attractions within Rocky Mountain National Park
    - To visit shops located in Estes Park
    - □ To commute to/from work
    - □ Other (please specify): \_\_\_\_

1b. How did the price of gasoline influence your decision to use a visitor shuttle?

- ☐ It did <u>not</u> influence my decision to use a shuttle
- □ It <u>somewhat</u> influenced my decision to use a shuttle
- □ It <u>completely</u> influenced my decision to use a shuttle
- 2. How often do you use each of the following modes of transportation to get around when visiting a national park or other recreation area? (*Please check* ONE *box for* EACH *item*)

|                        | Always | Often | Occasionally | Seldom | Never |
|------------------------|--------|-------|--------------|--------|-------|
| Car                    |        |       |              |        |       |
| Visitor shuttle        |        |       |              |        |       |
| Bicycle                |        |       |              |        |       |
| Walking                |        |       |              |        |       |
| Group tour bus         |        |       |              |        |       |
| Other (please specify) |        |       |              |        |       |

3. We would like to know if any of the following would influence your <u>future</u> use of visitor shuttles. How would your use of visitor shuttles be influenced by the following? (*Please check* ONE box for EACH item)

|  | Strongly<br>Increase<br>My Use | Somewhat<br>Increase<br>My Use | Not at all<br>Increase<br>My Use | Not<br>Sure |
|--|--------------------------------|--------------------------------|----------------------------------|-------------|
| Extended hours on all shuttle routes   |                                |                                |                                  |             |
| Increased frequency of shuttle pick-ups and drop-offs  |                                |                                |                                  |             |
| An interpretive program played onboard the shuttle<br>to describe the areas natural and cultural history |                                |                                |                                  |             |
| Vouchers for discounts at shops in downtown Estes Park   |                                |                                |                                  |             |
| Additional space for gear such as coolers, camping gear, strollers or bicycles                           |                                |                                |                                  |             |
| Information about the environmental benefits of shuttle use, such as reduced air and noise pollution     |                                |                                |                                  |             |
| Special recreation opportunities, such as drop-off & pick-up for one way hikes                           |                                |                                |                                  |             |
| Rising gas prices  |                                |                                |                                  |             |
| Electronic signs showing real-time shuttle arrival/departure   |                                |                                |                                  |             |
| Direct shuttle routes between parking and park attractions   |                                |                                |                                  |             |
| Park shuttles that operate on alternative fuels such as<br>ethanol, propane, electricity or biodiesel    |                                |                                |                                  |             |

#### Section II. About your opinions towards shuttle use

4. We would like to know more about your opinions toward using the visitor shuttles on your next trip to Estes Park/Rocky Mountain National Park. Please read each of the following questions carefully, as the response options change, and check the box that best describes your opinion. (*Please check ONE box for* EACH statement)

|   | Extremely<br>Pleasant | Somewhat<br>Pleasant | Neither | Somewhat<br>Unpleasant | Extremely<br>Unpleasant |
|---|-----------------------|----------------------|---------|------------------------|-------------------------|
| For me, taking the visitor shuttle next time would be   |                       |                      |         |                        |                         |
|   | Extremely<br>Likely   | Somewhat<br>Likely   | Neither | Somewhat<br>Unlikely   | Extremely<br>Unlikely   |
| Most people who are important to me would<br>support my decision to take the visitor shuttle next<br>time |                       |                      |         |                        |                         |
|   | Extremely<br>High     | Somewhat<br>High     | Neither | Somewhat<br>Low        | Extremely<br>Low        |
| My ability to take the visitor shuttle next time is   |                       |                      |         |                        |                         |
|   | Extremely<br>Good     | Somewhat<br>Good     | Neither | Somewhat<br>Bad        | Extremely<br>Bad        |
| For me, taking the visitor shuttle next time would be   |                       |                      |         |                        |                         |
|   | Extremely             | Somewhat<br>Likely   | Neither | Somewhat<br>Unlikely   | Extremely               |
| Most people who are important to me think I should take the visitor shuttle next time                     |                       |                      |         |                        |                         |
|   | Extremely<br>Easy     | Somewhat<br>Easy     | Neither | Somewhat<br>Difficult  | Extremely<br>Difficult  |
| For me, taking the visitor shuttle next time would be   | •                     |                      |         |                        |                         |
|   | Extremely<br>Strong   | Somewhat<br>Strong   | Neither | Somewhat<br>Weak       | Extremely<br>Weak       |
| My intention to take the visitor shuttle next time is   |                       |                      |         |                        |                         |
|   | Extremely<br>Likely   | Somewhat<br>Likely   | Neither | Somewhat<br>Unlikely   | Extremely<br>Unlikely   |
| For me, taking the visitor shuttle next time is   | -                     |                      |         |                        |                         |
|   |                       |                      | -       | 0                      |                         |

5. This question explores your views about the positive and negative <u>outcomes people may associate with</u> <u>using the visitor shuttles</u> at Estes Park/Rocky Mountain National Park. Please rate the following statements between <u>extremely likely and extremely unlikely</u> to express your degree of certainty that use of the visitor shuttles will lead to a given outcome. (*Please check* ONE *box for* EACH *statement*)

|   | Extremely<br>Likely | Somewhat<br>Likely | Neither | Somewhat<br>Unlikely | Extremely<br>Unlikely |
|---|---------------------|--------------------|---------|----------------------|-----------------------|
| Reduce my tension and stress caused by driving                              |                     |                    |         |                      |                       |
| Allow me to reduce my environmental impact (such as air or noise pollution) |                     |                    |         |                      |                       |
| Make me experience infrequent buses with long lines                         |                     |                    |         |                      |                       |
| Make me feel crowded, touristy  |                     |                    |         |                      |                       |
| Alleviate my stress related to finding parking                              |                     |                    |         |                      |                       |
| Make me feel rushed or short on time  |                     |                    |         |                      |                       |
| Allow me to save money by not using gas for my own vehicle                  |                     |                    |         |                      |                       |
| Enhance my sightseeing ability  |                     |                    |         |                      |                       |
| Allow me to explore at my own pace  |                     | ٥                  |         |                      |                       |
| Provide enough space for my personal belongings                             |                     |                    |         |                      |                       |

6. This question explores your views about the <u>desirability of outcomes</u> people may associate with using the visitor shuttles at Estes Park/Rocky Mountain National Park. Please rate the following statements between <u>extremely desirable and extremely undesirable</u> to express your opinion about the outcomes associated with using a visitor shuttle. (*Please check ONE box for EACH statement*)

|   | Extremely<br>Desirable | Somewhat<br>Desirable | Neither | Somewhat<br>Undesirable | Extremely<br>Undesirable |
|---|------------------------|-----------------------|---------|-------------------------|--------------------------|
| Reducing the tension and stress of driving                        |                        |                       |         |                         |                          |
| Reducing my environmental impact (such as air or noise pollution) |                        |                       |         |                         |                          |
| Experiencing infrequent buses with long lines                     |                        |                       |         |                         |                          |
| Feeling crowded, touristy   |                        |                       |         |                         |                          |
| Alleviating stress related to finding parking                     |                        |                       |         |                         |                          |
| Feeling rushed or short on time                                   |                        |                       |         |                         |                          |
| Saving money by not using gas for my own vehicle                  |                        |                       |         |                         |                          |
| Enhancing my sightseeing ability                                  |                        |                       |         |                         |                          |
| Exploring at my own pace  |                        |                       |         |                         |                          |
| Having enough space for my personal belongings                    |                        |                       |         |                         |                          |

#### Section III. About how you plan for trips

7. There are many different ways to get travel information when taking a trip. How useful would each of the following ways of getting travel information be to you? (Please check ONE box for EACH item)

|   | Very<br>Useful | Somewhat<br>Useful | Neither | Somewhat<br>Un-Useful | Not at all<br>Useful |
|---|----------------|--------------------|---------|-----------------------|----------------------|
| Rocky Mountain National Park website              |                |                    |         |                       |                      |
| America's traveler information phone number (511) |                |                    |         |                       |                      |
| Park brochure/map                                 |                |                    |         |                       |                      |
| Park newspaper                                    |                |                    |         |                       |                      |
| Host of private campground/hotel/bed & breakfast  |                |                    |         |                       |                      |
| Traveling guide/tour book                         |                |                    |         |                       |                      |
| Chamber of commerce or state visitors bureau      |                |                    |         |                       |                      |
| Text updates on a cellular phone                  |                |                    |         |                       |                      |
| Apps available for Smartphones                    |                |                    |         |                       |                      |
| Online  |                |                    |         |                       |                      |
| Highway advisory radio                            |                |                    |         |                       |                      |
| Friends or family                                 |                |                    |         |                       |                      |
| Other visitors                                    |                |                    |         |                       |                      |

#### 8. When planning for your most recent visit to Estes Park/Rocky Mountain National Park, which mode(s) of transportation did you plan to use? (Please check ALL that apply)

- 🗆 Car
- □ Visitor shuttle
- □ Bicvcle
- □ Walking
- □ Group tour bus
- □ Other (please specify) \_\_\_\_
- 9. Which mode(s) of transportation did you actually use on your most recent visit to Estes Park/Rocky Mountain National Park? (Please check ALL that apply)
  - 🗆 Car
  - Visitor shuttle
     Bicycle

  - □ Walking
  - Group tour bus
  - □ Other (please specify)
  - 9a. If you actually used a mode of transportation different from what you had planned to use, please explain why.

10. How often do you use public transportation at home?

- □ Never
- □ Hardly ever
- □ At least once a month
- □ At least once a week
- □ Almost everyday

| Sectio | n IV. About you   |
|--------|---|
| 12.    | Who were you traveling with on your most recent visit to Estes Park/Rocky Mountain National Park?   |
|        |   |
|        | □ With friends<br>□ With family   |
|        | □ With family & friends   |
|        | <ul> <li>□ As a member of a group or club</li> <li>□ Other (<i>please specify</i>)</li> </ul>   |
| 13.    | How many times have you visited Estes Park/Rocky Mountain National park before your most recent visit   |
|        | □ It was my first visit   |
|        | $\square$ 2-3 times   |
|        | $\Box$ 4-5 times  |
|        | □ 6 times or more   |
| 14.    | what is the highest level of education you have completed?          Some high school         High school diploma/GED         Some college         Bachelor's degree         Graduate degree |
| 15.    | What type of overnight accommodations did you use during your most recent trip to Estes Park/Rocky<br>Mountain National Park?   |
|        | □ I did not stay overnight  |
|        | □ I ann a resident of Estes Park<br>□ Hotel/motel in town   |
|        | Bed and breakfast   |
|        | Private campground  |
|        | Campground within Rocky Mountain National Park With friends/family  |
|        | Other (please specify)  |
| 16.    | What is your gender?  |
| 1.01   | ☐ Male  |
|        |   |
|        |   |

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| Pleas<br>wo | THANK YOU FOR COMPLETING THIS SURVEY!<br>e return the completed survey in the postage paid, self-addressed envelope provided. If you<br>uld like more information about the Paul S. Sarbanes Transit in Parks Technical Assistance |
| Ce<br>plea  | enter, please visit <u>www.triptac.org</u> If you would like more information about this survey,<br>ase contact Kourtney Collum, School of Forest Resources, University of Maine, 5755 Nutting                                     |

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## APPENDIX D: STAKEHOLDER PRE-IMPLEMENTATION SURVEY FORM

- 1. What do you feel are some of the major transportation issues in the area?
- 2. Which of these transportation issues do you feel will be addressed by the ITS pilot study?
- 3. Would you have preferred for the pilot ITS to have focused on a different corridor?
- 4. In your opinion, what are the expected benefits of the ITS pilot study to the Town of Estes Park? To Rocky Mountain National Park? To visitors?
- 5. How do you feel the ITS will improve visitor mobility and accessibility? How do you think the ITS will enhance visitors' experience?
- 6. Do you anticipate any difficulty operating the DMS/HAR?
- 7. Up to this point in the project, how would you describe the ease or difficulty of preparing for the implementation of the ITS?
- 8. In your opinion, what are the benefits of collaborating with the other stakeholders (ROMO, ESTES, CDOT, CFLHD, RMT)?
- 9. Have you experienced any challenges collaborating with the other stakeholders?
- 10. Do you feel the DMS are being placed in a good location to get information to visitors? If no, where do you think the signs should be placed?
- 11. Are you familiar with the messaging that will be displayed on the DMS? If yes, how do you feel about the messaging? Do you think it will be effective?
- 12. Are you familiar with the messaging that will be broadcast over the HAR? If yes, how do you feel about the messaging? Do you think it will be effective?
- 13. How else do you think traveler information should be disseminated, whether by changing locations of the DMS/HAR or by using alternative technologies?
- 14. One goal of this pilot study is to encourage "peak spreading," which refers to spreading the time of day that visitors arrive to the park. Ideally this will reduce traffic congestion during the busiest time of the day, mainly, in the morning. An "Insider's Tip" will be broadcast over the HAR informing people that most visitors come to the park in the morning, so to experience less crowding, they should visit the park in the afternoon. Do you feel peak spreading will be accomplished by broadcasting this information over the HAR? Please explain why you feel this way.

- 15. How do you believe the DMS/HAR will affect driver behavior? Do you anticipate changes in behavior during the pilot season?
- 16. The Park-and-Ride shuttle will begin operating a month before the ITS pilot study begins. Do you think we will observe differences in shuttle use and visitor behavior between when the shuttle is operating without the DMS/HAR and when the shuttle is operating with the DMS/HAR in operation?
- 17. If the ITS pilot study is successful, the Town of Estes Park and Rocky Mountain National Park may permanently implement these ITS technologies, as well as other technologies such as real-time bus arrivals. Do you feel that these technologies will be effective in addressing traffic congestion into the future? Do you think these technologies should be used to encourage visitors to enter the park via the Fall River Entrance Station?

## APPENDIX E: STAKEHOLDER POST-IMPLEMENTATION SURVEY FORM

- 1. During the pre-survey, you identified what you felt were some of the major transportation issues facing the Town of Estes Park and Rocky Mountain National Park. Do you feel that the ITS pilot study addressed these transportation issues? If yes, which issues and how? If no, what do you think could be improved?
- 2. What major transportation issues that were intended to be mitigated by the ITS do you feel the ITS pilot study failed to address?
- 3. In your opinion, what were some of the benefits that you observed of the ITS pilot study to the Town of Estes Park? To Rocky Mountain National Park? To the visitors?
- 4. Thinking back over the course of the pilot study, what effect do you feel the ITS had on visitor mobility and accessibility?
- 5. How do you think the visitor experience was effected by having traveler information available via the ITS?
- 6. What difficulties did you or others encounter in the operations and maintenance of the DMS/HAR?
- 7. What benefits did you find from collaborating with the other stakeholders?
- 8. Did you experience any challenges collaborating with the other stakeholders?
- 9. Now that the pilot study is complete, do you feel the DMS were placed in a good location to get information to visitors? If no, where do you think the signs should have been placed or should be placed if used again in the future?
- 10. Do you feel the messaging that was used on the DMS was effective?
- 11. Do you feel the messaging that was broadcast over the HAR was effective? Do you think different messaging would have been more effective? If so, what messages would you recommend?
- 12. How else do you think traveler information should be disseminated, whether by changing locations of the DMS/HAR or by using alternative technologies?
- 13. An "Insider's Tip" was broadcast over the HAR on 15 days during the pilot study, informing people that most visitors come to the park in the morning, so to experience less crowding, they should visit the park in the afternoon. Do you feel peak spreading occurred due to the broadcast of this information over the HAR? Please explain why you feel this way.

- 14. What differences did you observe in shuttle use and visitor behavior between when the shuttle was operating without the DMS/HAR and when the shuttle was operating with the DMS/HAR in operation?
- 15. Do you feel that the DMS/HAR should be used to address traffic congestion into the future? Do you think these technologies should be used to encourage visitors to enter the park via the Fall River Entrance Station?
- 16. What suggested changes do you have if the ITS continues in future years?

## **APPENDIX F: RIDERSHIP DATA**

| Hiker | Shuttle | Ridership |
|-------|---------|-----------|
|-------|---------|-----------|

|       | Ju   | ne    | Ju    | uly    | Au    | gust   | Septe | mber  | Octo | ober |
|-------|------|-------|-------|--------|-------|--------|-------|-------|------|------|
|       | 2010 | 2011  | 2010  | 2011   | 2010  | 2011   | 2010  | 2011  | 2010 | 2011 |
| 1     | -    | -     | 230   | 307    | 351   | 400    | 83    | 176   | -    | 193  |
| 2     | -    | -     | 191   | 510    | 256   | 546    | 113   | 234   | 117  | 144  |
| 3     | -    | -     | 351   | 690    | 359   | 568    | 164   | 656   | 60   | -    |
| 4     | -    | -     | 277   | 425    | 285   | 458    | 295   | 643   | -    | -    |
| 5     | -    | -     | 304   | 300    | 397   | 488    | 495   | 229   | -    | -    |
| 6     | -    | -     | 156   | 279    | 370   | 787    | 177   | 137   | -    | -    |
| 7     | -    | -     | 129   | 355    | 373   | 699    | -     | 87    | I    | I    |
| 8     | -    | -     | 211   | 309    | 333   | 527    | -     | 200   | I    | I    |
| 9     | -    | -     | 144   | 263    | 235   | 449    | -     | 146   | I    | I    |
| 10    | -    | -     | 265   | 354    | 298   | 380    | -     | 153   | I    | 1    |
| 11    | -    | -     | 290   | 336    | 219   | 379    | 88    | 186   | -    | -    |
| 12    | -    | -     | 203   | 305    | 201   | 474    | 80    | -     | -    | -    |
| 13    | -    | -     | 285   | 387    | 222   | 576    | -     | -     | -    | -    |
| 14    | -    | -     | 168   | 327    | 434   | 293    | -     | -     | I    | -    |
| 15    | -    | -     | 236   | 404    | 433   | 241    | -     | -     | I    | -    |
| 16    | -    | -     | 238   | 509    | 155   | 258    | -     | -     | I    | -    |
| 17    | -    | -     | 343   | 315    | 238   | 266    | -     | 70    | I    | -    |
| 18    | -    | -     | 248   | 308    | 226   | 380    | 78    | 116   | I    | I    |
| 19    | -    | -     | 282   | 477    | 109   | 216    | 100   | -     | -    | -    |
| 20    | -    | -     | 340   | 641    | 233   | 460    | -     | -     | -    | -    |
| 21    | -    | -     | 168   | 609    | 290   | 277    | -     | -     | -    | -    |
| 22    | -    | -     | 270   | 350    | 169   | 284    | -     | -     | -    | -    |
| 23    | -    | -     | 288   | 589    | 168   | 309    | -     | -     | -    | -    |
| 24    | -    | -     | 349   | 606    | 175   | 246    | -     | 270   | -    | -    |
| 25    | -    | 199   | 315   | 420    | 136   | 239    | 317   | 185   | -    | -    |
| 26    | 197  | 245   | 465   | 359    | 161   | 209    | 83    | -     | -    | -    |
| 27    | 240  | 297   | 351   | 346    | 150   | 237    | -     | -     | -    | -    |
| 28    | 184  | 396   | 308   | 484    | 210   | 225    | -     | -     | -    | -    |
| 29    | 200  | 203   | 232   | 457    | 190   | 111    | -     | -     | -    | -    |
| 30    | 124  | 243   | 354   | 654    | 103   | 201    | -     | -     | -    | -    |
| 31    | -    | -     | 457   | 557    | 96    | 194    | -     | -     | -    | -    |
| TOTAL | 945  | 1,583 | 8,448 | 13,232 | 7,575 | 11,377 | 2,073 | 3,488 | 177  | 337  |

## Bear Lake Shuttle Ridership

|       | М     | ay    | Ju     | ne     | Ju      | ıly     | Aug     | gust    | Septe  | mber   | October |      |
|-------|-------|-------|--------|--------|---------|---------|---------|---------|--------|--------|---------|------|
|       | 2010  | 2011  | 2010   | 2011   | 2010    | 2011    | 2010    | 2011    | 2010   | 2011   | 2010    | 2011 |
| 1     | -     | -     | -      | -      | 3023    | 3830    | 4126    | 4973    | 906    | 1352   | 1336    | 4602 |
| 2     | -     | -     | -      | -      | 2828    | 5227    | 4247    | 4482    | 957    | 2256   | 3979    | 3880 |
| 3     | -     | -     | -      | -      | 5284    | 5793    | 4402    | 4692    | 1508   | 4986   | 2666    | n/a  |
| 4     | -     | -     | -      | 747    | 4252    | 4792    | 4004    | 4499    | 4611   | 6294   | 987     | n/a  |
| 5     | -     | -     | 1931   | 706    | 5149    | 3413    | 4295    | 5329    | 6104   | 3710   | 1103    | n/a  |
| 6     | -     | -     | 2362   | -      | 3726    | 3319    | 4965    | 5773    | 2603   | 358    | -       | n/a  |
| 7     | -     | -     | -      | -      | 1974    | 4444    | 5722    | 5350    | 1152   | 225    | -       | n/a  |
| 8     | -     | -     | -      | -      | 3422    | 3214    | 4965    | 4863    | 782    | 1696   | -       | n/a  |
| 9     | -     | -     | -      | -      | 4168    | 4657    | 3055    | 4642    | 1196   | 1398   | 2273    | n/a  |
| 10    | -     | -     | -      | -      | 5150    | 4229    | 4794    | 4203    | 1098   | 2586   | 697     | n/a  |
| 11    | -     | -     | -      | 1131   | 4384    | 3938    | 4028    | 4516    | 2286   | 2711   | 529     | n/a  |
| 12    | -     | -     | 379    | 1287   | 4090    | 3577    | 3416    | 4509    | 1674   | 1442   | -       | n/a  |
| 13    | -     | -     | 494    | 1221   | 4240    | 3790    | 3678    | 5780    | 1147   | 1545   | -       | n/a  |
| 14    | -     | -     | 1010   | 1203   | 3918    | 4426    | 5861    | 3939    | 1397   | 570    | -       | n/a  |
| 15    | -     | -     | 1904   | 1121   | 4516    | 4270    | 4606    | 3784    | 1175   | 563    | -       | n/a  |
| 16    | -     | -     | 1818   | 1170   | 4125    | 5539    | 3173    | 2951    | 1243   | 1691   | 2015    | n/a  |
| 17    | -     | -     | 1684   | 564    | 5530    | 4149    | 3286    | 3608    | 1740   | 1922   | 1042    | n/a  |
| 18    | -     | -     | 2406   | 2536   | 4240    | 4700    | 2926    | 3806    | 3358   | 3182   | -       | n/a  |
| 19    | -     | -     | 4245   | 1411   | 3233    | 4902    | 1598    | 3270    | 3021   | 1954   | -       | n/a  |
| 20    | -     | -     | 3604   | 951    | 4292    | 4955    | 3333    | 5239    | 1592   | 1352   | -       | n/a  |
| 21    | -     | -     | 2784   | 2385   | 3761    | 5069    | 4786    | 3363    | 1722   | 1039   | -       | n/a  |
| 22    | -     | -     | 2934   | 1609   | 3818    | 4844    | 3484    | 2564    | 539    | 1405   | -       | n/a  |
| 23    | -     | -     | 2809   | 1623   | 4223    | 6096    | 1370    | 2436    | 850    | 2467   | -       | n/a  |
| 24    | -     | -     | 2696   | 2651   | 5019    | 5348    | 1233    | 1701    | 1987   | 4786   | -       | n/a  |
| 25    | -     | -     | 3345   | 3591   | 5039    | 5055    | 1751    | 2177    | 5196   | 3119   | -       | n/a  |
| 26    | -     | -     | 4081   | 3706   | 4841    | 4353    | 1602    | 2084    | 3030   | 1390   | -       | n/a  |
| 27    | -     | -     | 3683   | 2590   | 4874    | 4721    | 2098    | 3990    | 1273   | 1388   | -       | n/a  |
| 28    | -     | 608   | 2963   | 3183   | 4592    | 4694    | 2730    | 2593    | 983    | 1319   | -       | n/a  |
| 29    | 1406  | 926   | 2915   | 2358   | 3850    | 4618    | 2503    | 859     | 766    | 871    | -       | n/a  |
| 30    | 1753  | 221   | 3181   | 2347   | 4602    | 5567    | 888     | 1323    | 905    | 1796   | -       | n/a  |
| 31    | 1135  | -     | -      | -      | 5371    | 5229    | 862     | 1397    | -      | -      | -       | n/a  |
| TOTAL | 4,294 | 1,755 | 53,228 | 40,091 | 131,534 | 142,758 | 103,787 | 114,695 | 56,801 | 61,373 | 16,627  | 8482 |

## Moraine Park Shuttle Ridership

|       | May  |      | Ju    | ne    | Ju     | ily    | Aug    | gust   | September |       | October |      |
|-------|------|------|-------|-------|--------|--------|--------|--------|-----------|-------|---------|------|
|       | 2010 | 2011 | 2010  | 2011  | 2010   | 2011   | 2010   | 2011   | 2010      | 2011  | 2010    | 2011 |
| 1     | -    | -    | -     | -     | 435    | 360    | 338    | 532    | 158       | 158   | 104     | 390  |
| 2     | -    | -    | -     | -     | 275    | 579    | 431    | 593    | 137       | 273   | 177     | 271  |
| 3     | -    | -    | -     | -     | 598    | 814    | 574    | 484    | 198       | 527   | 150     | n/a  |
| 4     | -    | -    | -     | 362   | 422    | 400    | 528    | 610    | 477       | 918   | 82      | n/a  |
| 5     | -    | -    | 327   | 469   | 448    | 381    | 563    | 556    | 645       | 297   | 51      | n/a  |
| 6     | -    | -    | 247   | -     | 359    | 439    | 561    | 708    | 291       | 115   | -       | n/a  |
| 7     | -    | -    | -     | -     | 380    | 533    | 644    | 487    | 110       | 134   | -       | n/a  |
| 8     | -    | -    | -     | -     | 463    | 426    | 347    | 472    | 169       | 189   | -       | n/a  |
| 9     | -    | -    | -     | -     | 389    | 520    | 277    | 503    | 183       | 199   | 138     | n/a  |
| 10    | -    | -    | -     | -     | 672    | 289    | 552    | 477    | 149       | 295   | 60      | n/a  |
| 11    | -    | -    | -     | 321   | 357    | 472    | 544    | 607    | 276       | 204   | 44      | n/a  |
| 12    | -    | -    | 104   | 286   | 419    | 377    | 324    | 430    | 138       | 175   | -       | n/a  |
| 13    | -    | -    | 97    | 302   | 423    | 544    | 407    | 593    | 159       | 152   | -       | n/a  |
| 14    | -    | -    | 148   | 214   | 519    | 454    | 627    | 364    | 249       | 126   | -       | n/a  |
| 15    | -    | -    | 309   | 270   | 517    | 320    | 416    | 322    | 173       | 135   | -       | n/a  |
| 16    | -    | -    | 281   | 260   | 345    | 667    | 339    | 354    | 161       | 144   | 64      | n/a  |
| 17    | -    | -    | 479   | 178   | 691    | 545    | 389    | 453    | 150       | 168   | 57      | n/a  |
| 18    | -    | -    | 350   | 276   | 435    | 502    | 377    | 433    | 258       | 193   | -       | n/a  |
| 19    | -    | -    | 484   | 173   | 455    | 498    | 235    | 312    | 193       | 145   | -       | n/a  |
| 20    | -    | -    | 285   | 276   | 532    | 483    | 337    | 653    | 160       | 155   | -       | n/a  |
| 21    | -    | -    | 319   | 327   | 381    | 626    | 460    | 334    | 193       | 176   | -       | n/a  |
| 22    | -    | -    | 417   | 354   | 604    | 452    | 270    | 254    | 119       | 131   | -       | n/a  |
| 23    | -    | -    | 478   | 354   | 508    | 556    | 154    | 297    | 88        | 146   | -       | n/a  |
| 24    | -    | -    | 367   | 417   | 608    | 472    | 172    | 152    | 134       | 777   | -       | n/a  |
| 25    | -    | -    | 570   | 528   | 472    | 485    | 158    | 398    | 398       | 353   | -       | n/a  |
| 26    | -    | -    | 600   | 439   | 546    | 386    | 191    | 350    | 152       | 148   | -       | n/a  |
| 27    | -    | -    | 309   | 320   | 424    | 290    | 196    | 343    | 101       | 184   | -       | n/a  |
| 28    | -    | 149  | 310   | 495   | 535    | 531    | 387    | 264    | 94        | 183   | -       | n/a  |
| 29    | 302  | 385  | 373   | 379   | 449    | 382    | 235    | 145    | 105       | 186   | -       | n/a  |
| 30    | 340  | 111  | 363   | 276   | 511    | 774    | 150    | 203    | 139       | 144   | -       | n/a  |
| 31    | 165  | -    | -     | -     | 633    | 610    | 167    | 147    | -         | -     | -       | n/a  |
| TOTAL | 807  | 645  | 7,217 | 7,276 | 14,805 | 15,167 | 11,350 | 12,830 | 5,957     | 7,130 | 927     | n/a  |

### **Blue Shuttle Ridership**

|       | Ju   | June |      | ıly  | August |      | Septe | mber |
|-------|------|------|------|------|--------|------|-------|------|
|       | 2010 | 2011 | 2010 | 2011 | 2010   | 2011 | 2010  | 2011 |
| 1     | -    | -    | 137  | 248  | 174    | 232  | -     | 127  |
| 2     | -    | -    | 132  | 318  | 121    | 257  | -     | 142  |
| 3     | -    | -    | 271  | 347  | 119    | 223  | -     | 757  |
| 4     | -    | -    | 708  | 796  | 106    | 310  | 231   | 463  |
| 5     | -    | -    | 279  | 278  | 95     | 220  | 286   | 280  |
| 6     | -    | -    | 217  | 120  | 135    | 393  | 81    | 83   |
| 7     | -    | -    | 138  | 360  | 160    | 346  | -     | 185  |
| 8     | -    | -    | 197  | 216  | 172    | 281  | -     | 178  |
| 9     | -    | -    | 116  | 244  | 123    | 312  | -     | 243  |
| 10    | -    | -    | 235  | 227  | 136    | 240  | -     | 374  |
| 11    | -    | -    | 237  | 197  | 116    | 214  | -     | 194  |
| 12    | -    | -    | 166  | 168  | 111    | 295  | -     | -    |
| 13    | -    | -    | 124  | 278  | 149    | 343  | -     | -    |
| 14    | -    | -    | 181  | 336  | 149    | 251  | -     | -    |
| 15    | -    | -    | 155  | 287  | 153    | 238  | -     | -    |
| 16    | -    | -    | 155  | 310  | 77     | 204  | -     | -    |
| 17    | -    | -    | 211  | 220  | 111    | 191  | -     | n/a  |
| 18    | -    | -    | 218  | 261  | 101    | 218  | -     | n/a  |
| 19    | -    | -    | 146  | 203  | 111    | 197  | -     | -    |
| 20    | -    | -    | 158  | 208  | 78     | 244  | -     | -    |
| 21    | -    | -    | 122  | 270  | 173    | 210  | -     | -    |
| 22    | -    | -    | 166  | 304  | 107    | 209  | -     | -    |
| 23    | -    | -    | 209  | 452  | 96     | 176  | -     | -    |
| 24    | -    | -    | 207  | 459  | 83     | 163  | -     | n/a  |
| 25    | -    | 337  | 285  | 318  | 43     | 157  | -     | n/a  |
| 26    | 176  | 190  | 150  | 276  | 75     | 153  | -     | -    |
| 27    | 191  | 140  | 149  | 241  | 108    | 201  | -     | -    |
| 28    | 111  | 222  | 206  | 278  | 96     | 241  | -     | -    |
| 29    | 201  | 103  | 131  | 251  | 110    | 155  | -     | -    |
| 30    | 128  | 172  | 190  | 324  | -      | 125  | -     | -    |
| 31    | -    | -    | 181  | 343  | -      | 81   | -     | -    |
| TOTAL | 807  | 1164 | 6177 | 9138 | 3388   | 7080 | 598   | 3026 |

## **Red Shuttle Ridership**

|       | Ju   | June |      | lly  | Aug  | gust | Septe | mber |
|-------|------|------|------|------|------|------|-------|------|
|       | 2010 | 2011 | 2010 | 2011 | 2010 | 2011 | 2010  | 2011 |
| 1     | -    | -    | 41   | 69   | 75   | 146  | -     | 66   |
| 2     | -    | -    | 66   | 142  | 90   | 109  | -     | 58   |
| 3     | -    | -    | 138  | 171  | 84   | 111  | -     | 201  |
| 4     | -    | -    | 299  | 354  | 43   | 116  | 170   | 297  |
| 5     | -    | -    | 94   | 115  | 67   | 125  | 128   | 105  |
| 6     | -    | -    | 172  | 134  | 101  | 195  | 97    | 53   |
| 7     | -    | -    | 135  | 117  | 115  | 159  | -     | 70   |
| 8     | -    | -    | 126  | 212  | 116  | 104  | -     | 66   |
| 9     | -    | -    | 68   | 196  | 98   | 143  | -     | 79   |
| 10    | -    | -    | 73   | 71   | 72   | 118  | -     | 268  |
| 11    | -    | -    | 122  | 77   | 96   | 136  | -     | 82   |
| 12    | -    | -    | 88   | 115  | 79   | 88   | -     | -    |
| 13    | -    | -    | 117  | 156  | 123  | 121  | -     | -    |
| 14    | -    | -    | 76   | 137  | 151  | 134  | -     | -    |
| 15    | -    | -    | 86   | 168  | 91   | 92   | -     | -    |
| 16    | -    | -    | 177  | 156  | 90   | 102  | -     | -    |
| 17    | -    | -    | 159  | 132  | 64   | 144  | -     | n/a  |
| 18    | -    | -    | 78   | 113  | 65   | 103  | -     | n/a  |
| 19    | -    | -    | 141  | 96   | 65   | 55   | -     | -    |
| 20    | -    | -    | 75   | 156  | 69   | 117  | -     | -    |
| 21    | -    | -    | 105  | 173  | 121  | 109  | -     | -    |
| 22    | -    | -    | 107  | 154  | 85   | 73   | -     | -    |
| 23    | -    | -    | 149  | 198  | 68   | 102  | -     | -    |
| 24    | -    | -    | 93   | 136  | 63   | 115  | -     | n/a  |
| 25    | -    | 144  | 112  | 109  | 45   | 93   | -     | n/a  |
| 26    | 73   | 116  | 98   | 115  | 46   | 53   | -     | -    |
| 27    | 106  | 56   | 80   | 140  | 114  | 79   | -     | -    |
| 28    | 104  | 92   | 85   | 134  | 87   | 77   | -     | -    |
| 29    | 71   | 72   | 92   | 131  | 70   | 47   | -     | -    |
| 30    | 55   | 80   | 66   | 187  | -    | 55   | -     | -    |
| 31    | -    | -    | 122  | 134  | -    | 64   | -     | -    |
| TOTAL | 409  | 560  | 3440 | 4498 | 2453 | 3285 | 395   | 1345 |

## **Brown Shuttle Ridership**

|       | Ju   | June |      | lly  | Aug  | gust | Septe | mber |
|-------|------|------|------|------|------|------|-------|------|
|       | 2010 | 2011 | 2010 | 2011 | 2010 | 2011 | 2010  | 2011 |
| 1     | -    | -    | 143  | 212  | 162  | 218  | -     | 94   |
| 2     | -    | -    | 116  | 283  | 132  | 246  | -     | 136  |
| 3     | -    | -    | 266  | 200  | 125  | 194  | -     | 295  |
| 4     | -    | -    | 289  | 327  | 171  | 210  | 272   | 256  |
| 5     | -    | -    | 112  | 149  | 243  | 271  | 259   | 138  |
| 6     | -    | -    | 122  | 135  | 306  | 217  | 49    | 92   |
| 7     | -    | -    | 137  | 174  | 258  | 273  | -     | 69   |
| 8     | -    | -    | 181  | 265  | 181  | 250  | -     | 85   |
| 9     | -    | -    | 175  | 120  | 158  | 162  | -     | 102  |
| 10    | -    | -    | 300  | 173  | 195  | 167  | -     | 274  |
| 11    | -    | -    | 127  | 139  | 205  | 141  | -     | 120  |
| 12    | -    | -    | 140  | 206  | 184  | 183  | -     | -    |
| 13    | -    | -    | 111  | 179  | 198  | 317  | -     | -    |
| 14    | -    | -    | 228  | 130  | 282  | 169  | -     | -    |
| 15    | -    | -    | 230  | 193  | 135  | 171  | -     | -    |
| 16    | -    | -    | 226  | 218  | 132  | 162  | -     | -    |
| 17    | -    | -    | 305  | 178  | 103  | 110  | -     | n/a  |
| 18    | -    | -    | 195  | 208  | 203  | 141  | -     | n/a  |
| 19    | -    | -    | 165  | 220  | 194  | 154  | -     | -    |
| 20    | -    | -    | 218  | 158  | 160  | 228  | -     | -    |
| 21    | -    | -    | 179  | 202  | 267  | 217  | -     | -    |
| 22    | -    | -    | 235  | 166  | 130  | 215  | -     | -    |
| 23    | -    | -    | 276  | 276  | 140  | 137  | -     | -    |
| 24    | -    | -    | 172  | 219  | 96   | 115  | -     | n/a  |
| 25    | -    | 197  | 189  | 260  | 167  | 136  | -     | n/a  |
| 26    | 181  | 157  | 172  | 183  | 114  | 175  | -     | -    |
| 27    | 170  | 146  | 152  | 129  | 124  | 220  | -     | -    |
| 28    | 144  | 238  | 150  | 107  | 125  | 140  | -     | -    |
| 29    | 101  | 150  | 189  | 265  | 79   | 181  | -     | -    |
| 30    | 112  | 133  | 212  | 395  | -    | 135  | -     | -    |
| 31    | -    | -    | 347  | 222  | -    | 86   | -     | -    |
| TOTAL | 708  | 1021 | 6059 | 6291 | 4969 | 5741 | 580   | 1661 |

## Silver Shuttle Ridership

|       | June | July  | August | September |
|-------|------|-------|--------|-----------|
| 1     | -    | 56    | 143    | 122       |
| 2     | -    | 76    | 98     | 85        |
| 3     | -    | 96    | 126    | 373       |
| 4     | -    | 613   | 103    | 311       |
| 5     | -    | 110   | 115    | 154       |
| 6     | -    | 120   | 141    | 89        |
| 7     | -    | 74    | 166    | 79        |
| 8     | -    | 77    | 101    | 99        |
| 9     | -    | 77    | 133    | 625       |
| 10    | -    | 55    | 121    | 776       |
| 11    | -    | 88    | 104    | 999       |
| 12    | -    | 188   | 108    | -         |
| 13    | -    | 213   | 168    | -         |
| 14    | -    | 146   | 106    | -         |
| 15    | -    | 140   | 155    | -         |
| 16    | -    | 126   | 124    | -         |
| 17    | -    | 129   | 108    | n/a       |
| 18    | -    | 115   | 164    | n/a       |
| 19    | -    | 120   | 126    | -         |
| 20    | -    | 148   | 222    | -         |
| 21    | -    | 119   | 150    | -         |
| 22    | -    | 124   | 105    | -         |
| 23    | -    | 155   | 93     | -         |
| 24    | -    | 124   | 113    | n/a       |
| 25    | 88   | 100   | 94     | n/a       |
| 26    | 34   | 96    | 104    | -         |
| 27    | 17   | 132   | 134    | -         |
| 28    | 25   | 111   | 75     | -         |
| 29    | 75   | 129   | 100    | -         |
| 30    | 64   | 168   | 115    | -         |
| 31    | -    | 128   | 93     | -         |
| TOTAL | 303  | 4,153 | 3,808  | 3,712     |

## **APPENDIX G: TRAFFIC COUNTS**

### Silver Shuttle Ridership vs. Fairgrounds Park-And-Ride Traffic Counts

|     |       | Silver Shuttle | #Vehicles |                                      |                          |
|-----|-------|----------------|-----------|--------------------------------------|--------------------------|
| Day | Month | Ridership      | Entering  | Event                                | Explanation for No Count |
| 25  | June  | 88             | 954       | Rocky Mountain Miniature Horse Show  | -                        |
| 26  | June  | 34             | 189       | Rocky Mountain Miniature Horse Show  | -                        |
| 27  | June  | 17             | 99        | -                                    | -                        |
| 28  | June  | 25             | 65        | -                                    | -                        |
| 29  | June  | 75             | 80        | -                                    | -                        |
| 30  | June  | 64             | 662       | Farmer's Market                      | -                        |
| 1   | July  | 56             | 99        | -                                    | -                        |
| 2   | July  | 76             | 272       | -                                    | -                        |
| 3   | July  | 96             | 188       | -                                    | -                        |
| 4   | July  | 613            | 405       | Fireworks                            | -                        |
| 5   | July  | 110            | n/a       | -                                    | Counter exchange         |
| 6   | July  | 120            | n/a       | -                                    | Counter exchange         |
| 7   | July  | 74             | n/a       | -                                    | Counter exchange         |
| 8   | July  | 77             | n/a       | -                                    | Counter exchange         |
| 9   | July  | 77             | 119       | -                                    | -                        |
| 10  | July  | 55             | 125       | -                                    | -                        |
| 11  | July  | 88             | 154       | -                                    | -                        |
| 12  | July  | 188            | 782       | Rooftop Rodeo                        | -                        |
| 13  | July  | 213            | 152       | Rooftop Rodeo                        | -                        |
| 14  | July  | 146            | n/a       | Rooftop Rodeo                        | Counter malfunction      |
| 15  | July  | 140            | n/a       | Rooftop Rodeo                        | Counter malfunction      |
| 16  | July  | 126            | n/a       | Rooftop Rodeo                        | Counter malfunction      |
| 17  | July  | 129            | n/a       | Rooftop Rodeo                        | Counter malfunction      |
| 18  | July  | 115            | n/a       | -                                    | Counter malfunction      |
| 19  | July  | 120            | n/a       | -                                    | Counter malfunction      |
| 20  | July  | 148            | 231       | -                                    | -                        |
| 21  | July  | 119            | 875       | Hunter Jumper Show & Farmer's Market | -                        |
| 22  | July  | 124            | 399       | Hunter Jumper Show                   | -                        |
| 23  | July  | 155            | 332       | Hunter Jumper Show                   | -                        |
| 24  | July  | 124            | 299       | Hunter Jumper Show                   | -                        |
| 25  | July  | 100            | n/a       | -                                    | Counter malfunction      |
| 26  | July  | 96             | n/a       | -                                    | Counter malfunction      |
| 27  | July  | 132            | n/a       | Hunter Jumper Show                   | Counter malfunction      |
| 28  | July  | 111            | n/a       | Hunter Jumper Show                   | Counter malfunction      |
| 29  | July  | 129            | n/a       | Hunter Jumper Show                   | Counter malfunction      |
| 30  | July  | 168            | n/a       | Hunter Jumper Show                   | Counter exchange         |
| 31  | July  | 128            | n/a       | Hunter Jumper Show                   | Counter exchange         |
| 1  | August    | 143 | n/a | -  | Counter exchange    |
|----|-----------|-----|-----|--|---------------------|
| 2  | August    | 98  | n/a | -  | Counter malfunction |
| 3  | August    | 126 | n/a | Hunter Jumper Show                           | Counter malfunction |
| 4  | August    | 103 | n/a | Hunter Jumper Show                           | Counter malfunction |
| 5  | August    | 115 | n/a | Hunter Jumper Show                           | Counter malfunction |
| 6  | August    | 141 | n/a | Hunter Jumper Show                           | Counter malfunction |
| 7  | August    | 166 | n/a | Hunter Jumper Show                           | Counter malfunction |
| 8  | August    | 101 | n/a | -  | Counter malfunction |
| 9  | August    | 133 | n/a | -  | Counter malfunction |
| 10 | August    | 121 | n/a | Hunter Jumper Show                           | Counter malfunction |
| 11 | August    | 104 | n/a | Hunter Jumper Show                           | Counter malfunction |
| 12 | August    | 108 | n/a | Hunter Jumper Show                           | Counter malfunction |
| 13 | August    | 168 | n/a | Hunter Jumper Show                           | Counter malfunction |
| 14 | August    | 106 | n/a | Hunter Jumper Show                           | Counter malfunction |
| 15 | August    | 155 | n/a | -  | Counter malfunction |
| 16 | August    | 124 | n/a | -  | Counter malfunction |
| 17 | August    | 108 | n/a | -  | Counter exchange    |
| 18 | August    | 164 | 837 | Dressage Show Move-In & Farmer's Market      | -                   |
| 19 | August    | 126 | 301 | Senior Professional Rodeo                    | -                   |
| 20 | August    | 222 | 449 | Senior Professional Rodeo                    | -                   |
| 21 | August    | 150 | 626 | Draft Horse Show                             | -                   |
| 22 | August    | 105 | 22  | -  | -                   |
| 23 | August    | 93  | 19  | -  | -                   |
| 24 | August    | 113 | 15  | -  | -                   |
| 25 | August    | 94  | 692 | Farmer's Market                              | -                   |
| 26 | August    | 104 | 10  | -  | -                   |
| 27 | August    | 134 | 27  | -  | -                   |
| 28 | August    | 75  | 13  | -  | -                   |
| 29 | August    | 100 | 22  | -  | -                   |
| 30 | August    | 115 | 8   | -  | -                   |
| 31 | August    | 93  | 13  | -  | -                   |
| 1  | September | 122 | 719 | Farmer's Market                              | -                   |
| 2  | September | 85  | 43  | -  | -                   |
| 3  | September | 373 | 447 | -  | -                   |
| 4  | September | 311 | 237 | -  | -                   |
| 5  | September | 154 | 68  | -  | -                   |
| 6  | September | 89  | 27  | -  | -                   |
| 7  | September | 79  | n/a | -  | End of ITS Service  |
| 8  | September | 99  | n/a | Long's Peak Scottish-Irish Highland Festival | End of ITS Service  |
| 9  | September | 625 | n/a | Long's Peak Scottish-Irish Highland Festival | End of ITS Service  |
| 10 | September | 776 | n/a | Long's Peak Scottish-Irish Highland Festival | End of ITS Service  |
| 11 | September | 999 | n/a | Long's Peak Scottish-Irish Highland Festival | End of ITS Service  |



**Bear Lake Park-and-Ride Occupancy Figures** 

























































































































## Bear Lake Park-and-Ride Occupancy

| Date    | Peak      | Time of PO                   | Did the PO  | If PO Exceeded | Day of Week |
|---------|-----------|------------------------------|-------------|----------------|-------------|
|         | Occupancy |                              | Exceed 350? | 350, When?     | ,           |
|         | (PO)      |                              |             |                |             |
| 6/25/11 | 260       | 1-1:15pm                     | No          | n/a            | Saturday    |
| 6/26/11 | 281       | 12:30-12:45pm                | No          | n/a            | Sunday      |
| 6/27/11 | 139       | 1:15-1:30pm                  | No          | n/a            | Monday      |
| 6/28/11 | 187       | 12:45-1pm                    | No          | n/a            | Tuesday     |
| 6/29/11 | 166       | 12:45-1pm                    | No          | n/a            | Wednesday   |
| 6/30/11 | 154       | 12:15-12:30pm; 1-1:15pm      | No          | n/a            | Thursday    |
| 7/1/11  | 219       | 12:45-1pm                    | No          | n/a            | Friday      |
| 7/2/11  | 361       | 12:30-12:45pm                | Yes         | 12:15-1:15pm   | Saturday    |
| 7/9/11  | 304       | 12:15-12:30pm                | No          | n/a            | Saturday    |
| 7/10/11 | 286       | 12-12:15pm                   | No          | n/a            | Sunday      |
| 7/11/11 | 284       | 12:15-12:30pm                | No          | n/a            | Monday      |
| 7/12/11 | 258       | 12-12:15pm                   | No          | n/a            | Tuesday     |
| 7/13/11 | 282       | 12-12:15pm                   | No          | n/a            | Wednesday   |
| 7/14/11 | 311       | 12:15-12:30pm                | No          | n/a            | Thursday    |
| 7/15/11 | 301       | 12-12:15pm                   | No          | n/a            | Friday      |
| 7/16/11 | 351       | 12:15-12:30pm                | Yes         | 12:15-12:30pm  | Saturday    |
| 7/17/11 | 343       | 11:45-12pm                   | No          | n/a            | Sunday      |
| 7/18/11 | 327       | 12-12:15pm                   | No          | n/a            | Monday      |
| 7/19/11 | 338       | 12:15-12:30pm; 12:45-1pm     | No          | n/a            | Tuesday     |
| 7/20/11 | 319       | 12:15-12:30pm                | No          | n/a            | Wednesday   |
| 7/21/11 | 305       | 11:30-11:45pm                | No          | n/a            | Thursday    |
| 7/22/11 | 309       | 12:15-12:30pm                | No          | n/a            | Friday      |
| 7/23/11 | 317       | 12:30-12:45pm                | No          | n/a            | Saturday    |
| 7/24/11 | 365       | 12:45-1pm                    | Yes         | 11:30-2pm      | Sunday      |
| 7/25/11 | 333       | 12-12:15pm                   | No          | n/a            | Monday      |
| 7/26/11 | 300       | 12:15-12:30pm                | No          | n/a            | Tuesday     |
| 7/27/11 | 332       | 12:30-12:45pm                | No          | n/a            | Wednesday   |
| 7/28/11 | 345       | 12:15-12:30pm                | No          | n/a            | Thursday    |
| 8/2/11  | 347       | 11:15-11:30pm                | No          | n/a            | Tuesday     |
| 8/3/11  | 360       | 11:30-11:45pm                | Yes         | 11:15-12:15pm  | Wednesday   |
| 8/4/11  | 375       | 11:30-11:45pm                | Yes         | 11-12:45pm     | Thursday    |
| 8/5/11  | 394       | 11:45-12pm                   | Yes         | 11-1:15pm      | Friday      |
| 8/6/11  | 402       | 11:45-12pm                   | Yes         | 10:30-1:30pm   | Saturday    |
| 8/7/11  | 406       | 11:45-12pm                   | Yes         | 11-2:45pm      | Sunday      |
| 8/8/11  | 370       | 12-12:15pm                   | Yes         | 11:15-1:15pm   | Monday      |
| 8/9/11  | 347       | 12-12:15pm                   | No          | n/a            | Tuesday     |
| 8/10/11 | 322       | 12:15-12:30pm                | No          | n/a            | Wednesday   |
| 8/11/11 | 308       | 12:15-12:30pm                | No          | n/a            | Thursday    |
| 8/12/11 | 362       | 12:15-12:30pm                | Yes         | 11:45-1pm      | Friday      |
| 8/13/11 | 358       | 11:45-12pm                   | Yes         | 11:15-12:30pm  | Saturday    |
| 8/14/11 | 307       | 1-1:15pm                     | No          | n/a            | Sunday      |
| 8/15/11 | 325       | 1-1:15pm                     | No          | n/a            | Monday      |
| 8/18/11 | 310       | 1-1:15pm                     | No          | n/a            | Thursday    |
| 8/19/11 | 257       | 12:15-12:30pm; 12:30-12:45pm | No          | n/a            | Friday      |
| 8/20/11 | 353       | 12-12:15pm                   | Yes         | 12-12:15pm     | Saturday    |
| 8/21/11 | 294       | 12:45-1pm                    | No          | n/a            | Sunday      |

| 8/22/11 | 233 | 12:30-12:45pm                 | No  | n/a          | Monday    |
|---------|-----|-------------------------------|-----|--------------|-----------|
| 8/23/11 | 200 | 12:15-12:30pm                 | No  | n/a          | Tuesday   |
| 8/24/11 | 146 | 11:45-12pm                    | No  | n/a          | Wednesday |
| 8/25/11 | 203 | 11:45-12pm; 12:15-12:30pm     | No  | n/a          | Thursday  |
| 8/26/11 | 206 | 12:30-12:45pm; 12:45-1pm      | No  | n/a          | Friday    |
| 8/27/11 | 381 | 11:45-12pm                    | Yes | 11:30-1:30pm | Saturday  |
| 8/28/11 | 266 | 12:30-12:45pm                 | No  | n/a          | Sunday    |
| 8/29/11 | 77  | 1-1:15pm                      | No  | n/a          | Monday    |
| 8/30/11 | 145 | 1-1:15pm                      | No  | n/a          | Tuesday   |
| 8/31/11 | 128 | 1-1:15pm                      | No  | n/a          | Wednesday |
| 9/1/11  | 128 | 12:15-12:30pm; 12:30-12:45pm; | No  | n/a          | Thursday  |
|         |     | 1-1:15pm                      |     |              |           |
| 9/2/11  | 206 | 1:15-1:30pm                   | No  | n/a          | Friday    |
| 9/3/11  | 386 | 12-12:15pm; 12:30-12:45pm     | Yes | 11:30-2pm    | Saturday  |
| 9/4/11  | 369 | 12:15-12:30pm                 | Yes | 11-1:30pm    | Sunday    |
| 9/5/11  | 309 | 1-1:15pm                      | No  | n/a          | Monday    |
| 9/6/11  | 24  | 2-2:15pm                      | No  | n/a          | Tuesday   |

|   |    | June | July | August | September |
|---|----|------|------|--------|-----------|
|   | 1  | -    | 3601 | -      | 2235      |
|   | 2  | -    | 4331 | 3325   | 2835      |
|   | 3  | -    | 4669 | 3518   | 3926      |
|   | 4  | -    | 3678 | 3741   | 4488      |
|   | 5  | -    | -    | 4015   | 3360      |
|   | 6  | -    | -    | 4089   | 1696      |
|   | 7  | -    | -    | 4141   | -         |
|   | 8  | -    | -    | 3482   | -         |
|   | 9  | -    | 3805 | 3423   | -         |
|   | 10 | -    | 3791 | 3322   | -         |
|   | 11 | -    | 3178 | 3405   | -         |
|   | 12 | -    | 3006 | 3691   | -         |
|   | 13 | -    | 3322 | 4073   | -         |
|   | 14 | -    | 3193 | 3493   | -         |
|   | 15 | -    | 3662 | 3065   | -         |
|   | 16 | -    | 4090 | -      | -         |
|   | 17 | -    | 3941 | -      | -         |
|   | 18 | -    | 3582 | 2993   | -         |
|   | 19 | -    | 3541 | 3022   | -         |
|   | 20 | -    | 3553 | 3452   | -         |
|   | 21 | -    | 3569 | 3015   | -         |
|   | 22 | -    | 3966 | 2369   | -         |
|   | 23 | -    | 4377 | 2287   | -         |
| ľ | 24 | -    | 4284 | 2229   | -         |
|   | 25 | 3750 | 3620 | 2389   | -         |
|   | 26 | 3847 | 3383 | 2719   | -         |
|   | 27 | 2899 | 3436 | 3501   | -         |
|   | 28 | 3214 | 3413 | 2740   | -         |
|   | 29 | 2920 | -    | 1742   | -         |
|   | 30 | 2963 | -    | 1894   | -         |
|   | 31 | -    | -    | 1854   | -         |

## **Beaver Meadows Daily Traffic Counts**



This figure shows the average daily entrance counts at the Beaver Meadows entrance by day for each month. Note that there are only one or two observations per day for June and September. The figure shows that the average daily entrance counts for Monday through Thursday across all months is less than that for Friday, Saturday, or Sunday. The average daily entrance count for Monday through Thursday was 3056, as shown by the line on the figure. Note that the spikes in average daily entrance counts on Mondays for July and September include the 4<sup>th</sup> of July and Labor Day. Additionally, this chart shows that Saturday and Sunday exhibit similar visitation with averages of 3939 and 3841, respectively. Friday, when compared with the other days of the week, has a visitation level between that observed during the other weekdays and that observed for Saturday and Sunday at 3439.
# **APPENDIX H: SHUTTLE SURVEY DETAILED RESULTS**

This appendix shows the survey question layout and summary statistics for the **shuttle survey** that was distributed on-board the Silver Route shuttle. A total of 68 surveys were distributed on-board the shuttle. The statistical results shown include frequencies, percentages, means and standard deviations. The symbol \* indicates the number not answered per question, which was not a factor in our calculations.

1. Is this your first time visiting Estes Park/Rocky Mountain National Park?

|     | Count | Percent |
|-----|-------|---------|
| Yes | 26    | 38.2    |
| No  | 42    | 61.8    |
|     | N=    | 68      |
|     | *=    | 0       |

2. How would you rate your overall experience visiting Estes Park/Rocky Mountain National Park?

|           | Count  | Percent |
|-----------|--------|---------|
| Very good | 50     | 74.6    |
| Good      | 14     | 20.9    |
| Average   | 1      | 1.5     |
| Poor      | 2      | 3.0     |
| Very poor | 0      | 0.0     |
|           | N=     | 67      |
|           | *=     | 1       |
|           | Mean   | 4.67    |
|           | St Dev | 0.660   |

3. How would you rate your travel experience (i.e. driving, navigating, parking) while visiting Estes Park/Rocky Mountain National Park?

|           | Count  | Percent |
|-----------|--------|---------|
| Very good | 28     | 45.9    |
| Good      | 24     | 39.3    |
| Average   | 6      | 9.8     |
| Poor      | 3      | 4.9     |
| Very poor | 0      | 0.0     |
|           | N=     | 61      |
|           | *=     | 7       |
|           | Mean   | 4.26    |
|           | St Dev | 0.835   |

4. How long do you plan to spend visiting Estes Park/Rocky Mountain National Park?

|                    | Count | Percent |
|--------------------|-------|---------|
| Overnight-visitors | 28    | 41.2    |
| Day-visitor        | 23    | 33.8    |
| Local resident     | 17    | 25.0    |
|                    | N=    | 68      |
|                    | *=    | 0       |

| Breakdown for Overnight-visitors | Count | Percent |
|----------------------------------|-------|---------|
| 1-3 days                         | 10    | 35.7    |
| 4-7 days                         | 4     | 14.3    |
| 8-14 days                        | 3     | 10.7    |
| 15-29 days                       | 1     | 3.6     |
| 30 days or more                  | 10    | 35.7    |
|                                  | N=    | 28      |
|                                  | *=    | 0       |

| Breakdown for Day-visitors | Count | Percent |
|----------------------------|-------|---------|
| 1-3 hours                  | 2     | 8.7     |
| 4-6 hours                  | 10    | 43.5    |
| 7-12 hours                 | 11    | 47.8    |
|                            | N=    | 23      |
|                            | *=    | 0       |

5. Which route did you travel to arrive to the area on this trip?

|        | Count | Percent |
|--------|-------|---------|
| Hwy 36 | 45    | 72.6    |
| Hwy 34 | 7     | 11.3    |
| Hwy 7  | 1     | 1.6     |
| Other  | 9     | 14.5    |
|        | N=    | 62      |
|        | *=    | 6       |

## **Responses for "Other" include:**

- Local
- Walked
- Student from Columbia
- 6. Did you see an electronic message sign while traveling on this trip?

|     | Count | Percent |
|-----|-------|---------|
| Yes | 42    | 66.7    |
| No  | 21    | 33.3    |
|     | N=    | 63      |
|     | *=    | 5       |

a. At which location(s) did you see an electronic message sign?

|                | Loca      | ation 1 Location 2 |                      | Location 3 |                   |         |
|----------------|-----------|--------------------|----------------------|------------|-------------------|---------|
|                | (near the | e Town of          | (on the descent into |            | (Right before the |         |
|                | Lyo       | ons)               | Estes                | Park)      | turn f            | or the  |
|                |           |                    |                      |            | Fairgr            | ounds   |
|                |           |                    |                      |            | Park-an           | d-Ride) |
|                | Count     | Percent            | Count                | Percent    | Count             | Percent |
| Yes            | 21        | 51.2               | 29                   | 70.7       | 19                | 46.3    |
| No             | 17        | 41.5               | 9                    | 22.0       | 19                | 46.3    |
| Don't remember | 3         | 7.3                | 3                    | 7.3        | 3                 | 7.3     |
|                | N=        | 41                 | N=                   | 41         | N=                | 41      |
|                | *=        | 1                  | *=                   | 1          | *=                | 1       |

b. For each location where you saw an electronic message sign, how strongly do you agree or disagree with the following statements about the placements of the signs?

|                | The sign at |          | The sign at |          | The sign at       |         |
|----------------|-------------|----------|-------------|----------|-------------------|---------|
|                | Location    | 1 was in | Location    | 2 was in | Location 3 was in |         |
|                | a good      | d spot.  | a goo       | d spot.  | a good spot.      |         |
|                | Count       | Percent  | Count       | Percent  | Count             | Percent |
| Strongly agree | 14          | 63.6     | 20          | 71.4     | 16                | 72.7    |
| Somewhat       | 5           | 22.7     | 6           | 21.4     | 2                 | 9.1     |
| agree          |             |          |             |          |                   |         |
| Neither        | 3           | 13.6     | 2           | 7.1      | 2                 | 9.1     |
| Somewhat       | 0           | 0.0      | 0           | 0.0      | 1                 | 4.5     |
| disagree       |             |          |             |          |                   |         |
| Strongly       | 0           | 0.0      | 0           | 0.0      | 1                 | 4.5     |
| disagree       |             |          |             |          |                   |         |
|                | N=          | 22       | N=          | 28       | N=                | 22      |
|                | *=          | 2        | *=          | 4        | *=                | 0       |
|                | Mean        | 4.50     | Mean        | 4.74     | Mean              | 4.41    |
|                | St Dev      | .740     | St Dev      | .621     | St Dev            | 1.14    |

c. Did at least one of the electronic message signs display a message prompting you to tune to the highway advisory radio, AM 1630?

|     | Count | Percent |
|-----|-------|---------|
| Yes | 33    | 82.5    |
| No  | 7     | 17.5    |
|     | N=    | 40      |
|     | *=    | 2       |

7. Did you tune to AM 1630 during this trip?

|     | Count | Percent |
|-----|-------|---------|
| Yes | 20    | 29.4    |
| No  | 48    | 70.6    |
|     | N=    | 68      |
|     | *=    | 0       |

a. How strongly do you agree or disagree with the following statements about how your travel plans were influenced based on the information provided on AM 1630?

|                   | The information<br>influenced<br>me to use<br>the Park-and-Ride |         | Influence<br>visit co<br>attraction<br>the | ed me to<br>ertain<br>is later in<br>day | The information<br>had no<br>effect on my trip |         |
|-------------------|---|---------|--|--|--|---------|
|                   | Count   | Percent | Count                                      | Percent                                  | Count  | Percent |
| Strongly agree    | 16  | 80.0    | 0  | 0.0                                      | 2  | 12.5    |
| Somewhat agree    | 3   | 15.0    | 3  | 17.6                                     | 1  | 6.2     |
| Neither           | 0   | 0.0     | 11   | 64.8                                     | 6  | 37.5    |
| Somewhat disagree | 0   | 0.0     | 0  | 0.0                                      | 2  | 12.5    |
| Strongly disagree | 1   | 5.0     | 3  | 17.6                                     | 5  | 31.2    |
|                   | N=  | 20      | N=   | 17                                       | N=   | 16      |
|                   | *=  | 0       | *=   | 3  | *=   | 4       |
|                   | Mean  | 4.65    | Mean                                       | 2.82                                     | Mean   | 2.56    |
|                   | St Dev  | .933    | St Dev                                     | .951                                     | St Dev   | 1.37    |

### b. How strongly do you agree or disagree with the following statements about AM 1630?

|                   | The information was accurate |         | The info<br>saved m | rmation<br>ne time | I was able to get<br>around easier with<br>the information |         |
|-------------------|------------------------------|---------|---------------------|--------------------|--|---------|
|                   | Count                        | Percent | Count               | Percent            | Count  | Percent |
| Strongly agree    | 14                           | 73.7    | 10                  | 50.0               | 9  | 50.0    |
| Somewhat agree    | 5                            | 26.3    | 3                   | 15.0               | 4  | 22.2    |
| Neither           | 0                            | 0.0     | 3                   | 15.0               | 3  | 16.7    |
| Somewhat disagree | 0                            | 0.0     | 3                   | 15.0               | 2  | 11.1    |
| Strongly disagree | 0                            | 0.0     | 1                   | 5.0                | 0  | 0.0     |
|                   | N=                           | 19      | N=                  | 20                 | N=   | 18      |
|                   | *=                           | 1       | *=                  | 0                  | *=   | 2       |
|                   | Mean                         | 4.74    | Mean                | 3.90               | Mean   | 4.11    |
|                   | St Dev                       | .452    | St Dev              | 1.33               | St Dev   | 1.08    |

## c. Continued...

|                   | I would use<br>the information<br>again |         | The information<br>was useful |         | The information<br>helped me avoid<br>traffic congestion |         | I needed more<br>information |         |
|-------------------|---|---------|-------------------------------|---------|--|---------|------------------------------|---------|
|                   | Count                                   | Percent | Count                         | Percent | Count  | Percent | Count                        | Percent |
| Strongly agree    | 10                                      | 50.0    | 10                            | 52.6    | 9  | 45.0    | 5                            | 35.7    |
| Somewhat agree    | 7                                       | 35.0    | 7                             | 36.8    | 6  | 30.0    | 6                            | 42.9    |
| Neither           | 1                                       | 5.0     | 1                             | 5.3     | 2  | 10.0    | 1                            | 7.1     |
| Somewhat disagree | 1                                       | 5.0     | 0                             | 0.0     | 2  | 10.0    | 1                            | 7.1     |
| Strongly disagree | 1                                       | 5.0     | 1                             | 5.3     | 1  | 5.0     | 1                            | 7.1     |
|                   | N=                                      | 20      | N=                            | 19      | N=   | 20      | N=                           | 14      |
|                   | *=                                      | 0       | *=                            | 1       | *=   | 0       | *=                           | 6       |
|                   | Mean                                    | 4.20    | Mean                          | 4.32    | Mean   | 4.0     | Mean                         | 3.93    |
|                   | St Dev                                  | 1.11    | St Dev                        | 1.00    | St Dev   | 1.21    | St Dev                       | 1.21    |

## **Responses for "I needed more information" include:**

- Park & ride signs are difficult to follow in Estes Park
- Signal was bad
- When you park, it's not clear where you pick up the shuttle. There needs to be a sign.
- Where actually to go to pick up to park & ride (location of station)
- Would have been much faster to drive. Looong lines for shuttles.

8. Have you used a shuttle to travel around Estes Park/Rocky Mountain National Park prior to this visit?

|     | Count | Percent |
|-----|-------|---------|
| Yes | 29    | 43.3    |
| No  | 38    | 56.7    |
|     | N=    | 67      |
|     | *=    | 1       |

9. Which shuttle route(s) have you used or do you plan to use while visiting Estes Park/Rocky Mountain National Park during this trip?

|                          | Have used |         | Plan t | o use   |
|--------------------------|-----------|---------|--------|---------|
|                          | Count     | Percent | Count  | Percent |
| The Hiker shuttle        | 31        | 47.0    | 11     | 16.7    |
| The Bear Lake shuttle    | 30        | 45.5    | 7      | 10.6    |
| The Moraine Park shuttle | 12        | 18.2    | 11     | 16.7    |
| The Red Route shuttle    | 11        | 16.7    | 6      | 9.1     |
| The Blue Route shuttle   | 9         | 13.6    | 7      | 10.6    |
| The Brown Route shuttle  | 8         | 12.1    | 5      | 7.6     |
|                          | N=        | 66      | N=     | 66      |
|                          | *=        | 2       | *=     | 2       |

10. How did you learn about the Fairgrounds Silver Route shuttle?

|   | Count | Percent |
|---|-------|---------|
| Electronic message sign                                 | 27    | 41.5    |
| Highway advisory radio                                  | 14    | 21.5    |
| Family or friends                                       | 9     | 13.8    |
| From visitor center staff                               | 8     | 12.3    |
| A newspaper article                                     | 7     | 10.8    |
| Previous visits   | 4     | 6.2     |
| From hotel/lodge/campsite staff                         | 3     | 4.6     |
| The Town of Estes Park website                          | 2     | 3.1     |
| Through my employment with a business in Estes Park     | 2     | 3.1     |
| Through my employment with Rocky Mountain National Park | 1     | 1.5     |
| The Rocky Mountain National Park website                | 0     | 0       |
| Other   | 9     | 13.8    |
|   | N=    | 65      |
|   | *=    | 3       |

#### **Responses for "Other" include:**

- Fairground shelter
- Green signs
- I live here
- I live right by it
- Just saw it
- Road sign
- Shuttle map
- Signs at stops

• White sign on side of road

11. Please indicate how strongly you agree or disagree with the following statements about the Fairgrounds Silver Route shuttle.

|                   | I had trouble finding the shuttle schedule |         | The shuttle<br>schedule is<br>confusing |         | The shuttle is easy to use |         | The shuttle saved me time |             |
|-------------------|--|---------|---|---------|----------------------------|---------|---------------------------|-------------|
|                   | Count                                      | Percent | Count                                   | Percent | Count                      | Percent | Count                     | Percen<br>t |
| Strongly agree    | 3  | 5.2     | 1                                       | 1.8     | 45                         | 76.3    | 40                        | 63.5        |
| Somewhat agree    | 3  | 5.2     | 2                                       | 3.5     | 12                         | 20.3    | 10                        | 15.9        |
| Neither           | 6  | 10.3    | 5                                       | 8.8     | 0                          | 0.0     | 8                         | 12.7        |
| Somewhat disagree | 10   | 17.2    | 12                                      | 21.2    | 0                          | 0.0     | 4                         | 6.3         |
| Strongly disagree | 36   | 62.1    | 37                                      | 64.9    | 2                          | 3.4     | 1                         | 1.6         |
|                   | N=   | 58      | N=                                      | 57      | N=                         | 59      | N=                        | 63          |
|                   | *=   | 10      | *=                                      | 11      | *=                         | 9       | *=                        | 5           |
|                   | Mean                                       | 1.74    | Mean                                    | 1.56    | Mean                       | 4.66    | Mean                      | 4.33        |
|                   | St Dev                                     | 1.16    | St Dev                                  | .926    | St Dev                     | .801    | St Dev                    | 1.03        |

|                   | The sh<br>conv | nuttle is Shuttle<br>enient run free<br>eno |        | doesn't<br>quently<br>ugh | Getting on/off the shuttle is challenging |         | I had to switch<br>shuttles too many<br>times |         |
|-------------------|----------------|---|--------|---------------------------|---|---------|---|---------|
|                   | Count          | Percent                                     | Count  | Percent                   | Count                                     | Percent | Count   | Percent |
| Strongly agree    | 45             | 77.6  | 2      | 3.4                       | 0   | 0.0     | 1   | 1.7     |
| Somewhat agree    | 10             | 17.2  | 6      | 10.3                      | 2   | 3.4     | 11  | 18.6    |
| Neither           | 2              | 3.4   | 11     | 19.0                      | 3   | 5.2     | 8   | 13.6    |
| Somewhat disagree | 1              | 1.7   | 13     | 22.4                      | 5   | 8.6     | 14  | 23.7    |
| Strongly disagree | 0              | 0.0   | 26     | 44.8                      | 48  | 82.8    | 25  | 42.4    |
|                   | N=             | 58  | N=     | 58                        | N=  | 58      | N=  | 59      |
|                   | *=             | 10  | *=     | 10                        | *=  | 10      | *=  | 9       |
|                   | Mean           | 4.71  | Mean   | 2.05                      | Mean                                      | 1.29    | Mean  | 2.14    |
|                   | St Dev         | .622  | St Dev | 1.18                      | St Dev                                    | .726    | St Dev  | 1.21    |

|                   | Shuttle<br>have eno<br>for | doesn't<br>ough room<br>gear | Seems difficult to<br>travel with<br>children |         | l enjoyed my<br>experience |         | I would use the shuttle again |         |
|-------------------|----------------------------|------------------------------|---|---------|----------------------------|---------|-------------------------------|---------|
|                   | Count                      | Percent                      | Count   | Percent | Count                      | Percent | Count                         | Percent |
| Strongly agree    | 0                          | 0.0                          | 0   | 0.0     | 47                         | 78.3    | 54                            | 85.7    |
| Somewhat agree    | 2                          | 3.4                          | 1   | 2.0     | 8                          | 13.3    | 4                             | 6.3     |
| Neither           | 12                         | 20.7                         | 15  | 29.4    | 3                          | 5.0     | 1                             | 1.6     |
| Somewhat disagree | 8                          | 13.8                         | 6   | 11.8    | 0                          | 0.0     | 2                             | 3.2     |
| Strongly disagree | 36                         | 62.1                         | 29  | 56.9    | 2                          | 3.3     | 2                             | 3.2     |
|                   | N=                         | 58                           | N=  | 51      | N=                         | 60      | N=                            | 63      |
|                   | *=                         | 10                           | *=  | 17      | *=                         | 8       | *=                            | 5       |
|                   | Mean                       | 1.66                         | Mean  | 1.76    | Mean                       | 4.63    | Mean                          | 4.68    |
|                   | St Dev                     | .928                         | St Dev  | .951    | St Dev                     | .863    | St Dev                        | .913    |

# 12. What is your zip code or country of residence?

|          | Count | Percent |
|----------|-------|---------|
| USA      | 56    | 83.5    |
| Nigeria  | 3     | 4.5     |
| Romania  | 3     | 4.5     |
| China    | 2     | 3.0     |
| Columbia | 2     | 3.0     |
| Canada   | 1     | 1.5     |
|          | N=    | 67      |
|          | *=    | 1       |

| Breakdown of U.S. Visitors | Count | Percent |
|----------------------------|-------|---------|
| Other State                | 22    | 40.0    |
| Estes Park                 | 17    | 30.9    |
| Other Colorado Cities      | 16    | 29.1    |
|                            | N=    | 55      |
|                            | *=    | 1       |
|                            |       |         |

13. How many people are you traveling with today, including yourself?

|           | Count | Percent |
|-----------|-------|---------|
| 1         | 24    | 35.3    |
| 2         | 27    | 39.7    |
| 3 to 5    | 11    | 16.2    |
| 6 or more | 6     | 8.8     |
|           | N=    | 68      |
|           | *=    | 0       |

|                    | Children     |         | Chi    | ldren   | Adults  |         | Seniors   | (65     |
|--------------------|--------------|---------|--------|---------|---------|---------|-----------|---------|
|                    | (5 or under) |         | (6-17) |         | (18-64) |         | or older) |         |
| Breakdown by group | Count        | Percent | Count  | Percent | Count   | Percent | Count     | Percent |
| Yes                | 4            | 5.9     | 12     | 17.6    | 60      | 88.2    | 10        | 14.7    |
| No                 | 64           | 94.1    | 56     | 52.4    | 8       | 11.8    | 58        | 85.3    |
|                    | N=           | 68      | N=     | 68      | N=      | 68      | N=        | 68      |
|                    | *=           | 0       | *=     | 0       | *=      | 0       | *=        | 0       |

## Additional Comments:

- Beautiful park
- Better signage for silver route at fairgrounds.
- Drivers are very friendly! And happy
- Enjoyed!
- Estes Park is wonderful. We're all having a great time!
- I have to work in the gift shop of gateway at 8:00am on Tuesday and Thursday. Could there be any shuttle travel at that time. I don't need the silver one. But I need the red route deadly. By the way, I live besides the school. It's very, very far.
- I hope the shuttle continues. I live in carriage hills, E.P. & find it very convenient.
- I like this place a lot. I like free shuttle!
- I think the shuttle is a valuable service. Good work!
- It would be nice if the shuttle ran earlier
- Most courteous and helpful drivers
- Need to give flyer or something on where/when shuttles come. Fairground electronic sign then nothing to direct you to where actual shuttle is. Great otherwise.
- Put "free" on the ads coming into town.
- Put free on every sign. I think it says park & ride only. Everyone loves free.
- Shuttle is great
- Shuttles at Zion Park have audio info about the routes & terrain. It would be a nice addition to have those @ rocky mtn. Disappointed with the whole experience.
- Some instructions in parking lot.

- Start earlier in season.
- Staying at Jellystone. Go out there.
- The shuttle doesn't seem worth it. The other shuttles in the park are great. It would be better if the shuttle went right to the beaver meadows visitor center.
- The shuttle rocks!
- The shuttle should wait at least 5 minutes before taking off
- The signs weren't clear once I turned. You should have a sign where the shuttle stops to pick people up.
- There should be a shuttle (hiker) that stops at/near moraine visitor center on the way to/from park & ride.
- Useful but targeted exclusively at tourists, more stops geared toward locals would help.
- Very convenient for seniors
- Was hard to find shuttle stop at silver route park/n/ride
- We were told the shuttle bus went to rocky mountain national park (which it did) we didn't know that it didn't go all the way through. It would have been nice to know all the info up front.

# APPENDIX I: TWO-WAY COMPARISONS FOR THE SHUTTLE SURVEY

|           | Saw DMS |         | Did not see DMS |         |
|-----------|---------|---------|-----------------|---------|
|           | Count   | Percent | Count           | Percent |
| Very good | 33      | 80.5    | 12              | 57.1    |
| Good      | 7       | 17.1    | 7               | 33.3    |
| Average   | 0       | 0.0     | 1               | 4.8     |
| Poor      | 1       | 2.4     | 1               | 4.8     |
| Very poor | 0       | 0.0     | 0               | 0.0     |
|           | N=      | 41      | N=              | 21      |
|           | Mean    | 4.76    | Mean            | 4.43    |

Question 2 (Overall Experience) vs. Question 6 (Saw DMS)

Question 2 (Overall Experience) vs. Question 15 (Visitor Type)

|           | Visitor |         | Local Resident |         | Local Employee |         |
|-----------|---------|---------|----------------|---------|----------------|---------|
|           | Count   | Percent | Count          | Percent | Count          | Percent |
| Very good | 33      | 49.2    | 11             | 16.4    | 6              | 9.0     |
| Good      | 8       | 11.9    | 3              | 4.5     | 3              | 4.5     |
| Average   | 0       | 0.0     | 1              | 1.5     | 0              | 0.0     |
| Poor      | 2       | 3.0     | 0              | 0.0     | 0              | 0.0     |
| Very poor | 0       | 0.0     | 0              | 0.0     | 0              | 0.0     |
|           | N=      | 43      | N=             | 15      | N=             | 9       |
|           | Mean    | 4.67    | Mean           | 4.67    | Mean           | 4.67    |

Question 3 (Travel Experience) vs. Question 15 (Visitor Type)

|           | Visitor |         | Local Resident |         | Local Employee |         |
|-----------|---------|---------|----------------|---------|----------------|---------|
|           | Count   | Percent | Count          | Percent | Count          | Percent |
| Very good | 23      | 49.2    | 3              | 16.4    | 2              | 9.0     |
| Good      | 14      | 11.9    | 5              | 4.5     | 5              | 4.5     |
| Average   | 2       | 0.0     | 2              | 1.5     | 2              | 0.0     |
| Poor      | 1       | 3.0     | 2              | 0.0     | 0              | 0.0     |
| Very poor | 0       | 0.0     | 0              | 0.0     | 0              | 0.0     |
|           | N=      | 40      | N=             | 12      | N=             | 9       |
|           | Mean    | 4.48    | Mean           | 3.75    | Mean           | 4.0     |

# Question 6 (Saw DMS) vs. Question 15 (Visitor Type)

|     | Visitor |         | Local Resident |         | Local Employee |         |
|-----|---------|---------|----------------|---------|----------------|---------|
|     | Count   | Percent | Count          | Percent | Count          | Percent |
| Yes | 37      | 86.0    | 5              | 45.5    | 0              | 0.0     |
| No  | 6       | 14.0    | 6              | 54.5    | 9              | 100     |
|     | N=      | 43      | N=             | 11      | N=             | 9       |

# Question 7 (Tuned to HAR) vs. Question 15 (Visitor Type)

|     | Visitor |         | Local Resident |         | Local Employee |         |
|-----|---------|---------|----------------|---------|----------------|---------|
|     | Count   | Percent | Count          | Percent | Count          | Percent |
| Yes | 20      | 45.5    | 0              | 0.0     | 0              | 0.0     |
| No  | 24      | 54.5    | 15             | 100     | 9              | 100     |
|     | N=      | 44      | N=             | 15      | N=             | 9       |

## Question 8 (Prior Shuttle Use) vs. Question 15 (Visitor Type)

|     | Visitor |         | Local Resident |         | Local Employee |         |
|-----|---------|---------|----------------|---------|----------------|---------|
|     | Count   | Percent | Count          | Percent | Count          | Percent |
| Yes | 12      | 27.9    | 13             | 86.7    | 4              | 44.4    |
| No  | 31      | 72.1    | 2              | 13.3    | 5              | 55.6    |
|     | N=      | 43      | N=             | 15      | N=             | 9       |

# **APPENDIX J: VISITOR SURVEY DETAILED RESULTS**

This appendix shows the survey question layout and summary statistics for the **visitor survey** that was distributed at the Estes Park Convention and Visitors Bureau (CVB) and Bond Park. A total of 490 surveys were distributed: 119 at the CVB and 371 at Bond Park. The statistical results shown include frequencies, percentages, means and standard deviations. The symbol \* indicates the number not answered per question, which was not a factor in our calculations.

1. Is this your first time visiting Estes Park/Rocky Mountain National Park?

|     | Count | Percent |
|-----|-------|---------|
| Yes | 212   | 43.4    |
| No  | 276   | 56.6    |
|     | N=    | 488     |
|     | *=    | 2       |

2. How would you rate your overall experience visiting Estes Park/Rocky Mountain National Park?

|           | Count  | Percent |
|-----------|--------|---------|
| Very good | 305    | 64.8    |
| Good      | 152    | 32.3    |
| Average   | 10     | 2.1     |
| Poor      | 2      | 0.4     |
| Very poor | 2      | 0.4     |
|           | N=     | 471     |
|           | *=     | 19      |
|           | Mean   | 4.61    |
|           | St Dev | 0.599   |

3. How would you rate your travel experience (i.e. driving, navigating, parking) while visiting Estes Park/Rocky Mountain National Park?

|           | Count  | Percent |
|-----------|--------|---------|
| Very good | 187    | 39.7    |
| Good      | 198    | 42.0    |
| Average   | 60     | 12.7    |
| Poor      | 20     | 4.2     |
| Very poor | 6      | 1.3     |
|           | N=     | 471     |
|           | *=     | 19      |
|           | Mean   | 4.15    |
|           | St Dev | 0.888   |

4. How long do you plan to spend visiting Estes Park/Rocky Mountain National Park?

|                    | Count | Percent |
|--------------------|-------|---------|
| Overnight-visitors | 297   | 64.1    |
| Day-visitor        | 166   | 35.9    |
|                    | N=    | 463     |
|                    | *=    | 27      |

| Breakdown for Overnight-visitors | Count | Percent |
|----------------------------------|-------|---------|
| 1-3 days                         | 147   | 49.5    |
| 4-7 days                         | 116   | 39.0    |
| 8-14 days                        | 21    | 7.1     |
| 15-29 days                       | 5     | 1.7     |
| 30 days or more                  | 8     | 2.7     |
|                                  | N=    | 297     |
|                                  | *=    | 0       |

| Breakdown for Day-visitors | Count | Percent |
|----------------------------|-------|---------|
| 1-3 hours                  | 37    | 22.3    |
| 4-6 hours                  | 77    | 46.4    |
| 7-12 hours                 | 52    | 31.3    |
|                            | N=    | 166     |
|                            | *=    | 0       |

5. Which route did you travel to arrive to the area on this trip?

|        | Count | Percent |
|--------|-------|---------|
| Hwy 36 | 295   | 60.6    |
| Hwy 34 | 143   | 29.4    |
| Hwy 7  | 21    | 4.3     |
| Other  | 28    | 5.7     |
|        | N=    | 487     |
|        | *=    | 3       |

## **Responses for "Other" include:**

- From Grand Lake (12)
- Live here (4)
- Shuttle from airport (2)
- Laramie way
- Highway 14
- From Midwest
- Wife by car, me by delta air
- 72
- From Nederland
- Pennsylvania
- Don't remember
- Devils gulch
- 6. Did you see an electronic message sign while traveling on this trip?

|     | Count | Percent |
|-----|-------|---------|
| Yes | 202   | 41.8    |
| No  | 281   | 58.2    |
|     | N=    | 483     |
|     | *=    | 7       |

|                | Loca              | tion 1  | Locat      | tion 2     | Location 3        |         |  |
|----------------|-------------------|---------|------------|------------|-------------------|---------|--|
|                | (near the Town of |         | (on the de | scent into | (Right before the |         |  |
|                | Lye               | ons)    | Estes      | Park)      | turn for the      |         |  |
|                |                   |         |            | Fairgr     | ounds             |         |  |
|                |                   |         |            | Park-an    | ld-Ride)          |         |  |
|                | Count             | Percent | Count      | Percent    | Count             | Percent |  |
| Yes            | 120               | 60.0    | 111        | 55.5       | 78                | 39.0    |  |
| No             | 60                | 30.0    | 68         | 34.0       | 101               | 50.5    |  |
| Don't remember | 20                | 10.0    | 21         | 10.5       | 21                | 10.5    |  |
|                | N=                | 200     | N=         | 200        | N=                | 200     |  |
|                | *=                | 2       | *=         | 2          | *=                | 2       |  |

# a. At which location(s) did you see an electronic message sign?

b. For each location where you saw an electronic message sign, how strongly do you agree or disagree with the following statements about the placement of the signs?

|                | The sign at       |         | The s    | ign at            | The sign at |                   |  |
|----------------|-------------------|---------|----------|-------------------|-------------|-------------------|--|
|                | Location 1 was in |         | Location | Location 2 was in |             | Location 3 was in |  |
|                | a good            | d spot. | a goo    | d spot.           | a good      | d spot.           |  |
|                | Count             | Percent | Count    | Percent           | Count       | Percent           |  |
| Strongly agree | 64                | 48.5    | 66       | 55.5              | 44          | 49.4              |  |
| Somewhat       | 43                | 32.6    | 36       | 30.3              | 30          | 33.7              |  |
| agree          |                   |         |          |                   |             |                   |  |
| Neither        | 22                | 16.7    | 15       | 12.6              | 15          | 16.9              |  |
| Somewhat       | 2                 | 1.5     | 2        | 1.7               | 0           | 0.0               |  |
| disagree       |                   |         |          |                   |             |                   |  |
| Strongly       | 1                 | 0.8     | 0        | 0.0               | 0           | 0.0               |  |
| disagree       |                   |         |          |                   |             |                   |  |
|                | N=                | 132     | N=       | 119               | N=          | 89                |  |
|                | *_                | 8       | *_       | 13                | *_          | 10                |  |
|                | Mean              | 4.27    | Mean     | 4.39              | Mean        | 4.33              |  |
|                | St Dev            | 0.846   | St Dev   | 0.773             | St Dev      | 0.750             |  |
|                |                   |         |          |                   |             |                   |  |

c. Did at least one of the electronic message signs display a message prompting you to tune to the highway advisory radio, AM 1630?

|     | Count | Percent |
|-----|-------|---------|
| Yes | 129   | 67.9    |
| No  | 61    | 32.1    |
|     | N=    | 190     |
|     | *=    | 12      |

7. Did you tune to AM 1630 during this trip?

|     | Count | Percent |
|-----|-------|---------|
| Yes | 34    | 7.0     |
| No  | 451   | 93.0    |
|     | N=    | 485     |
|     | *=    | 5       |

a. How strongly do you agree or disagree with the following statements about how your travel plans were influenced based on the information provided on AM 1630?

|                   | The information<br>influenced<br>me to use<br>the Park-and-Ride |         | Influence<br>visit co<br>attraction<br>the | ed me to<br>ertain<br>Is later in<br>day | The information<br>had no<br>effect on my trip |         |
|-------------------|---|---------|--|--|--|---------|
|                   | Count   | Percent | Count                                      | Percent                                  | Count  | Percent |
| Strongly agree    | 10  | 33.3    | 4  | 14.8                                     | 4  | 16.0    |
| Somewhat agree    | 7   | 23.3    | 6  | 22.2                                     | 4  | 16.0    |
| Neither           | 4   | 13.3    | 11   | 40.7                                     | 8  | 32.0    |
| Somewhat disagree | 6   | 20.0    | 2  | 7.4                                      | 2  | 8.0     |
| Strongly disagree | 3   | 10.0    | 4  | 14.8                                     | 7  | 28.0    |
|                   | N=  | 30      | N=   | 27                                       | N=   | 25      |
|                   | *=  | 4       | *=   | 7  | *=   | 9       |
|                   | Mean  | 3.50    | Mean                                       | 3.15                                     | Mean   | 2.84    |
|                   | St Dev  | 1.41    | St Dev                                     | 1.23                                     | St Dev   | 1.43    |

|                   | The information was |         | The information |         | I was able to get  |         |
|-------------------|---------------------|---------|-----------------|---------|--------------------|---------|
|                   | accurate            |         | saved me time   |         | around easier with |         |
|                   |                     |         |                 |         | the information    |         |
|                   | Count               | Percent | Count           | Percent | Count              | Percent |
| Strongly agree    | 14                  | 48.3    | 4               | 14.8    | 7                  | 25.0    |
| Somewhat agree    | 11                  | 37.9    | 8               | 29.6    | 11                 | 39.3    |
| Neither           | 4                   | 13.8    | 14              | 51.9    | 9                  | 32.1    |
| Somewhat disagree | 0                   | 0.0     | 1               | 3.7     | 1                  | 3.6     |
| Strongly disagree | 0                   | 0.0     | 0               | 0.0     | 0                  | 0.0     |
|                   | N=                  | 29      | N=              | 27      | N=                 | 28      |
|                   | *=                  | 5       | *=              | 7       | *=                 | 6       |
|                   | Mean                | 4.34    | Mean            | 3.56    | Mean               | 3.86    |
|                   | St Dev              | 0.721   | St Dev          | 0.801   | St Dev             | 0.848   |
|                   |                     |         |                 |         |                    |         |

b. How strongly do you agree or disagree with the following statements about AM 1630?

### c. Continued....

|                   | l woul<br>the info<br>aga | d use<br>rmation<br>ain | The information<br>was useful |         | The information<br>helped me avoid<br>traffic congestion |         | l needed more<br>information |         |
|-------------------|---------------------------|-------------------------|-------------------------------|---------|--|---------|------------------------------|---------|
|                   | Count                     | Percent                 | Count                         | Percent | Count  | Percent | Count                        | Percent |
| Strongly agree    | 13                        | 46.4                    | 11                            | 39.3    | 4  | 14.8    | 9                            | 42.9    |
| Somewhat agree    | 10                        | 35.7                    | 10                            | 35.7    | 8  | 29.6    | 2                            | 9.5     |
| Neither           | 4                         | 14.3                    | 4                             | 14.3    | 13   | 48.1    | 7                            | 33.3    |
| Somewhat disagree | 1                         | 3.6                     | 1                             | 3.6     | 2  | 7.4     | 2                            | 9.5     |
| Strongly disagree | 0                         | 0.0                     | 2                             | 7.1     | 0  | 0.0     | 1                            | 4.8     |
|                   | N=                        | 28                      | N=                            | 28      | N=   | 27      | N=                           | 21      |
|                   | *=                        | 6                       | *=                            | 6       | *=   | 7       | *=                           | 13      |
|                   | Mean                      | 4.25                    | Mean                          | 3.96    | Mean   | 3.52    | Mean                         | 3.76    |
|                   | St Dev                    | .844                    | St Dev                        | 1.17    | St Dev   | .849    | St Dev                       | 1.26    |

## **Responses for "I needed more information" include:**

- Once on community drive the signs are small, absent at 1st stop sign, or confusing
- Station was very static
- Couldn't hear
- Too static
- No signal

8. Have you used a shuttle to travel around Estes Park/Rocky Mountain National Park prior to this visit?

|     | Count | Percent |
|-----|-------|---------|
| Yes | 113   | 23.5    |
| No  | 368   | 76.5    |
|     | N=    | 481     |
|     | *=    | 9       |

9. Which shuttle route(s), if any, have you used or do you plan to use while visiting Estes Park/Rocky Mountain National Park during this trip?

|                          | Have used |         | Plan t | o use   |
|--------------------------|-----------|---------|--------|---------|
|                          | Count     | Percent | Count  | Percent |
| The Hiker shuttle        | 62        | 12.8    | 85     | 17.5    |
| The Bear Lake shuttle    | 100       | 20.6    | 77     | 15.9    |
| The Moraine Park shuttle | 38        | 7.8     | 37     | 7.6     |
| The Silver Route shuttle | 11        | 2.3     | 23     | 4.7     |
| The Red Route shuttle    | 34        | 7.0     | 36     | 7.4     |
| The Blue Route shuttle   | 29        | 6.0     | 32     | 6.6     |
| The Brown Route shuttle  | 30        | 6.2     | 27     | 5.6     |
|                          | N=        | 485     | N=     | 485     |
|                          | *_        | 5       | *_     | 5       |

10. How did you learn about the shuttle(s)?

|   | Count | Percent |
|---|-------|---------|
| From visitor center staff                           | 103   | 20.7    |
| Electronic message sign                             | 85    | 19.9    |
| Previous visits                                     | 73    | 17.1    |
| Family or friends                                   | 54    | 12.6    |
| The Rocky Mtn Nat'l Park website                    | 43    | 10.1    |
| From hotel/lodge/campsite staff                     | 35    | 8.2     |
| Highway advisory radio                              | 17    | 4.0     |
| The Town of Estes Park website                      | 16    | 3.7     |
| A newspaper article                                 | 15    | 3.5     |
| Through my employment with a business in Estes Park | 6     | 1.4     |
| Through my employment with Rocky Mtn Nat'l Park     | 4     | 0.9     |
| Other   | 133   | 31.1    |
|   | N=    | 427     |
|   | *=    | 63      |

### **Responses for "Other" include:**

- Did not know about the shuttles (41)
- Saw the shuttles driving (24)
- From the survey (15)
- Signage (9)
- From living here (4)
- YMCA (4)
- Travel book (3)
- Employment (2)
- Visitor Center (2)
- Park Newspaper (2)
- Trip Advisor (2)
- Internet (2)
- Park entrance station (2)
- Mandatory during repairs no choice
- Flyer in hotel lobby
- VIP @ ROMO
- Lyon gift shop lady
- Hotel in Loveland (La Quinta Inn)

11. The following are possible reasons why you may have decided NOT to use the Fairgrounds Silver Route shuttle. Please indicate how strongly you agree or disagree with the following settlements.

|                   | I was not<br>the sh | aware of<br>uttle | The shuttle wasn't<br>running when I<br>arrived |         | I had trouble finding the shuttle schedule |         | The shuttle<br>schedule is<br>confusing |         |
|-------------------|---------------------|-------------------|---|---------|--|---------|---|---------|
|                   | Count               | Percent           | Count   | Percent | Count                                      | Percent | Count                                   | Percent |
| Strongly agree    | 17                  | 56.9              | 5   | 3.4     | 5  | 3.4     | 3                                       | 2.1     |
| Somewhat agree    | 42                  | 13.8              | 5   | 3.4     | 9  | 6.2     | 10                                      | 6.9     |
| Neither           | 42                  | 13.8              | 90  | 61.2    | 85   | 58.2    | 85                                      | 59.0    |
| Somewhat disagree | 12                  | 3.9               | 8   | 5.4     | 11   | 7.5     | 11                                      | 7.6     |
| Strongly disagree | 35                  | 11.5              | 39  | 26.5    | 36   | 24.7    | 35                                      | 24.3    |
|                   | N=                  | 304               | N=  | 147     | N=   | 146     | N=                                      | 144     |
|                   | *=                  | 186               | *=  | 343     | *=   | 344     | *=                                      | 346     |
|                   | Mean                | 4.00              | Mean  | 2.52    | Mean                                       | 2.56    | Mean                                    | 2.55    |
|                   | St Dev              | 1.38              | St Dev  | 1.03    | St Dev                                     | 1.04    | St Dev                                  | 1.00    |

|                   | Shuttle doesn't Shuttl<br>have enough room run fr |         | Shuttle<br>run fre | doesn't<br>quently | Getting on/off the<br>shuttle is challengin |         |
|-------------------|---|---------|--------------------|--------------------|---|---------|
|                   | for g   | gear    | eno                | enough             |   |         |
|                   | Count   | Percent | Count              | Percent            | Count                                       | Percent |
| Strongly agree    | 3   | 2.1     | 5                  | 3.4                | 1   | 0.7     |
| Somewhat agree    | 7   | 4.9     | 12                 | 8.1                | 8   | 5.6     |
| Neither           | 84  | 59.2    | 91                 | 61.5               | 73  | 50.7    |
| Somewhat disagree | 12  | 8.5     | 11                 | 7.4                | 14  | 9.7     |
| Strongly disagree | 36  | 25.4    | 29                 | 19.6               | 48  | 33.3    |
|                   | N=  | 142     | N=                 | 148                | N=  | 144     |
|                   | *=  | 348     | *=                 | 342                | *=  | 346     |
|                   | Mean  | 2.50    | Mean               | 2.68               | Mean  | 2.31    |
|                   | St Dev  | .995    | St Dev             | .990               | St Dev                                      | 1.02    |

|                   | I had to switch<br>shuttles too many<br>times |         | Seems difficult to<br>travel with<br>children |         | 0      | ther    |
|-------------------|---|---------|---|---------|--------|---------|
|                   | Count   | Percent | Count   | Percent | Count  | Percent |
| Strongly agree    | 5   | 3.4     | 3   | 2.1     | 76     | 55.1    |
| Somewhat agree    | 10  | 6.8     | 8   | 5.7     | 4      | 2.9     |
| Neither           | 84  | 57.5    | 86  | 61.4    | 44     | 31.9    |
| Somewhat disagree | 14  | 9.6     | 11  | 7.9     | 2      | 1.4     |
| Strongly disagree | 33  | 22.6    | 32  | 22.9    | 12     | 8.7     |
|                   | N=  | 146     | N=  | 140     | N=     | 138     |
|                   | *=  | 344     | *=  | 350     | *=     | 352     |
|                   | Mean  | 2.59    | Mean  | 2.56    | Mean   | 3.94    |
|                   | St Dev  | 1.02    | St Dev  | .976    | St Dev | 1.31    |

"Other" reasons for not using the Fairgrounds Silver Route shuttle include:

- Didn't need it (9)
- Prefer to drive (7)
- Didn't understand where shuttle went (7)
- Staying overnight (7)
- Prefer to walk (6)
- Have a car (3)
- Not interested in shuttles (3)
- Traveling with dogs (3)
- Shuttles are not convenient (3)
- Came in from Grand Lake (2)
- First visit (2)
- Planned to bike (2)
- Planned to drive (2)
- I drove around & could not find the lot
- Not interested in any of the locations the silver went to/from
- Fairgrounds not on west side of town
- Came to visitor center anyway & have lunch in Estes Park
- Need better advertising & signage
- Was just going to the Rockies
- Didn't know how to get there based on signs. Thought park-n-ride was for work commute.
- Shuttles can get packed
- We went to bear lake early in the morning and had place in the parking.
- We wanted to stop at the visitor center
- Not our style
- Not going to fairgrounds
- Too many unknown destinations
- Not enough time
- Too many people parked there
- I saw the sign for the fairgrounds but thought it was too far away & decided to come closer to check out in-town parking

|                | Count | Percent |
|----------------|-------|---------|
| USA            | 459   | 95.6    |
| United Kingdom | 4     | 0.8     |
| Canada         | 3     | 0.7     |
| Australia      | 3     | 0.7     |
| China          | 1     | 0.2     |
| Czech Republic | 1     | 0.2     |
| Denmark        | 1     | 0.2     |
| England        | 1     | 0.2     |
| France         | 1     | 0.2     |
| Holland        | 1     | 0.2     |
| India          | 1     | 0.2     |
| Mexico         | 1     | 0.2     |
| Spain          | 1     | 0.2     |
| Slovakia       | 1     | 0.2     |
| Grand Cayman   | 1     | 0.2     |
|                | N=    | 480     |
|                | *=    | 10      |

| 12 What is y | your zin co | nde or countr | v of residence? |  |
|--------------|-------------|---------------|-----------------|--|
|              | your zip cc |               | y of residence: |  |

| Breakdown of U.S. Visitors | Count | Percent |
|----------------------------|-------|---------|
| Other State                | 308   | 68.1    |
| Other Colorado City        | 65    | 14.4    |
| Denver                     | 22    | 4.9     |
| Loveland                   | 18    | 4.0     |
| Fort Collins               | 11    | 2.4     |
| Boulder                    | 10    | 2.2     |
| Estes Park                 | 10    | 2.2     |
| Colorado Springs           | 8     | 1.8     |
|                            | N=    | 452     |
|                            | *=    | 38      |

13. How many people are you traveling with today, including yourself?

|           | Count | Percent |
|-----------|-------|---------|
| 1         | 60    | 12.8    |
| 2         | 163   | 34.8    |
| 3 to 5    | 187   | 40.0    |
| 6 or more | 58    | 12.4    |
|           | N=    | 468     |
|           | *_    | 22      |

|              | Chil  | dren    | Children |         | Adults |         | Seniors |               |  |
|--------------|-------|---------|----------|---------|--------|---------|---------|---------------|--|
|              | (5 or | under)  | (6-      | -17)    | (18    | (18-64) |         | (65 or older) |  |
| Breakdown by | Count | Percent | Count    | Percent | Count  | Percent | Count   | Percent       |  |
| group        |       |         |          |         |        |         |         |               |  |
| Yes          | 51    | 10.9    | 150      | 32.1    | 438    | 93.6    | 59      | 12.6          |  |
| No           | 417   | 89.1    | 318      | 67.9    | 30     | 6.41    | 409     | 87.4          |  |
|              | N=    | 468     | N=       | 468     | N=     | 468     | N=      | 468           |  |
|              | *=    | 0       | *=       | 0       | *_     | 0       | *=      | 0             |  |

## Additional Comments:

- I love Estes & RMNP. I've come here for 50 years.
- We are staying and have our suitcases gear. I wasn't sure what the shuttle was for maybe I should have tuned in. If it is not flexible enough to get us to our hotel & hiking locations, it would not help us.
- Great place.
- Estes Park rocks
- It's beautiful
- Brown shuttle should have longer hours.
- Just stopped at Estes to get groceries and check email before continuing to family cabin.
- Parking is a bit difficult in Estes. I would like to use a shuttle esp to save \$ on gas & just making extra traffic by driving around.
- Local drivers exceeded posted speed limit -- rushed us. Beautiful.
- Had a difficult time to pre-schedule campsites in the Rocky Mt. Park
- Had to time trips ahead of time to avoid the crowds & long lines at bear lake & park & ride between 10:30am & 3:00pm
- Thanks!
- Visitor center great. Staff helpful.
- Yes EP is more like a home town to me than my own home town. Please don't automate it too much.
- Using the highways around downtown E.P. are very useful to avoid driving through the congested old town.

- Took green jeep tour through RMNP too expensive, driver too fast, not enough time to see sites.
- I like you have dog friendly shops & restaurants.
- Well first visit looking in to have lots of fun!!!
- Great to have a shuttle, but very complex.
- Sprague Lake Park & Ride to bear lake great when I've used it.
- Beautiful location will come again and bring other family members.
- I love the dog friendly atmosphere in Estes. Love the library. Great that Estes has a population that has strong, conservative values, i.e. debate over keeping cross on Prospect Mountain.
- Very poor trying to find the new park & ride from rt36. As a volunteer at Bear Lake, I strongly support the development of the shuttle system. The hiker & bear lake shuttle is superb & usually well used! I found the silver shuttle a great idea but signage needs to be large & continuous! I also feel that the initial electric message suggests that one can take the shuttle straight into RMNP & not just the EPVC.
- At beaver meadow entrance designate 1 lane for re-entry w/ receipt to speed up entrance and reduce wait time & traffic back-ups.
- Very nice service
- Good roads
- Great town & nice place to live
- Beautiful area
- Glad to know about the shuttles really helped our large group get around
- Very nice town
- The roads good
- Love the shuttles!
- Beautiful town
- Too many places requiring fee just park
- Love Estes park. Have RV & have been here many times.
- I was surprised at how big Estes Park is. We came to see the Stanley.
- Great system
- Time to downtown Estes Park would be good to add to new shuttle park by fairgrounds
- I would use the shuttle again it is very helpful because we flew in to the area.
- Great fun, trails, & buses.
- Beautiful area. Move signage to downtown area. More info on things to do i.e. stables, etc.
- Beautiful!
- Estes is great! Beautiful!
- Just a beautiful city we who live in COLO are so blessed.
- Went to lily lake and RMNP picnic jammed in Estes 36/34 lily lake was a zoo more shuttles in the south
- Very clean!
- Love Estes!

- We live here and love the convenience of the shuttle to avoid traffic!
- Has been a favorite vacation spot for over 30 years
- I love the Rockies!
- The brown line was very helpful
- Bathroom at visitors center was smelly & dirty
- Glad to be here!
- Estes Park visitor center does not keep info on national forest.
- Wish we could camp/park near railheads. :( but hopefully the shuttle will be great! :)
- You have a wonderful city we love it!!
- Bigger buses to fit more people
- This is awesome!
- Bigger buses!
- Traffic through town is frustrating. Parking can be, but not always, stressful.
- Shuttle great! It's annoying to drive in Estes Park.
- The shuttles are very convenient, but it would be nice if they stopped at aspen glen campground
- The roads are a bit congested but it is expected with the area having so many tourists and great sites to see.
- Blocking off 30 parking spaces on the west side of town hall bldg. Doesn't seem to be "too smart" in the height of the tourist season.
- Shuttle is great. More frequent shuttle services.
- We love Estes & come up frequently.
- !!Parking garage!!
- I like to know where to get details for shuttles. We live in Westminster & only come up for the day. Great place but summer traffic is stressful.
- Beautiful town
- Estes Park public restrooms are very, very clean & well managed! Nice, courteous people cleaning them!
- Radio station signal is very weak need to increase strength
- Have the lodges talk more to the vacationers about the shuttle.
- Always enjoyable & relaxing
- E.P. has been a beautiful place to spend the summer.
- Great visit.
- Could use more parking areas.
- Great
- We enjoy coming here.
- I would like to see it open year round at least part of it.
- We love Colorado!
- It is a good idea having shuttles.
- All intersections need to go back to a four way stop. This will be safer for crossing & for traffic.
- I like this state.

- Traffic on main drag through town sometimes very congested, but i realize it's summertime.
- Just arrived, did a mile of river walk. Enjoyed shops. Helped economy. Spent \$20.00 so far. Saw elk grazing. Will be hiking, shopping. Faux camping at KOA.
- We have had a great trip. Thanks!
- Haven't traveled RMP yet.
- The shuttles work well
- Mobile service coverage is poor
- First time here. Beautiful scenery.
- Just driving thru.
- Excellent experience
- Best of luck in your research!
- Beautiful park!
- Just got here sorry I'm not more help
- Just arrived very beautiful!
- If you want regional senior dollars you might offer special room rate deals during your slow times.
- Can we take some of your temperatures and bring them back to St. Louis in the summer!
- Beautiful!
- Shuttle at Bear Lake too crowded. We love visiting Estes Park and appreciate your beautiful town.
- Colorado is a beautiful state, though the urban sprawl is distracting
- Such a great place don't care for the crowded areas, but know that can't be helped.
- Couldn't see long enough (sign at location 3)
- Not enough parking
- The fact that there is a shuttle was one of the deciding factors in our visit.
- It's been super easy to get around! Thanks.
- I would love to see more bike lanes through downtown.
- Our experience was pleasant. Shuttle signs could be bigger. :)
- We are here for a family reunion & have just arrived for this visit. Always enjoy visits to EP.
- Great shuttle! Bike rack please! Ride-in shuttle-out!
- Great town. Will be back. Love it!
- Crowds
- Free shuttle signs need to say when the shuttle service starts. 10:00am is a little late but that needs to be on the sign.
- The town is beautiful and i know you are doing the best thing for Estes Park! Thank you.
- Traffic in town is awful. It would be nice to have bypass options.
- Convoluted traffic downtown, but not too bad. Pedestrians make people turning left slow down the people (in cars) behind them.
- Free shuttle should start earlier. Make the park car free.

- Beautiful scenery (smiley face). Signage along roadway can be confusing at times.
- Excellent system
- Beautiful area, we come here every year and can't get enough of it.
- You have a great system and good drivers. Need more crosswalks across Big Thompson from visitor center.
- Love Estes Park!
- My traveling experience has been wonderful. Not hectic very relaxing
- Love the shuttle brown route
- Great place.
- Greatly appreciate the shuttles. Love the river walk & underground passageway.
- Beautiful
- Very beautiful hike.
- By pass ground downtown to keep traffic down
- I'd use shuttles if placed well and had regular times of 15 minutes.
- Shuttles are good need more
- Always have a good time but have learned over multiple visits how to navigate the traffic & park & walk.
- I'd be more likely to ride the shuttle if it cost less than driving my own car. If it's the same \$, then I'd more likely take my vehicle for the convenience.
- Radio signal was weak
- Avoid downtown
- Nice visitor center. Love river walk. Need more dog friendly shops :)
- Love this area
- Overall we found the shuttle service really good and a really nice surprise.
- People drive terrible through the canyon.
- It's all good for me!
- Need more bike accessible trails around town. A circle around area would be great.
- Very beautiful
- Beautiful view, signs easy to follow
- Traveling with dog. Estes Park is one of our favorite places!
- Love Estes been coming 30+ years. The shuttles are great to get around town traffic especially love the park
- Your signage is incomprehensible. I challenge someone to read the signs only for what they say, not for what you know they mean. You will get lost or be late. There is no sign @ the NPS visitor center that says "Bear Lake shuttle every x minutes." but it doesn't stop at the NPSVC. Busses are hot. Drivers are grumpy old men.
- Have been coming to Estes for over 60 years.
- Love the scenery! God's country!
- The shuttles are great, easy to use and drivers are friendly.
- We use shuttle at RMNP not Estes
- Purpose of sign not clear when driving in town
- Extremely easy highways and streets are well maintained

- Beautiful city need more parking
- Truly love Estes Park & area. Very clean, nice & friendly.
- Sorry i couldn't be of help. I did not see the shuttle.
- Lots of traffic on a summer Saturday

# APPENDIX K: TWO-WAY COMPARISONS FOR THE VISITOR SURVEY

|           | First Tin | ne Visitor | Return | Visitor |
|-----------|-----------|------------|--------|---------|
|           | Count     | Percent    | Count  | Percent |
| Very good | 136       | 68.0       | 169    | 62.4    |
| Good      | 59        | 29.5       | 93     | 34.3    |
| Average   | 3         | 1.5        | 7      | 2.6     |
| Poor      | 2         | 1.0        | 0      | 0.0     |
| Very poor | 0         | 0.0        | 2      | 0.7     |
|           | N=        | 200        | N=     | 271     |
|           | Mean      | 4.65       | Mean   | 4.56    |

Question 1 (First Time Visiting) vs. Question 2 (Overall Experience)

Question 1 (First Time Visiting) vs. Question 3 (Travel Experience)

|           | First Tin | ne Visitor | Return Visitor |         |  |
|-----------|-----------|------------|----------------|---------|--|
|           | Count     | Percent    | Count          | Percent |  |
| Very good | 90        | 45.2       | 97             | 35.7    |  |
| Good      | 87        | 43.7       | 111            | 40.8    |  |
| Average   | 15        | 7.6        | 45             | 16.5    |  |
| Poor      | 7         | 3.5        | 13             | 4.8     |  |
| Very poor | 0         | 0.0        | 6              | 2.2     |  |
|           | N=        | 199        | N=             | 272     |  |
|           | Mean      | 4.31       | Mean           | 4.03    |  |

Question 1 (First Time Visiting) vs. Question 6 (Saw DMS)

|     | First Tin | ne Visitor | Return Visitor |         |  |
|-----|-----------|------------|----------------|---------|--|
|     | Count     | Percent    | Count          | Percent |  |
| Yes | 96        | 45.9       | 104            | 38.2    |  |
| No  | 113       | 54.1       | 168            | 61.8    |  |
|     | N=        | 209        | N=             | 272     |  |

|     | First Tin | ne Visitor | Return Visitor |      |  |
|-----|-----------|------------|----------------|------|--|
|     | Count     | Percent    |                |      |  |
| Yes | 19        | 9.1        | 15             | 5.5  |  |
| No  | 189       | 90.9       | 260            | 94.5 |  |
|     | N=        | 208        | N=             | 275  |  |

Question 1 (First Time Visiting) vs. Question 9 (Shuttle Use)

|                                | First Tir | ne Visitor | Return Visitor |         |  |
|--------------------------------|-----------|------------|----------------|---------|--|
|                                | Count     | Percent    | Count          | Percent |  |
| Used Shuttles This Trip        | 65        | 30.7       | 113            | 41.1    |  |
| Did Not Use Shuttles This Trip | 147       | 69.3       | 162            | 58.9    |  |
|                                | N=        | 212        | N=             | 275     |  |

Question 2 (Overall Experience) vs. Question 9 (Shuttle Use)

|           | Used s | shuttles | Did not use shuttles |         |  |
|-----------|--------|----------|----------------------|---------|--|
|           | Count  | Percent  | Count                | Percent |  |
| Very good | 127    | 71.8     | 178                  | 60.5    |  |
| Good      | 47     | 26.6     | 105                  | 35.7    |  |
| Average   | 2      | 1.1      | 8                    | 2.7     |  |
| Poor      | 0      | 0.0      | 2                    | 0.7     |  |
| Very poor | 1      | 0.5      | 1                    | 0.4     |  |
|           | N=     | 177      | N=                   | 294     |  |
|           | Mean   | 4.69     | Mean                 | 4.55    |  |

|           | Saw           | DMS  | Did not see DMS |         |  |
|-----------|---------------|------|-----------------|---------|--|
|           | Count Percent |      | Count           | Percent |  |
| Very good | 123           | 64.7 | 177             | 64.6    |  |
| Good      | 63            | 33.1 | 88              | 32.1    |  |
| Average   | 2             | 1.1  | 8               | 2.9     |  |
| Poor      | 2             | 1.1  | 0               | 0.0     |  |
| Very poor | 0             | 0.0  | 1               | 0.4     |  |
|           | N=            | 190  | N=              | 274     |  |
|           | Mean          | 4.62 | Mean            | 4.61    |  |

Question 2 (Overall Experience) vs. Question 6 (Saw DMS)

Question 3 (Travel Experience) vs. Question 9 (Shuttle Use)

|           | Used s | shuttles | Did not use shuttles |         |  |
|-----------|--------|----------|----------------------|---------|--|
|           | Count  | Percent  | Count                | Percent |  |
| Very good | 73     | 41.2     | 115                  | 39.1    |  |
| Good      | 70     | 39.5     | 128                  | 43.5    |  |
| Average   | 25     | 14.1     | 34                   | 11.6    |  |
| Poor      | 7      | 4.0      | 13                   | 4.4     |  |
| Very poor | 2      | 1.2      | 4                    | 1.4     |  |
|           | N=     | 177      | N=                   | 294     |  |
|           | Mean   | 4.16     | Mean                 | 4.15    |  |

Question 8 (Previous Shuttle Use) vs. Question 9 (Shuttle Use)

|                                | Used S        | huttles | Did Not Use   |         |  |
|--------------------------------|---------------|---------|---------------|---------|--|
|                                | Prior to Trip |         | Shuttles Pric |         |  |
|                                |               |         | Tr            | -ip     |  |
|                                | Count         | Percent | Count         | Percent |  |
| Used Shuttles This Trip        | 95            | 84.1    | 82            | 22.3    |  |
| Did Not Use Shuttles This Trip | 18            | 15.9    | 286           | 77.7    |  |
|                                | N=            | 113     | N=            | 368     |  |

# **APPENDIX L: MAIL SURVEY DETAILED RESULTS**

This appendix shows the survey question layout and summary statistics for the **mail survey**. To-date, a total of 163 surveys have been returned. The statistical results shown include frequencies, percentages, means and standard deviations. The symbol \* indicates the number not answered per question, which was not a factor in our calculations.

1. During your most recent visit to Estes Park/Rocky Mountain National Park, did you use a visitor shuttle?

|     | Count | Percent |
|-----|-------|---------|
| Yes | 76    | 46.6    |
| No  | 87    | 53.4    |
|     | N=    | 163     |
|     | *=    | 0       |

1a. What was your reason for using a visitor shuttle while visiting Estes Park/Rocky Mountain National Park?

|     | To Visit<br>ROMO |         | To Visit<br>Estes | sit Shops in To Commute<br>tes Park to/from Work |       | Ot      | her   |         |
|-----|------------------|---------|-------------------|--|-------|---------|-------|---------|
|     | Count            | Percent | Count             | Percent  | Count | Percent | Count | Percent |
| Yes | 52               | 68.4    | 28                | 36.8   | 0     | 0.0     | 9     | 11.8    |
| No  | 24               | 31.6    | 48                | 63.2   | 76    | 100     | 67    | 88.2    |
|     | N=               | 76      | N=                | 76   | N=    | 76      | N=    | 76      |
|     | *=               | 0       | *=                | 0  | *=    | 0       | *=    | 0       |

#### Reasons for "Other" Include:

- A friend dropped us off at the Estes shops and then we used the shuttle to get back to Mary's lake
- Get to motel
- Go to church and library
- Go to dinner
- Sightseeing, saw an elk buck
- To do errands, library, grocery, post office
- To return to a trailhead where my car was parked
- Told to use by visitor center
- Too much traffic & not enough parking downtown

1b. How did the price of gasoline influence your decision to use a visitor shuttle?

|                                   | Count | Percent |
|-----------------------------------|-------|---------|
| Completely influenced my decision | 1     | 1.4     |
| Somewhat influenced my decision   | 16    | 21.6    |
| Did not influence my decision     | 57    | 77.0    |
|                                   | N=    | 74      |
|                                   | *=    | 2       |

2. How often do you use each of the following modes of transportation to get around when visiting a national park or other recreation area?

|              | Car   |      | Visitor S | huttle | Bicycle |      |
|--------------|-------|------|-----------|--------|---------|------|
|              | Count | Pct  | Count     | Pct    | Count   | Pct  |
| Always       | 78    | 48.1 | 3         | 2.2    | 0       | 0.0  |
| Often        | 74    | 45.7 | 22        | 16.4   | 5       | 4.0  |
| Occasionally | 5     | 3.1  | 44        | 32.8   | 18      | 14.3 |
| Seldom       | 3     | 1.9  | 33        | 24.6   | 16      | 12.7 |
| Never        | 2     | 1.2  | 32        | 23.9   | 87      | 69.0 |
|              | N=    | 162  | N=        | 134    | N=      | 126  |
|              | *=    | 1    | *=        | 29     | *=      | 37   |

|              | Walking |      | Tour I | Bus  | Other |      |
|--------------|---------|------|--------|------|-------|------|
|              | Count   | Pct  | Count  | Pct  | Count | Pct  |
| Always       | 28      | 19.7 | 0      | 0.0  | 1     | 3.4  |
| Often        | 57      | 40.1 | 2      | 1.6  | 1     | 3.4  |
| Occasionally | 38      | 26.8 | 8      | 6.2  | 2     | 6.9  |
| Seldom       | 8       | 5.6  | 18     | 14.0 | 1     | 3.4  |
| Never        | 11      | 7.7  | 101    | 78.3 | 24    | 82.8 |
|              | N=      | 142  | N=     | 129  | N=    | 29   |
|              | *=      | 21   | *=     | 34   | *=    | -    |

# Responses for "Other" include:

- Hiking
- Horse
- Motorcycle
- Pickup Truck with an RV
- Ski Lift

3. We would like to know if any of the following would influence your future use of visitor shuttles. How would your use of visitor shuttles be influenced by the following?

|                     | Extended Shuttle<br>Hours |      | Increased Shuttle<br>Freq. |      | Interpretive |      |
|---------------------|---------------------------|------|----------------------------|------|--------------|------|
|                     |                           |      |                            |      | Program      |      |
|                     | Count                     | Pct  | Count                      | Pct  | Count        | Pct  |
| Strongly increase   | 23                        | 14.2 | 27                         | 16.7 | 14           | 8.6  |
| Somewhat increase   | 71                        | 43.8 | 77                         | 47.5 | 54           | 33.3 |
| Not at all increase | 39                        | 24.1 | 34                         | 21.0 | 71           | 43.8 |
| Not sure            | 29                        | 17.9 | 24                         | 14.8 | 23           | 14.2 |
|                     | N=                        | 162  | N=                         | 162  | N=           | 162  |
|                     | *=                        | 1    | *=                         | 1    | *=           | 1    |

|                     | Discounts at Shops |      | Add. Space for<br>Gear |      | Info. About Env.<br>Benefits |      |
|---------------------|--------------------|------|------------------------|------|------------------------------|------|
|                     | Count              | Pct  | Count                  | Pct  | Count                        | Pct  |
| Strongly increase   | 26                 | 16.0 | 19                     | 11.7 | 10                           | 6.2  |
| Somewhat increase   | 74                 | 45.7 | 53                     | 32.7 | 47                           | 29.0 |
| Not at all increase | 47                 | 29.0 | 71                     | 43.8 | 88                           | 54.3 |
| Not sure            | 15                 | 9.3  | 19                     | 11.7 | 17                           | 10.5 |
|                     | N=                 | 162  | N=                     | 162  | N=                           | 162  |
|                     | *=                 | 1    | *=                     | 1    | *=                           | 1    |

|                     | Special Rec.<br>Opportunities |      | <b>Rising Gas Prices</b> |      | Real-time Arrival |      |
|---------------------|-------------------------------|------|--------------------------|------|-------------------|------|
|                     | Count                         | Pct  | Count                    | Pct  | Count             | Pct  |
| Strongly increase   | 59                            | 36.4 | 28                       | 17.3 | 34                | 21.2 |
| Somewhat increase   | 70                            | 43.2 | 73                       | 45.1 | 75                | 46.9 |
| Not at all increase | 22                            | 13.6 | 51                       | 31.5 | 41                | 25.6 |
| Not sure            | 11                            | 6.8  | 10                       | 6.2  | 10                | 6.2  |
|                     | N=                            | 162  | N=                       | 162  | N=                | 160  |
|                     | *=                            | 1    | *=                       | 1    | *=                | 3    |

|                     | Direct Parking-to-<br>Park Routes |      | Alt. Fuels Shuttles |      |  |
|---------------------|-----------------------------------|------|---------------------|------|--|
|                     | Count                             | Pct  | Count               | Pct  |  |
| Strongly increase   | 49                                | 30.4 | 23                  | 14.2 |  |
| Somewhat increase   | 73                                | 45.3 | 44                  | 27.2 |  |
| Not at all increase | 26                                | 16.1 | 74                  | 45.7 |  |
| Not sure            | 13                                | 8.1  | 21                  | 13.0 |  |
|                     | N=                                | 161  | N=                  | 162  |  |
|                     | *=                                | 2    | *=                  | 1    |  |
4. We would like to know about your opinion toward using the visitor shuttles on your next trip to Estes Park/Rocky Mountain National Park. Please read each of the following carefully and check the box that best described your opinion.

|                      | For me, taking t<br>next time | he visitor shuttle<br>would be |
|----------------------|-------------------------------|--------------------------------|
|                      | Count                         | Percent                        |
| Extremely pleasant   | 43                            | 26.9                           |
| Somewhat pleasant    | 63                            | 39.4                           |
| Neither              | 46                            | 28.8                           |
| Somewhat unpleasant  | 5                             | 3.1                            |
| Extremely unpleasant | 3                             | 1.9                            |
|                      | N=                            | 160                            |
|                      | *=                            | 3                              |
|                      | Mean                          | 3.86                           |
|                      | St Dev                        | .915                           |

|                    | Most people who are important<br>to me would support my decision<br>to take a shuttle next time |      |  |  |  |  |
|--------------------|---|------|--|--|--|--|
|                    | Count Percent   |      |  |  |  |  |
| Extremely likely   | 62  | 38.5 |  |  |  |  |
| Somewhat likely    | 55  | 34.2 |  |  |  |  |
| Neither            | 28  | 17.4 |  |  |  |  |
| Somewhat unlikely  | <u>    11    6</u><br>5    3  |      |  |  |  |  |
| Extremely unlikely |   |      |  |  |  |  |
|                    | N= 163  |      |  |  |  |  |
|                    | *= 2<br>Mean 3.98   |      |  |  |  |  |
|                    |   |      |  |  |  |  |
|                    | <b>St Dev</b> 1.0   |      |  |  |  |  |

|                | My ability to t<br>shuttle n | My ability to take the visitor<br>shuttle next time is |  |  |  |  |
|----------------|------------------------------|--|--|--|--|--|
|                | Count Percent                |  |  |  |  |  |
| Extremely high | 56                           | 34.8   |  |  |  |  |
| Somewhat high  | 51                           | 31.7   |  |  |  |  |
| Neither        | 29                           | 18.0   |  |  |  |  |
| Somewhat low   | 16                           | 9.9  |  |  |  |  |
| Extremely low  | 9                            | 5.6  |  |  |  |  |
|                | N=                           | 161  |  |  |  |  |
|                | *=                           | 2  |  |  |  |  |
|                | Mean                         | 3.80   |  |  |  |  |
|                | <b>St Dev</b> 1.12           |  |  |  |  |  |

|                | For me, taking t<br>next time | For me, taking the visitor shuttle next time would be |  |  |  |
|----------------|-------------------------------|---|--|--|--|
|                | Count                         | Percent   |  |  |  |
| Extremely good | 53                            | 32.9  |  |  |  |
| Somewhat good  | 64                            | 39.8  |  |  |  |
| Neither        | 34                            | 21.1  |  |  |  |
| Somewhat bad   | 7                             | 4.3   |  |  |  |
| Extremely bad  | 3                             | 1.9   |  |  |  |
|                | N=                            | 161   |  |  |  |
|                | *=                            | 2   |  |  |  |
|                | Mean                          | 3.97  |  |  |  |
|                | St Dev .94                    |   |  |  |  |

|                    | Most people wh<br>to me think I s<br>visitor shutt | Most people who are important<br>to me think I should take the<br>visitor shuttle next time |  |  |
|--------------------|--|---|--|--|
|                    | Count  | Percent   |  |  |
| Extremely likely   | 22   | 13.8  |  |  |
| Somewhat likely    | 43   | 27.0  |  |  |
| Neither            | 67   | 42.1  |  |  |
| Somewhat unlikely  | 18   | 11.3  |  |  |
| Extremely unlikely | 9  | 5.7   |  |  |
|                    | N=   | 159   |  |  |
|                    | *=   | 4   |  |  |
|                    | Mean   | 3.32  |  |  |
|                    | St Dev   | 1.03  |  |  |

|                     | For me, taking t<br>next time | For me, taking the visitor shuttle<br>next time would be |  |  |  |
|---------------------|-------------------------------|--|--|--|--|
|                     | Count                         | Percent  |  |  |  |
| Extremely easy      | 49                            | 30.8   |  |  |  |
| Somewhat easy       | 62                            | 39.0   |  |  |  |
| Neither             | 33                            | 20.8   |  |  |  |
| Somewhat difficult  | 10                            | 6.3  |  |  |  |
| Extremely difficult | 5                             | 3.1  |  |  |  |
|                     | N=                            | 159  |  |  |  |
|                     | *=                            | 4  |  |  |  |
|                     | Mean                          | 3.88   |  |  |  |
|                     | St Dev                        | 1.02   |  |  |  |

|                  | My intention to<br>shuttle no | My intention to take the visitor shuttle next time is |  |  |  |
|------------------|-------------------------------|---|--|--|--|
|                  | Count                         | Percent   |  |  |  |
| Extremely strong | 38                            | 23.9  |  |  |  |
| Somewhat strong  | 58                            | 37.1  |  |  |  |
| Neither          | 27                            | 17.0  |  |  |  |
| Somewhat weak    | 25                            | 15.7  |  |  |  |
| Extremely weak   | 10                            | 6.3   |  |  |  |
|                  | N=                            | 159   |  |  |  |
|                  | *=                            | 4   |  |  |  |
|                  | Mean                          | 3.57  |  |  |  |
|                  | <b>St Dev</b> 1.19            |   |  |  |  |

|                    | For me, taking t<br>next t | For me, taking the visitor shuttle<br>next time is |  |  |  |
|--------------------|----------------------------|--|--|--|--|
|                    | Count                      | Percent  |  |  |  |
| Extremely likely   | 44                         | 28.0   |  |  |  |
| Somewhat likely    | 59                         | 37.6   |  |  |  |
| Neither            | 22                         | 14.0   |  |  |  |
| Somewhat unlikely  | 20                         | 12.7   |  |  |  |
| Extremely unlikely | 12                         | 7.6  |  |  |  |
|                    | N=                         | 157  |  |  |  |
|                    | *=                         | 7  |  |  |  |
|                    | Mean                       | 3.66   |  |  |  |
|                    | St Dev                     | 1.23   |  |  |  |

5. Please rate the following statements between extremely likely and extremely unlikely to express your degree of certainty that use of the visitor shuttles will lead to a given outcome.

|                    | Reduce tension and<br>stress caused by<br>driving |        | Reduc<br>environ<br>impa | e my<br>mental<br>acts | Experience<br>infrequent busses/<br>Long line |      |  |
|--------------------|---|--------|--------------------------|------------------------|---|------|--|
|                    | Count   | Pct    | Count Pct                |                        | Count   | Pct  |  |
| Extremely likely   | 46  | 28.8   | 54                       | 33.8                   | 17  | 11.4 |  |
| Somewhat likely    | 69  | 43.1   | 71                       | 44.4                   | 59  | 39.6 |  |
| Neither            | 22  | 13.8   | 22                       | 13.8                   | 40  | 26.8 |  |
| Somewhat unlikely  | 14  | 14 8.8 |                          | 3.1                    | 22  | 14.8 |  |
| Extremely unlikely | 9   | 5.6    | 8                        | 5.0                    | 11  | 7.4  |  |
|                    | N=  | 160    | N=                       | 160                    | N=  | 149  |  |
|                    | *=  | 3      | *=                       | 3                      | *=  | 14   |  |
|                    | Mean  | 3.81   | Mean                     | 3.99                   | Mean  | 3.33 |  |
|                    | St Dev  | 1.12   | <b>St Dev</b> 1.03       |                        | St Dev  | 1.09 |  |

|                    | Make me feel<br>crowded/toursity |      | Alleviate stress<br>caused by<br>parking |      | Make me feel<br>rushed/short on<br>time |      |
|--------------------|----------------------------------|------|--|------|---|------|
|                    | Count                            | Pct  | Count                                    | Pct  | Count                                   | Pct  |
| Extremely likely   | 23                               | 14.6 | 59                                       | 37.1 | 11                                      | 6.9  |
| Somewhat likely    | 55                               | 35.0 | 62                                       | 39.0 | 45                                      | 28.1 |
| Neither            | 29                               | 18.5 | 20                                       | 12.6 | 56                                      | 35.0 |
| Somewhat unlikely  | 32                               | 20.4 | 17                                       | 10.7 | 33                                      | 20.6 |
| Extremely unlikely | 18                               | 11.5 | 1  | 0.6  | 15                                      | 9.4  |
|                    | N=                               | 157  | N=                                       | 159  | N=                                      | 160  |
|                    | *=                               | 6    | *=                                       | 4    | *=                                      | 3    |
|                    | Mean                             | 3.21 | Mean                                     | 4.01 | Mean                                    | 3.03 |
|                    | St Dev                           | 1.25 | St Dev                                   | .994 | St Dev                                  | 1.07 |

|                    | Save me<br>by not u | e money<br>Ising gas | Enhance my All<br>sightseeing exp<br>ability o |      | Enhance myAllow me toProvide enougsightseeingexplore at myspace for geaabilityown pace |      | enough<br>or gear |      |
|--------------------|---------------------|----------------------|--|------|--|------|-------------------|------|
|                    | Count               | Pct                  | Count  | Pct  | Count  | Pct  | Count             | Pct  |
| Extremely likely   | 48                  | 30.0                 | 36   | 22.5 | 15   | 9.4  | 17                | 10.7 |
| Somewhat likely    | 53                  | 33.1                 | 56   | 35.0 | 47   | 29.4 | 50                | 31.4 |
| Neither            | 36                  | 22.5                 | 35   | 21.9 | 40   | 25.0 | 57                | 35.8 |
| Somewhat unlikely  | 13                  | 8.1                  | 24   | 15.0 | 45   | 28.1 | 27                | 17.0 |
| Extremely unlikely | 10                  | 6.2                  | 9  | 5.6  | 13   | 8.1  | 8                 | 5.0  |
|                    | N=                  | 160                  | N=   | 160  | N=   | 160  | N=                | 159  |
|                    | *=                  | 3                    | *=   | 3    | *=   | 3    | *=                | 4    |
|                    | Mean                | 3.73                 | Mean   | 3.54 | Mean   | 3.04 | Mean              | 3.26 |
|                    | St Dev              | 1.16                 | St Dev   | 1.16 | St Dev   | 1.13 | St Dev            | 1.03 |

6. Please rate the following statements between extremely desirable and extremely undesirable to express your opinion about the outcomes associated with using a shuttle.

|                       | Reduce tension and<br>stress caused by<br>driving |      | Reduce my<br>environmental<br>impacts |      | Experience<br>infrequent busses/<br>long lines |      |
|-----------------------|---|------|---------------------------------------|------|--|------|
|                       | Count   | Pct  | Count                                 | Pct  | Count  | Pct  |
| Extremely desirable   | 61  | 39.1 | 56                                    | 35.9 | 11   | 7.3  |
| Somewhat desirable    | 72  | 46.2 | 76                                    | 48.7 | 25   | 16.6 |
| Neither               | 17  | 10.9 | 20                                    | 12.8 | 34   | 22.5 |
| Somewhat undesirable  | 5   | 3.2  | 2                                     | 1.3  | 33   | 21.9 |
| Extremely undesirable | 1   | .6   | 2                                     | 1.3  | 10   | 31.8 |
|                       | N=  | 156  | N=                                    | 156  | N=   | 151  |
|                       | *=  | 7    | *=                                    | 7    | *=   | 12   |
|                       | <b>Mean</b> 4.20                                  |      | Mean                                  | 4.17 | Mean   | 2.46 |
|                       | St Dev  | .807 | St Dev                                | .794 | St Dev   | 1.29 |

|                       | Make me feel<br>crowded/touristy |      | Alleviate stress<br>caused by<br>parking |      | Make me feel<br>rushed/short on<br>time |      |
|-----------------------|----------------------------------|------|--|------|---|------|
|                       | Count                            | Pct  | Count                                    | Pct  | Count                                   | Pct  |
| Extremely desirable   | 5                                | 3.3  | 63                                       | 41.2 | 11                                      | 7.2  |
| Somewhat desirable    | 17                               | 11.3 | 64                                       | 41.8 | 21                                      | 13.7 |
| Neither               | 36                               | 23.8 | 19                                       | 12.4 | 41                                      | 26.8 |
| Somewhat undesirable  | 58                               | 38.4 | 7  | 4.6  | 46                                      | 30.1 |
| Extremely undesirable | 35                               | 23.2 | 0  | 0.0  | 34                                      | 22.2 |
|                       | N=                               | 151  | N=                                       | 153  | N=                                      | 153  |
|                       | *=                               | 12   | *=                                       | 10   | *=                                      | 10   |
|                       | Mean                             | 2.33 | Mean                                     | 4.20 | Mean                                    | 2.54 |
|                       | St Dev                           | 1.06 | St Dev                                   | .828 | St Dev                                  | 1.19 |

|                       | Save me money<br>by not using gas |      | Enhance my<br>sightseeing<br>ability |      | Allow me to<br>explore at my<br>own pace |      | Provide enough<br>space for gear |      |
|-----------------------|-----------------------------------|------|--------------------------------------|------|--|------|----------------------------------|------|
|                       | Count                             | Pct  | Count                                | Pct  | Count                                    | Pct  | Count                            | Pct  |
| Extremely desirable   | 38                                | 24.7 | 48                                   | 31.2 | 45                                       | 29.2 | 31                               | 20.1 |
| Somewhat desirable    | 74                                | 48.1 | 62                                   | 40.3 | 55                                       | 35.7 | 58                               | 37.7 |
| Neither               | 39                                | 25.3 | 35                                   | 22.7 | 34                                       | 22.1 | 49                               | 31.8 |
| Somewhat undesirable  | 2                                 | 1.3  | 8                                    | 5.2  | 16                                       | 10.4 | 10                               | 6.5  |
| Extremely undesirable | 1                                 | 0.6  | 1                                    | 0.6  | 4  | 2.6  | 6                                | 3.9  |
|                       | N=                                | 154  | N=                                   | 154  | N=                                       | 154  | N=                               | 154  |
|                       | *=                                | 9    | *=                                   | 9    | *=                                       | 9    | *=                               | 9    |
|                       | Mean                              | 3.95 | Mean                                 | 3.96 | Mean                                     | 3.79 | Mean                             | 3.64 |
|                       | St Dev                            | .782 | St Dev                               | .899 | St Dev                                   | 1.06 | St Dev                           | 1.00 |

7. There are many different ways to get travel information when taking a trip. How useful would each of the following ways of getting travel information be to you?

|                    | ROMO   | website | 511    |      | Park<br>brochure/map |      | Lodging host |      |
|--------------------|--------|---------|--------|------|----------------------|------|--------------|------|
|                    | Count  | Pct     | Count  | Pct  | Count                | Pct  | Count        | Pct  |
| Very useful        | 109    | 68.6    | 7      | 4.5  | 98                   | 60.9 | 25           | 15.7 |
| Somewhat useful    | 41     | 25.8    | 32     | 20.5 | 59                   | 36.6 | 67           | 42.1 |
| Neither            | 3      | 1.9     | 61     | 39.1 | 2                    | 1.2  | 43           | 27.0 |
| Somewhat un-useful | 4      | 2.5     | 25     | 16.0 | 1                    | 0.6  | 9            | 5.7  |
| Not at all useful  | 2      | 1.3     | 31     | 19.9 | 1                    | 0.6  | 15           | 9.4  |
|                    | N=     | 159     | N=     | 156  | N=                   | 161  | N=           | 159  |
|                    | *=     | 4       | *=     | 7    | *=                   | 2    | *=           | 4    |
|                    | Mean   | 4.58    | Mean   | 2.74 | Mean                 | 4.57 | Mean         | 3.49 |
|                    | St Dev | .766    | St Dev | 1.13 | St Dev               | .620 | St Dev       | 1.12 |

|                    | Park newspaper |      | Travel/tour<br>book |      | Chamber of<br>Commerce |      |
|--------------------|----------------|------|---------------------|------|------------------------|------|
|                    | Count          | Pct  | Count               | Pct  | Count                  | Pct  |
| Very useful        | 36             | 22.4 | 51                  | 32.3 | 36                     | 22.6 |
| Somewhat useful    | 79             | 49.1 | 70                  | 44.3 | 68                     | 42.8 |
| Neither            | 28             | 17.4 | 24                  | 15.2 | 36                     | 22.6 |
| Somewhat un-useful | 7              | 4.3  | 6                   | 3.8  | 10                     | 6.3  |
| Not at all useful  | 11             | 6.8  | 7                   | 4.4  | 9                      | 5.7  |
|                    | N=             | 161  | N=                  | 158  | N=                     | 159  |
|                    | *=             | 2    | *=                  | 5    | *=                     | 4    |
|                    | Mean           | 3.76 | Mean                | 3.96 | Mean                   | 3.70 |
|                    | St Dev         | 1.07 | St Dev              | 1.02 | St Dev                 | 1.06 |

|                    | Text Updates |      | Smartphone<br>Apps |      | Online |      |
|--------------------|--------------|------|--------------------|------|--------|------|
|                    | Count        | Pct  | Count              | Pct  | Count  | Pct  |
| Very useful        | 8            | 5.1  | 25                 | 15.7 | 97     | 61.0 |
| Somewhat useful    | 34           | 21.5 | 37                 | 23.3 | 48     | 30.2 |
| Neither            | 64           | 40.5 | 53                 | 33.3 | 9      | 5.7  |
| Somewhat un-useful | 15           | 9.5  | 9                  | 5.7  | 1      | 0.6  |
| Not at all useful  | 37           | 23.4 | 35                 | 22.0 | 4      | 2.5  |
|                    | N=           | 158  | N=                 | 159  | N=     | 159  |
|                    | *=           | 5    | *=                 | 4    | *=     | 4    |
|                    | Mean         | 2.75 | Mean               | 3.05 | Mean   | 4.47 |
|                    | St Dev       | 1.18 | St Dev             | 1.34 | St Dev | .840 |

|                    | HAR    |      | Family or<br>friends |      | Other visitors |      |
|--------------------|--------|------|----------------------|------|----------------|------|
|                    | Count  | Pct  | Count                | Pct  | Count          | Pct  |
| Very useful        | 7      | 4.4  | 42                   | 26.2 | 28             | 17.8 |
| Somewhat useful    | 64     | 40.5 | 78                   | 48.8 | 79             | 50.3 |
| Neither            | 38     | 24.1 | 32                   | 20.0 | 36             | 22.9 |
| Somewhat un-useful | 21     | 13.3 | 4                    | 2.5  | 9              | 5.7  |
| Not at all useful  | 28     | 17.7 | 4                    | 2.5  | 5              | 3.2  |
|                    | N=     | 158  | N=                   | 160  | N=             | 157  |
|                    | *=     | 5    | *=                   | 3    | *=             | 6    |
|                    | Mean   | 3.01 | Mean                 | 3.94 | Mean           | 3.74 |
|                    | St Dev | 1.20 | St Dev               | .888 | St Dev         | .928 |

8. When planning for your most recent visit to Estes Park/Rocky Mountain National Park, which mode(s) of transportation did you plan to use?

|                 | Planne | ed to use |
|-----------------|--------|-----------|
|                 | Count  | Percent   |
| Car             | 154    | 94.5      |
| Visitor shuttle | 37     | 22.7      |
| Bicycle         | 6      | 3.7       |
| Walking         | 91     | 55.8      |
| Group tour bus  | 1      | 0.6       |
| Other           | 8      | 4.5       |
|                 | N=     | 163       |
|                 | *=     | 0         |

## **Responses for "Other" include:**

- Backpacking
- Family rental
- Hikers Shuttle
- Horse
- Horseback
- Motor home
- Motorcycle
- Pickup truck

9. Which mode(s) of transportation did you actually use on your most recent visit to Estes Park/Rocky Mountain National Park?

|                 | Actually used |         |  |
|-----------------|---------------|---------|--|
|                 | Count         | Percent |  |
| Car             | 148           | 90.8    |  |
| Visitor shuttle | 71            | 43.6    |  |
| Bicycle         | 1             | 0.6     |  |
| Walking         | 91            | 55.8    |  |
| Group tour bus  | 1             | 0.6     |  |
| Other           | 8             | 4.9     |  |
|                 | N=            | 163     |  |
|                 | *=            | 0       |  |

## Responses for "Other" include:

- Drove motor home to campsite
- Family rental
- Hikers Shuttle
- Horse
- Horseback
- Plane
- Motorcycle
- Pickup truck

a. If you actually used a mode of transportation different from what you planned to use, please explain why.

|     | Used a M | Used a Different<br>Mode |  |  |  |
|-----|----------|--------------------------|--|--|--|
|     | Count    | Percent                  |  |  |  |
| Yes | 38       | 23.3                     |  |  |  |
| No  | 125      | 76.1                     |  |  |  |
|     | N=       | 167                      |  |  |  |
|     | *=       | 0                        |  |  |  |

## **Reasons include:**

- Availability of shuttle bus
- Crowded attractions/parking lot full.
- Crowded roads
- Did not know it was available when we made our plans.
- Didn't know about the shuttle before we came
- Didn't know about the visitor shuttle
- Didn't know it was available. Parking was limited.
- Didn't use bikes -> no bike rack on city shuttle! Bike racks please.
- Forgot my bike at home
- Found out we could park at fairgrounds and take shuttle from visitor's center people.
- Helped with fuel costs, also car was not running well due to the elevation.
- I didn't want the hassle of worrying about a rental car responsibility for accidents, added charges in addition to the cost of gas.
- I might try the shuttle if I don't take dog.
- I saw signs & notices for the shuttle
- I saw the electronic sign on 36
- It's the first time we used the shuttle buses loved them!!!
- Lack of parking
- No rental cars available at Denver airport
- Once we got to the visitor center we were told parking availability wasn't good and the shuttle was our best bet
- Parking lot was full & needed to take shuttle in park
- Parking lot was full and wanted to head up the mtn.
- Parking lot was full. It forced us to use the shuttle in RMNP.
- Spent most of the time in Nat'l Forest & Mt. Evans. Have visited Rocky Mtn. Nat'l Park before. Crowded. Worse on weekends. Visited other areas this time, to see new things.
- Unexpected emergency
- Unsure of cost to get in RMNP with annual pass/senior pass for "car load"
- Used shuttle to get to town
- Visitor shuttle convenient and took to trail head.

- We chose to walk/hike vs. Biking
- We decided to try the visitor shuttle because we wouldn't have to drive and would both enjoy the scenery.
- We did not bring a car to Estes Park (stayed at the YMCA) but made friends who took us places in their cars.
- We did not realize there was a shuttle to the park. It was much better to park & take it from visitor's center than to drive to park.
- We didn't realize a shuttle was available until our visit. We were driving a rented camper and the shuttle made getting around very convenient--not having to move the camper from our campsite.
- We saw that shuttles were available and used it
- We used the shuttle in the park because it was the only way to get there (we wouldn't have been able to park otherwise)
- We walked since the weather was beautiful and walking paths were so inviting.
- We were unfamiliar with the area we were short on time wanted the experience of a shuttle and some helpful info
- When going to a trail head-we had to park & shuttle--parking lot at trail head was full-so we did. Not really any choice.
- Wife suggested

10. How often do you use public transportation at home?

|                       | Count | Percent |
|-----------------------|-------|---------|
| Never                 | 72    | 44.2    |
| Hardly ever           | 66    | 40.5    |
| At least once a month | 13    | 8.0     |
| At least once a week  | 5     | 3.1     |
| Almost everyday       | 7     | 4.3     |
|                       | N=    | 163     |
|                       | *=    | 0       |

11. Have you used a visitor shuttle while visiting another park or recreation area?

|     | Count | Percent |
|-----|-------|---------|
| Yes | 59    | 36.6    |
| No  | 102   | 63.4    |
|     | N=    | 161     |
|     | *=    | 2       |

### If yes, specify where:

- Zion National Park (6)
- Yosemite (5)
- Denali National Park (4)
- Disney (4)
- Grand Canyon (3)
- 16th street mall Denver (2)
- Acadia National Park (2)
- Skiing in Aspen (2)
- Theme Parks (2)
- Beaver creek
- Bermuda
- Breckenridge/Frisco keystone
- California
- Olympia
- Florida- Itchetucknee Springs
- Glacier National Park
- Great Smokey Mountains
- Lyndon Johnson birthplace
- Maroon Bells
- Mesa Verde
- Mt. Rushmore area
- New Orleans, San Antonio
- Hot springs
- Ski trips
- Stanley Park, Vancouver, Canada
- Deadwood, SD
- Vail, Steamboat Springs
- Valley Forge, PA
- Yellowstone
- Grand Tetons
- Europe

12. Who were you traveling with on your most recent visit to Estes Park/Rocky Mountain National Park?

|                        | Count | Percent |
|------------------------|-------|---------|
| Alone                  | 9     | 5.5     |
| With friends           | 18    | 11.0    |
| With family            | 106   | 65.0    |
| With family & friends  | 21    | 12.9    |
| As a member of a group | 2     | 1.2     |
| Other                  | 7     | 4.3     |
|                        | N=    | 163     |
|                        | *=    | 0       |

**Responses for "Other" include:** 

- With dog (4)
- Came for a wedding
- Girlfriend
- Husband
- I live here
- Wife

13. How many times have you visited Estes Park/Rocky Mountain National Park before your most recent visit?

|                        | Count | Percent |
|------------------------|-------|---------|
| 1 time                 | 49    | 30.1    |
| 2-3 times              | 24    | 14.7    |
| 4-5 times              | 24    | 14.7    |
| 6 times or more        | 16    | 9.8     |
| This was my first time | 50    | 30.7    |
|                        | N=    | 163     |
|                        | *=    | 0       |

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

|                         | Count | Percent |
|-------------------------|-------|---------|
| Some high school        | 0     | 0.0     |
| High school diploma/GED | 8     | 4.9     |
| Some college            | 41    | 25.3    |
| Bachelor's degree       | 56    | 34.6    |
| Graduate degree         | 57    | 35.2    |
|                         | N=    | 162     |
|                         | *=    | 1       |

15. What type of overnight accommodations did you use during your most recent trip to Estes Park/Rocky Mountain National Park?

|                               | Count | Percent |
|-------------------------------|-------|---------|
| I did not stay overnight      | 47    | 29.0    |
| I am a resident of Estes Park | 6     | 3.7     |
| Hotel/motel                   | 27    | 16.7    |
| Bed & breakfast               | 5     | 3.1     |
| ҮМСА                          | 12    | 7.4     |
| Private campground            | 13    | 8.0     |
| ROMO campground               | 10    | 6.1     |
| With friends/family           | 4     | 2.5     |
| Other                         | 38    | 23.5    |
|                               | N=    | 162     |
|                               | *=    | 1       |

## **Responses for "Other" include:**

- Cabin (7)
- Condo (5)
- Hotel in Boulder (4)
- Rented a house (4)
- Vacation home (3)
- Live close enough to go home (2)
- Hotel/motel in Denver (2)
- Cottage
- Drove to campsite outside RMNP
- Elk Meadow RV resort park
- Hostel
- I was with a host home for 6 weeks for a rotation at the hospital
- Mary's Lake lodge
- Motel 30+ miles away
- Motel in Loveland

- National Forest campgrounds
- Back country camping

#### 16. What is your gender?

|        | Count | Percent |
|--------|-------|---------|
| Female | 80    | 49.7    |
| Male   | 81    | 50.3    |
|        | N=    | 161     |
|        | *=    | 2       |

#### 17. What is your age?

Range: 18-85 Mean: 48.3

|       | Count | Percent |
|-------|-------|---------|
| 18-24 | 13    | 8.1     |
| 25-39 | 34    | 21.3    |
| 40-64 | 96    | 60.0    |
| 64+   | 17    | 10.6    |
|       | N=    | 160     |
|       | *=    | 3       |

18. Is there anything you would like to share related to your travel experience?

- Generally speaking, we usually take the trip all the way across from Denver to RMNP and across trail ridge through Grand Lake and home. We usually make it a day excursion. If we stop in Estes we may do some shopping. During peak tourist season a free parking lot on each end of town and a shuttle bus through town is something we would use. A shuttle to the top and back would be something that would be useable too. We always use the shuttle in Vail and as you know it goes east and west with slopes along the way. Parking garage is free and placed centrally. It makes it easy to shop, eat, ski, and more easily enjoy Vail.
- The shuttles are not able to run on time due to traffic. We waited a long time for the shuttle downtown. If we had been more "experienced" we would have walked. Just a thought maybe the downtown area should be closed to traffic except shuttles, emergency vehicles & deliveries.

- Would love to use public transportation shuttle from back of mountain to Estes Park. I found the drive up and down the mountain frightening!
- I feel the lack of parking spaces is the largest reason for using the shuttle. Both in town and within the park. The addition of the Stanley Fairgrounds shuttle is a step in the right direction. However, it should make one stop in town at the town hall before finishing at the visitor center. The shopper shuttle should make more than one stop along Elkhorn.
- I have lived in Loveland, CO. (30 miles east of Estes Park) for 40 years. I visit the town of Estes Park 3-4-5 times a year. The visits usually occur before Memorial Day in May and after Labor Day in Sept. I leave the summer months to the tourists and visitors of Rocky Mtn Nat. Park. Estes Park is a beautiful small town with tremendous scenery and lots of shops for the tourists to spend their money on. Personally, I don't feel Estes Park is a big enough tourist town to warrant having a shuttle service. The shuttle service appears to be inconvenient. If the town fathers would just open up all of the parking spaces around the center of town instead of blocking them off with huge flower pots, there would be adequate space for 95% of the visitors that go there. I was told the reason for blocking off the 30-40 parking spaces on the west side of the municipal bldg. was for vendors to load & unload their goods for some of the shows that appear on some of the weekends in the summer. This almost appears to be "not too smart." Let the vendors load and unload in early morning/late in evening and then they should park their units in a shuttle lot if need be. Let the parking slots for the visitors who come shopping to support them. The way it appeared to me on my last visit is prime parking areas are removed from the visitor 7 days a week, 24 hours a day because of the huge pots. This is crazy. First time visitors may fall for using the shuttle, locals and repeat visitors like myself won't. If Estes Park was 4-5 times larger of a city, maybe a shuttle would be warranted. But for now, fully utilize the parking spaces that are available and that should be adequate. Note: the shop owners should also use the shuttle area for their all day parking. Visitors parking slots turn over 2-3times in an 8hr day. There isn't enough stores there to keep visitors more than 3-4 hours at a time.
- I live about 3 miles south of downtown Estes Park. It is very convenient to park at the fairgrounds and ride the shuttle to the visitor's center. From there I take other buses to RMNP and all around town to do errands, ie shopping, grocery store and post office.
- We visit Estes & Rocky Mtn National Park sometimes 2-3 per week during the summer and fall.

- I always parked at the visitor center then walked in town because traffic was so bad at times. The shuttle wasn't of much use for me as I only went into the park once while there. Sorry it took so long for me to send this back! I moved right after I got it. Thanks for taking time to get feedback on what to do about the traffic problems!
- We've been visiting the national parks every summer as our son is growing up. Car traffic in many of them diminishes the experience greatly...try Yosemite in the early afternoon! More shuttle use will improve the experience.
- The shuttle was very easy and convenient. We were worried about parking and driving on the roads as some of the roads we had been driving on were a bit scary at times. The shuttle provided a great way for us to access the trails. Only one problem--at the end of our hike, we discovered that we had just missed a shuttle and that the next one was not coming for about an hour. Luckily, another visitor offered to drive us back to the visitor's center. It would be great if shuttles especially at the end of the day, were more frequent. Thanks!
- My wife and I are seniors. We do some driving but prefer to take the shuttle because it is less stressful. Waiting can sometimes be inconvenient but is worth it. Most of the drivers were very helpful.
- Shuttles are great!
- After using the shuttle service in Zion National Park, I think that this type of service would work well in Rocky Mountain National - shuttles running every 20 to 30 minutes, stopping long enough just to let people on and off to spend time at locations at their own pace - or to pick up and drop off those spending multiple days in backcountry ending in a different place than where dropped off - like w/ Zion or Maroon Bells (summer season) it should be mandatory to use the shuttle service to reduce noise, congestion, & pollution. As more people visit these parks, it will become necessary to implement these types of systems. Thanks.
- Information on how visitors pay entrance fees for RMNP if using the shuttle would help. For example I have an annual pass and had 5 people in my car. No additional cost. My brother had 4 people in his car and paid \$20 vehicle pass. What would we pay to get into RMNP if the group had been on a shuttle?

- In RMNP I avoid the whole Bear Lake area because it is extremely congested in the summer time.
- This was our 2nd visit in the last year (we came last Labor Day and this year end of July) we love the park and was totally worth the trip from Kansas City, MO. We have family in Denver and don't have to get a hotel and in this hard economic time, it is a very thrifty way to spend our vacation money.
- There are several reasons I may not even use the shuttle. One is I have my dog with me. I did see where the parking lot is this time – with all those stinky horses & horse trailers. I did see a lot of cars parked there today – Saturday.-Aug 20, 2011. There was quite a lot of cars & traffic in Estes today tho I don't live there so it doesn't bother me as much, tho I think if I lived there, would not like all those cars & pollution. I drive to the area called "the otherside" & also today I drove to Glen Haven, CO a small burg outside Estes. For me, I like to be able to drive to where I want to go. Might not even take the shuttle. Estes & Rocky Mt. Park are so spread out that if u want to go to a lot of different areas (well!) Where all will the shuttle take you? Not outside? Rocky Mtn Nat'l Park? They must advertise where all it goes. I do like stopping at the visitor's center & walking from there tho i don't think most people visiting know that u can walk from visitor's center. I usually don't visit shops in downtown Estes & the dog cannot go on shuttle – i drive someplace & leave the dog in the car for an hour or so. If I don't take dog sometime will try shuttle! One thing I think is that many, many visitors to Estes do not know that you can park at visitor's center, & then walk along the river & visit all the joints! & go under the tunnel & avoid the lites & traffic. The other thing is I would love a bus from Lyons, so that I didn't have to drive up the hill in all that traffic & use all that gas & wear/tear on my car. There is parking in Lyons when they have their music fest (right now) hey, they have parking - & a bus back down to Lyons would be great as I hate driving that road after dark. I am afraid of hitting wildlife-elk, deer, etc. Also, of course, if u were just riding a bus, you could feel free to drink in Estes which a lot of people (apparently) do anyway.
- We had a wonderful vacation. Loved our accommodations. Wasn't too hard to get around in city. We didn't love the wait for the shuttle in the park, it was long. But the shuttle itself was really nice--clean--up to date--well driven, easy to get back on at the end of the hike. We were there in late July so I think during one of the busiest times for Estes Park so it's understandable. We would definitely come back for the beauty of the mountains and the amazing weather.
- Use of visitor shuttle seemed complicated. It was easier to take the car.

- We wanted to drive the trail ridge rd...maybe the park could consider a shuttle doing that route!
- It seems like having parking and shuttle stop on the RMNP side of Estes would be better than at fairgrounds. We often stop in town for a meal before entering the park. Also after leaving the park. Is there a shuttle between Estes and Grand Lake?
- If I would have researched on the internet maybe ahead of time, I would have known about the shuttles. This trip was a last minute trip when we visited Denver. We saw the shuttles but did not know what they were for, how long we could stay at each site, if we could go all the places we saw on the map. We enjoyed being in our own vehicle and having access to all our drinks and food. Next time we will probably use the shuttle knowing that they pick up and drop off so often is helpful. It's hard to plan ahead when you are in a group of kids and adults and did not plan anything. Loved the park, will definitely return in the near future! From Texas- not used to using shuttle to get around.
- We loved our day in the park. Next time we will plan ahead to take the shuttle as it seemed there were many destination we love the Estes park area and have visited there several times a year for 20+ years. We hardly ever shop & rarely go downtown. We prefer the outdoors, the RMNP and other sites outside town (like YMCA of Rockies, rafting etc.) We walk a lot and do our own cooking most of the time. (Colorado cottages on high drive is perfect for our "style".) We have used the city library & it is top notch. We especially enjoy Estes in fall & winter. That's the "real" Estes Park. Everyone is so friendly & there are fewer people, crowds etc. We have friends who are lucky enough to live in Estes. We really appreciate the conservative values at Estes (the cross on prospect mtn. Is great!) And the dog park & dog friendly environment in the city. The Christmas lights & the nativity scenes on the mountain sides are a wonderful tribute to our faith & to celebrate the season. See you in Estes before long!
- Designate one lane at beaver meadow entrance for re-entry with receipt to speed up entry and reduce traffic congestion.
- Stayed at the silver spur best western and walked to downtown Estes while the rest of my family went out to RMNP. Used the shuttle to return to the best western from downtown. Loved riding the shuttle. It was clean and the

driver was very courteous. Estes Park was a wonderful vacation destination. We'd love to return someday.

- RMNP private campgrounds are subpar, unappealing. Access to CDT in park is very good. Most all hikers carry version of a smart phone. Make info to them easily accessible. Here's hoping you have some impact.
- Since I travel very frequently to RMNP and only sometimes stay overnight in ٠ Estes Park, my written comments might be more pertinent than answers to survey questions. As a prelude to my comments, I work in the park as a volunteer, and my drive time round trip from Denver is 4 hours. I drive low emissions, high mileage car. I also arrive at my duty station well before the busses begin to run: roughly 6:20, 6:30am. When I drive to the park as a hiker, I will use the internal shuttle when I see that the two upper parking lots are full. Except in winter – when the shuttles do not run – I usually arrive at the bear lake trail head before the first bus would because my hikes are long and I do not want to be caught by a thunder storm at high altitudes. Thus my following comments are not as a visitor, but as a worker at Bear Lake who has to deal with a lot of traffic and a goodly number of frustrated visitors!! My original comments to the surveyor were a result of my frustration with the newly established shuttle route and the absence of signage leading to new parking lot by the fairgrounds. Much of that lack has been corrected, but the sign of the actual lot must be more obvious, bigger! Believe me: I know how easily visitors do not see signs. What still remains, however, is the suggestion that the new shuttle will take visitors directly into the park. If i found myself dropped at the visitor's center to take another shuttle, I would not be happy!! As a visitor, I would be furious to learn that this first shuttle was one of three I needed to arrive at bear lake; i.e. Shuttle from fairgrounds to the visitors center, shuttle from VC to park and ride, and yet another shuttle to bear lake or glacier gorge. Our need for a workable shuttle system is very important since RMNP is a park that is being "loved to death." However, such a system will need clear and visible signage outside the park (you've made a good start there with signs outside Lyons and just before the descent into Estes), clear directions toward the first shuttle, and adequate parking (such as keeping huge horse trailers out of the shuttle's lot). Also, I'm afraid that having to take three shuttles to reach one destination inside the park is both unwieldy and unappealing!!!
- While at the bear lake parking area we saw the super long line for the shuttle which impacted further use of the shuttle. Also, fearing altitude affects (sickness) we wanted to be in control of our arrival and departure of locations & activities and we didn't want to get onto a crowded bus not

feeling well. I don't think all the advertising, environmental concerns, or gas prices would have gotten us to use the shuttle when we didn't feel our best as it was.

- We were staying at Mary's Lake lodge because my niece was having her wedding there. Enjoyed the pool and setting very much. We had flown in from Omaha Nebraska to the Denver airport and took a shuttle to Mary's lake. Preferred that plan to renting a car. We knew that other family members would have cars there. During the time that we spent in Estes Park at the shops and then catching the shuttle, I felt that the shuttle system was very helpful and would use it even more next time now that I see how it works.
- The drivers of each shuttle we have taken have been extremely friendly and accommodating to our needs. As a new resident of Estes Park, we use the shuttle to avoid parking/traffic downtown when we want to go out. We would love for it to run a little longer, maybe 12 am. It's a very safe way to get home if we've had a few cocktails. I would recommend putting a small sign on the buses stating "tips are not necessary but appreciated". I assume with a service like this, tipping is a great way to show appreciation. I see very few (if anybody) leave a tip. It might take having a sign to clear up any confusion around tipping. Thanks for the great service!
- Have been to rocky mtn. several times over life. About 50% camp in park 50% rent house/cabin. Have used both Estes Park bus & Nat'l Park bus in the past. When starting trip this time knew we would spend more time in Nat'l Forest. We did drive the old Fall River road & ridge road back. Thought we would drive western half but weekend crowd size was large, so we visited Mt. Evans instead. Other areas we hiked in Rocky Mtn. Nat'l Park were not serviced by busses. Rest of the time spent seeing new things in Nat'l Forest. We think the City of Estes Park is overlooking the importance of r. & a. Nat'l Forests. Great for hiking & if your vehicle has 4 wheel drive. Estes park visitor center should carry info on national forest. It doesn't at present.
- Traffic was horrible. It is hard to browse shops and enjoy the environment with motorcycles running outside the doors. I feel bad for the staff.
- Beautiful trip--wasn't particularly aware of the shuttle service. Would be willing to look into it for any next trip. Best wishes with your research!
- Town needs more signs directing travelers to downtown area.

- Just thought I would note that my husband and I did not use a shuttle while in Estes.
- I found the shuttle schedule more confusing than I thought it would be.
- Please accept as constructive comment: I believe the cost component should be part of a survey. Any shuttle, present or proposed would need funding and a customer perspective on how it is paid for might be valuable.
- We loved the shuttle buses everything seemed perfect. The drivers were great, the people patient, the explanations clear, the drop off spots perfect. I can't think of any way to better what is already in place. Thank you!
- Loved being able to park outside of town and take shuttle into town.
- Love the maps! A lot of car traffic. Beautiful Park. Took car because we had limited time.
- More busses. More local campsites!
- I enjoyed my trip. I think this questionnaire is too long. Cut it in half and I would put more time into thinking about the responses.
- Estes Park was an escape for my son and I. I plan to go every summer if possible. The "people" of Estes Park were friendly and made the difference.
- Did not know there were shuttles. Estes Park needs to do a better job informing visitors of the shuttle. Also, routes, times, of pickup, and locations.
- Long lines were a problem to me. The park service needs to do an expanded planting of trees in dead tree areas the number of dead & dying trees was unacceptable a real fire hazard. There could have been more access to the big Thompson River.
- The only drawback I found associated with the use of the shuttle service was the inability to stop at infrequently visited sites along the roadside to visit waterfalls, elk herds, etc. Overall the shuttle service was excellent for quick & easy access to the main trailheads but did not offer quite as much freedom as use of a car.

- We parked our car at a location (Sprague Lake) which we later realized the shuttle did not go to. The other parking lots were full and therefore we needed to park there to begin our hike. It would be nice for the shuttle to stop at every parking lot.
- Estes Park is always a great place to visit, great scenery, environment and people.
- I have been pleased with the park shuttle to bear lake and the town shuttle when we have used them in Estes Park and RMNP.
- The addition of the visitor shuttle has enhanced our vacations to Estes Park. In the summer months. (maybe holiday shuttles?) Bicycle racks on shuttles would be great for catching a ride back to the condo at the end of the. Finishing the bike/walking trail along Fall River road to the park would be fantastic.
- I love the idea of increasing the use of public transportation in Estes Park/RMNP. As a resident of the town and avid explorer of the park, I think it would only enhance the experience of both locals and tourists alike. It would certainly decrease the tension between locals and tourists that is brought about by poor and careless driving on the part of tourists and impatient and angry driving on part of the locals. I don't know how feasible it is, but I believe that closing the main road in the center of town to personal vehicles would also help in this regard. I can say that assuming the effort by the town and national park was very carefully and very thoughtfully pursued, I would be willing to give up some of the autonomy my personal vehicle affords in order to support the endeavor to move towards greater use of public transportation.
- When shuttle line got big at closing, on-site volunteer ordered extra bus to reduce number of riders awaiting shuttle excellent idea to meet unexpected need. I truly enjoyed using shuttles at RMNP. Thanks!
- I think the fewer cars in the park the better. Motorcycles, specifically. Harley Davidsons are annoying & destroy the quiet of the experience. Other than using trail ridge to get to other destinations, there is no need for cars to be in the park. Zion Natl Park in Utah vastly improved once cars were banned from much of the park.
- Love the park. Sometimes use shuttle at Bear Lake

- I would like to see the buses run during the spring. It would be nice to see the buses run earlier in the day and go to other places in the park (e.g. Longs Peak). I think it would be nice to have less cars in the park. Make people park in the park & ride and use the buses.
- I appreciated the shuttle very much and found it very pleasant. I used it 3 times (not much), but was very glad to have the service. I also appreciate the special transit service--a different organization but very helpful when I needed to go to the medical center.
- We were told by the surveyor that there was parking near the fairgrounds for shuttle parking but we did not see any signs to that effect. The bus drivers were very friendly. For our second stay at RMNP this summer, we will have a harder time using the shuttles as we will be staying at aspen glen. We have to walk a long ways to get to the Fall River entrance to get to the shuttles. It would be nice to have a special pick up on a paved short cut. We had to wait nearly an hour for the final pick up from the visitor's center back to the shuttle area across from glacier basin campground. It would have been nice to have a sign at the bus stop with times. We could have walked to McDonalds for an ice cream cone, but since we didn't know when the bus was coming we just sat there and waited.
- We only had 3 days to spend in Estes Park, so we used our car to drive up the old Fall River road to the alpine visitor's center. It was a beautiful drive with fantastic overlooks/vistas and was worth the drive. For our day hikes we visited Alberta Falls, Nymph Lake, Dream Lake, and Emerald Lake. We were able to park in the trailhead for our hikes. We really enjoyed our trip to Estes Park and hope to visit again next summer.
- I like the idea of a shuttle, but I had my dog.
- Signage is terrible. Drivers are surly. Please do not start to run tapes or radio during the rides. That would be awful. Busses were hot. Turn on the AC. Busses were not clearly or intuitive & were slow. How about an express directly to bear lake?
- I did not know there was a shuttle service in Estes Park until we arrived at the visitor center. We would have used the shuttle, but the weather was too nice not to walk. Better signage for persons with trailers where to park and ride shuttle the shuttle to downtown.

- Had a great time! Enjoyed the people, beer, and food in addition to the awesome sights and hikes. Sorry for the delayed response!
- The shuttle was not our first choice, but it ended up being a good experience. Although it was very full.
- We loved our day in the park. Next time we will plan ahead to take the shuttle as it seemed there were many destination options.
- Estes needs a parking garage!!
- The main reason we didn't take a visitor shuttle in Estes Park is because until being approached to do this survey, we didn't know about it. Had we known, we may have tried to use it, because driving in Estes Park was kind of a pain. We are pretty active though, and parking a few blocks away and strolling through town was not a big deal. We were in Estes Park august 1-4 approximately. Good luck with your data!
- When asked about the highway sign in Lyons, I had not seen it. The next time I traveled highway 66 west, I did. It said shuttle from fairgrounds. As a visitor passing through Lyons and taking Hwy 36 from Lyons to Estes, I would never had known the shuttle was for Estes Park, Rocky Mt National Park, or some fairgrounds in Lyons, so I wouldn't have to drive my car to Estes Park but could leave my car in Lyons. It confuses me every time I see that sign and my mailing address is Lyons, but I live 1/2 hour above Lyons on hwy 72 and take hwy 7 to get to Estes Park. I have only used the shuttle once in RMNP--I parked at bear lake and hiked down to fern lake. I believe I took the shuttle back up to my car--worked well and hope to utilize it more in the future. Will look at using the shuttle from the fairgrounds to RMNP too.
- Could use more benches to sit in the shade
- For me to use public transportation, it has to be convenient, known, easy to understand routes, and easy to find times of arrival and departures of the shuttle. Otherwise, I want to use my car so I can come and go at my own pace.
- RMNP is fantastic. Love the YMCA. Ed's cantina for pazole!

- Estes park and the surrounding area is beautiful. I think that having a form of public transportation that would transport people to the national park would greatly preserve the environment and beauty of this unique area.
- Dana was an amazing shuttle-driver. I didn't have my own car, so the shuttles were a huge help. I always wanted to go to Loveland, however there were no shuttles (to my knowledge) that transported outside of the park and Estes. I never thought once about environmental benefits of using the shuttles.
- I would like to see the shuttle run at an earlier date and stay running longer. Possibly year round. Have extra trips during the busy season.
- Overall, the shuttle experience was pleasant. The drivers were especially helpful and friendly. The main issue I had was the lack of shuttle service in the hours before 10am. We were staying at Mary's Lake campground and at Mary's Lake hotel, and it was a big disappointment when I realized that the earliest shuttle departs at 10:12 making it impossible to take the trail ridge road shuttle tour which departs from beaver meadows at 10am. If I had known this beforehand, I would have rented a car in Denver rather than rely on shuttle service.
- My husband and I have learned about RMNP shuttles on the park website. We mostly use them in the park for loop hikes (starting point different than end point) and/or when parking lots are full. We would love it if the park service would provide shuttles for more of the one-way hikes for example the Ute trail. We've wanted to do this hike for a long time but would need two cars (&pay entrance fee twice) or hitch hike, which is discouraged. Thanks for your research into this topic.
- We enjoyed our trip. We were going to drive our own car regardless because we were entering from Denver and east and leaving to drive home to Eagle County via west entrance. However, we do believe good tourist shuttles are invaluable and will be needed more and more. Whenever we visit a new area, city, etc anywhere in the world we always take local shuttles and hop on hop off tours etc.
- Would like to see shuttle service to other trailheads in park, not just bear lake area.
- Wish I had more time to explore us national parks. Also need to start exploring state one's.

- There is obviously way too much traffic in Estes. I suggest a clearly marked bypass route to get vehicles just passing through out of the way. Close down the main street for 3-4 blocks, no traffic allowed except shuttle buses. Make the shuttles run every 2-3 min. Give people a really good reason to park & ride. See the 16th street mall in Denver if you want to see a good example of this. Coupons on the shuttle to local attractions sounds like a good idea. Not sure who's going to pay for all this, but if you can keep the visitors to stay longer they will spend more. That might pay for it.
- Nice town. Never saw a shuttle or any information that shuttles existed.
- I think the shuttles are a great asset & help people see the sites easily. It is nice to relax and watch the mountain views--not worrying about driving a large camper vehicle on steep mountain roads. Didn't have to fret about my husband's driving!! Also--the shuttles allowed us to keep our camper set up at campsite.
- Having more than one shuttle, perhaps every 15 minutes would encourage use. Also, a map that wasn't so confusing would be helpful to all! Thanks!
- The park rangers were extremely friendly and very helpful. The visitor shuttle enhanced our experience in Estes Park, and we met some nice folks on the shuttle.
- I'm so sorry I neglected to complete this before. I hope this can still be useful.
   I really enjoyed chatting w/ the Maine student on the bus, and appreciated the bus driver going out of his way to drop be off close to my destination, off the usual route! I had some trouble w/ section ii and hope my answers might be helpful anyway.
- Good idea. Keep it up

## **APPENDIX M: TWO-WAY COMPARISONS FOR THE MAIL SURVEY**

|                       | Used ROMO<br>shuttles |      | Did not use ROMO<br>shuttles |         |
|-----------------------|-----------------------|------|------------------------------|---------|
|                       | Count Percent         |      | Count                        | Percent |
| Never                 | 40                    | 46.0 | 32                           | 42.1    |
| Hardly ever           | 38                    | 43.7 | 28                           | 36.8    |
| At least once a month | 5                     | 5.7  | 8                            | 10.5    |
| At least once a week  | 1                     | 1.2  | 4                            | 5.3     |
| Almost everyday       | 3                     | 3.4  | 4                            | 5.3     |
|                       | N=                    | 87   | N=                           | 76      |

Question 1 (ROMO Shuttle Use) vs. Question 10 (Public Transportation Use at Home)

Question 1 (ROMO Shuttle Use) vs. Question 11 (Experience Using Shuttles at other Recreation Areas)

|  | Used ROMO<br>shuttles |      | Did not u<br>shut | se ROMO<br>ttles |
|--|-----------------------|------|-------------------|------------------|
|  | Count Percent         |      | Count             | Percent          |
| Used shuttles at other recreation areas        | 25                    | 33.3 | 34                | 39.5             |
| Did not use shuttles at other recreation areas | 50                    | 66.6 | 52                | 60.5             |
|  | N=                    | 75   | N=                | 86               |

Question 1 (ROMO Shuttle Use) vs. Question 15 (Accommodations)

|                   | Used ROMO     |      | Did not use ROMO |         |
|-------------------|---------------|------|------------------|---------|
|                   | shuttles      |      | shut             | ttles   |
|                   | Count Percent |      | Count            | Percent |
| Day-visitor       | 15            | 31.9 | 32               | 68.1    |
| Overnight-visitor | 61            | 52.6 | 55               | 47.4    |
|                   | N=            | 76   | N=               | 87      |

# **APPENDIX N: MODE CHOICE ANALYSIS**

## **Quantitative Variables**

| Variable                            | Minimum | Average | Maximum |
|-------------------------------------|---------|---------|---------|
| Beaver Meadows Monthly Entrance     | 89,667  | 109,004 | 123,532 |
| Count                               |         |         |         |
| Beaver Meadows Daily Entrance Count | 1,696   | 3,383   | 4,669   |
| Bear Lake Daily Entrance Count      | 212     | 701     | 1114    |
| Bear Lake Occupancy Count           | 24      | 288     | 406     |
| Daily Precipitation                 | 0       | 0.044   | 0.49    |
| High (°F)                           | 51.1    | 78.9    | 89.7    |
| Low (°F)                            | 30.7    | 47.2    | 61.5    |
| Hiker Ridership                     | 70      | 358     | 787     |

## **Qualitative Variables**

| ١                    | /ariable   | Number of Occurrences |
|----------------------|------------|-----------------------|
|                      | Monday     | 11                    |
|                      | Tuesday    | 11                    |
|                      | Wednesday  | 11                    |
| Day of Week          | Thursday   | 11                    |
|                      | Friday     | 11                    |
|                      | Saturday   | 14                    |
|                      | Sunday     | 14                    |
|                      | June       | 6                     |
| Manth                | July       | 31                    |
| wonth                | August     | 31                    |
|                      | September  | 15                    |
|                      | Holiday    | 6                     |
| Holiday influence    | No Holiday | 77                    |
| Dain                 | Yes        | 28                    |
| Kain                 | No         | 55                    |
| Dein Com Orm         | Yes        | 24                    |
| kain, 6 am – 8 pm    | No         | 59                    |
|                      | Yes        | 21                    |
| Rain, 8 am – 6 pm    | No         | 62                    |
|                      | Yes        | 10                    |
| kain, 8 am – 2:30 pm | No         | 73                    |
|                      | Yes        | 52                    |
| ITS Activation       | No         | 31                    |

