ACADIA NATIONAL PARK ITS FIELD OPERATIONAL TEST

VISITOR SURVEY

February 10, 2003

Prepared for:

U.S. Department of Transportation
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16. Abstract
In 2002, as part of the Acadia National Park Field Operational Test, Intelligent Transportation Systems (ITS) components were deployed to help visitors travel around Mount Desert Island and in Acadia National Park. Using data from surveys of visitors from July 29, 2002 to September 1, 2002, this report describes visit and visitor characteristics and their experiences using the traveler information. Information was collected from visitors (actually tourists and a small number of local residents) using two different survey instruments: an on-site interview and a more extensive mail-back questionnaire. A total of 1,278 questionnaires were mailed to visitors. Visitors returned 928 usable questionnaires for a 74 percent response rate. This survey of visitors to Acadia National Park and Mount Desert Island confirmed findings of previous studies that the experience was overwhelmingly positive for visitors. In assessing the impact that ITS had on visitors, the evaluation revealed that both users and non-users of the technologies had a pleasant experience and were able to enjoy their stay based on their choice of travel. Yet, when looking at the survey data in more detail, a picture clearly emerges that reveals definite benefits to the ITS users and the potential that ITS offers for both visitors, the Park, and the community of Mount Desert Island at large.

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Executive Summary

In 2002, as part of the Acadia National Park Field OperationalTest, Intelligent Transportation Systems (ITS) components were deployed to help visitors travel around Mount Desert Island and in Acadia National Park. Real time travel information was collected and integrated with Island Explorer buses and disseminated to visitors via an automated annunciator that transmitted an audio message and displayed the next bus stop on an electronic sign within the bus. Also, electronic signs displayed real time departure times of the next Island Explorer bus at the Visitor Center and Jordan Pond House bus stops in Acadia National Park and the Village Green in Bar Harbor located outside of the Park. Other traveler information was provided to visitors such as real time parking conditions at two popular destinations in the Park: Sand Beach and the Jordan Pond House. This information was available on the Acadia National Park web page and displayed on signs at the Visitor Center, Blackwoods Campground, and Seawall Campground. Using data from surveys of visitors from July 29, 2002 to September 1, 2002, this report describes visit and visitor characteristics and their experiences using the traveler information. Information was collected from visitors (actually tourists and a small number of local residents) using two different survey instruments: an on-site interview and a more extensive mail-back questionnaire. A total of 1,278 questionnaires were mailed to visitors. Visitors returned 928 usable questionnaires for a 74 percent response rate.

An important goal of the Field Operational Test of ITS at Acadia National Park is to reduce vehicle congestion in the Park. Reduced congestion will have the added benefits of increased mobility of visitors and residents, aesthetic and environmental benefits of fewer vehicles parked on roads, and safety benefits of less traffic and better emergency response. These factors will combine to provide a more positive visitor experience. The visitor survey was designed to obtain specific information on four of the six central evaluation objectives: customer satisfaction, mobility, productivity and economic vitality, and energy and environment. The survey also was designed to collect information that could be used to assess awareness and use of the various ITS components and the performance of those components in providing accurate, understandable, and useable information. Key findings in each evaluation goal area are presented below.

Customer Satisfaction with ITS

Since awareness and use must precede a visitor being able to experience some level of satisfaction with an ITS technology, awareness and use of ITS were explored first. In the on-site interviews it was found the 55% of visitors were aware of one or more of the ITS technologies, but awareness and potential usage were far from uniform across the technologies:

- More than half of the visitors who reported being aware of the ITS technologies and traveler information either reported that they had used the information or planned to use the information during their visit. For example, forty-nine percent of the visitors reported being aware of the electronic signs that displayed the real time departure time of the Island Explorer bus and 28% reported that they had used the information or planned to use the information during their visit.

- A slightly lower percentage of total visitors (40%) reported being aware of the automated annunciator that transmitted an audio message and displayed the next bus stop but 34% reported that they had used the information or planned to use the information during their visit. By contrast the vast majority of visitors contacted on-board the Island Explorer buses who reported being aware of one or more of the ITS technologies and traveler information actually used the information (83% to 94%, depending on bus route).

- Over half of the visitors (55%) reported being aware of information about parking availability at Sand Beach and the Jordan Pond House and 30% reported that they had used the information or planned to use the information during their visit. Such information would have been conveyed through signs at the two Park campgrounds or the Visitor Center.

- Only 8% of visitors reported being aware of the parking availability on the Acadia National Park web page and 5% reported that they had used or planned to use the information during their visit. The status of parking lots being full did not necessarily restrict visitors from gaining access to these attractions. Some visitors may have realized these areas were still accessible by privately owned vehicles and despite knowing the condition of the parking lots did not plan to use the information.

The visitors who used the ITS technologies and traveler information reported in general that the information was accurate, clearly understandable, and easy to use. Visitors found important benefits in using ITS:

- Users of the traveler information involving the real time parking conditions, automated annunciator, and electronic departure signs that displayed the real time departure time of the Island Explorer bus reported the information saved them time and reduced tension and stress related to travel.

- Nearly three out of four users (74%) agreed that the real time parking information made it easier for them to get around despite having lower agreement ratings for the parking information helping to avoid parking problems (66%), traffic congestion (57%), and large crowds (47%). It should be noted that the ITS technologies had limited success in changing the time of day or changing the visitor's mind on what attractions to visit (43% and 38%, respectively).

- A very high proportion of bus users agreed that the real time departure sign of the next bus and the on-board announcements made it easier for them to get around (90% and 84%, respectively).

- One of the biggest problems related to travel, regardless of being an ITS user or ITS non-user, was concern about vehicles parked along main roads and causing unsafe conditions. Thirty-six percent of all visitors reported a "moderate" or "big" problem of vehicles parked along the main roads causing unsafe conditions (24% and 12%, respectively). Too many automobiles outside of the Park as well as inside the Park were the second or third ranked most problems reported by all visitors.

Impact of ITS on Mobility at Acadia

The majority of visitors reported overall a high quality visitor experience regardless of using or not using the traveler information. However, it should be noted that the visitor's travel experience was not rated as high as the overall rating of their visitor experience. Thirty-four percent of visitors encountered traffic congestion using a personal vehicle in Acadia National Park. Forty-two percent of visitors encountered parking problems using a personal vehicle in the Park. Most visitors (68%) reported parking some distance away and walking to their intended

destination. However, thirty-eight percent of the visitors who encountered parking problems reported going to an alternative destination. Thirty-six percent of visitors waited until a parking spot opened near their intended destination. Despite ITS users' perception of benefits from ITS technologies and information, no difference was detected among ITS users and non-users in terms of access to desired destinations and activities. It should be noted that ITS non-users generally reported fewer problems related to travel on Mount Desert Island and in Acadia National Park. In particular, the ITS non-users reported less problems finding parking and had less worry about driving and parking along busy roads. Clearly, the ITS technologies have many benefits to users but may not be sought or utilized by certain visitors if there is no perceived need for the traveler information.

An important goal of the ITS technologies was to enhance the visitor's experience and to divert visitors from using their private vehicles to using the Island Explorer bus. A higher proportion of ITS users of the electronic departure signs and on-board announcements reported it helped them decide to use the Island Explorer bus (80% and 67%, respectively) as compared to ITS users or the real time parking conditions and their report of it helping them decide to use the Island Explorer bus (44 percent). Regardless of these differences, the ITS technologies appear to be contributing to the overall goal of diverting visitors from private vehicles to using the Island Explorer bus. Particularly promising are reports from ITS users that future use of the traveler information would be a pleasant experience and that they would plan to use the information again.

Based upon these findings about customer satisfaction and reports of increased mobility, the implication is that traveler information could potentially be useful to many other visitors who were unaware of the ITS technologies and traveler information as well as those who were aware but decided not the use the information.

Environmental Benefits of ITS at Acadia

An important outcome associated with the ITS technologies and a visitor deciding to use a propane-powered Island Explorer bus are fewer trips being made with their private vehicle and a consequent improvement in air quality. The recognition of too many automobiles impacting air quality ranked relatively high as compared to other problems related to travel on Mount Desert Island and in Acadia National Park. The majority of visitors (50%) regardless of using or not using the traveler information reported more concern with too many automobiles impacting air quality as compared to other issues such as too many RVs in the Park, too many people in the Park, too many tour buses in the Park, ability to fully access desired recreation opportunities in the Park, and ability to access desired attractions outside of the Park. Further investigation is needed in terms of the prevalence of this issue influencing the choice of using the less polluting propane-powered Island Explorer buses. It may be an attractive incentive for visitors and future users of the Island Explorer bus especially with the current level of awareness of autos and air quality. Air quality concerns of health and aesthetics in a pristine setting such as Acadia National Park may persuade visitors that previously did not think about using the Island Explorer bus. In general, from the standpoint of aesthetics, visitors reported no problems seeing the electronic signs that displayed the real time departure time of the Island Explorer bus or too many Island Explorer buses in the Park.

Impact of ITS on the Local Economy

An expected benefit of the ITS technologies is that it will contribute to the productivity and economic vitality in the region. Specifically, the enhanced experience and increased mobility

will contribute to longer visitor stays and attract a new car-less tourist segment. Indeed, a significant difference was detected in the length of stay among visitors based upon whether they reported using one or more of the ITS components and the Island Explorer bus. In particular, the ITS users who used the bus or the bus and parking availability information reported longer stays than the ITS users of parking information and ITS non-users. Fifty-eight percent of the ITS bus users and 50% of ITS users of the bus and parking reported staying 5 or more days. In contrast, less than half of ITS users of parking information and ITS non-users reported staying for more than 4 days (44% and 43%, respectively). Similarly, a significant difference was detected in money spent during their visit with higher amounts reported for the ITS bus users who used the bus or the bus and parking information. Fifty-eight percent of the ITS bus users and 55% of ITS users of the bus and parking reported spending $301 or more during their visit. In contrast, less than half of the ITS users of parking information and ITS non-users reported spending $301 or more during their visit (44% and 46%, respectively). It is noted that on one hand, answers related to length of stay and attraction of a new car-less tourist segment may have reflected to some degree visitor's use of the Island Explorer bus independent of the traveler information. On the other hand, results from this study clearly support to some degree visitor's use of the Island Explorer bus related to the traveler information. For example, more than three quarters for the visitors (80%) who reported using the bus and traveler information also reported the real time bus departure sign helped them decide to use the Island Explorer bus.

Conclusion

This survey of visitors to Acadia National Park and Mount Desert Island confirmed findings of previous studies that the experience was overwhelmingly positive for visitors. In assessing the impact that ITS had on visitors, the evaluation revealed that both users and non-users of the technologies had a pleasant experience and were able to enjoy their stay based on their choice of travel. Yet, when looking at the survey data in more detail, a picture clearly emerges that reveals definite benefits to the ITS users and the potential that ITS offers for both visitors, the Park, and the community of Mount Desert Island at large:

- Users of ITS technologies had definite concerns about the potential problems with travel while visiting Acadia and found the ITS offered solutions that made their visit more enjoyable.

- Non-users of ITS, perhaps more knowledgeable of Acadia, were less worried about travel conditions and apparently had coping strategies for avoiding them.

- ITS makes the already attractive Island Explorer even more attractive to visitors, thereby encouraging greater numbers of people to forego their private vehicles and use transit for traveling around the Island thereby helping to relieve congestion and improving air quality.

- As a group, the ITS users appear to be the most valuable to the local tourism in terms of length of stay and money spent. The business community can build on association between use of ITS, the Island Explorer, and tourism to their advantage.

1.0 INTRODUCTION AND BACKGROUND

Acadia National Park is part of the U.S. National Park System, which has as its dual mission the preservation of natural and cultural resources and providing visitors with a meaningful and pleasant experience. Acadia hosted 2.5 million recreation visits in 2001, making it one of the most-visited National Parks in the peak summer months of July and August[1]. Tourism dominates the regional economy, and the attraction of Acadia National Park is a major contributor to the tourism industry.

The popularity of Acadia National Park and the growth of tourism on Mount Desert Island are not without problems. During the peak tourist season, roadway congestion is the norm, and parking at trailheads and beaches has become increasingly difficult. Lengthy traffic delays and noise and air pollution often detract from the experience visitors have come to enjoy, and they also threaten the Park's natural and cultural resources.

To relieve traffic congestion, Acadia National Park has turned to public transportation as the preferred approach for both protecting the aesthetic and natural resources of parklands and providing a quality visitor experience. With support from public and private funding sources, in 1999 the Island Explorer bus service was launched to provide free transportation during the tourist season on Mount Desert Island. The success of the service in its first season led to expand the service for the 2000 summer.

The U.S. Department of Interior, the parent organization for the National Park Service, and the U.S. Department of Transportation are collaborating on the use of technology, including Intelligent Transportation Systems (ITS), to address transportation problems in National Parks. Acadia was chosen for a Field Operational Test of ITS to assess the effectiveness of ITS in helping to solve those problems. Science Application International Corporation was selected by the U.S. Department of Transportation to work with the National Park Service and local stakeholders on Mount Desert Island to design and deploy the ITS Field Operational Test.

The U.S. Department of Transportation selected Battelle Memorial Institute to conduct an independent evaluation of the Field Operational Test to assess the benefits from the ITS technologies and identify lessons learned from the experience that might be applied to other National Parks. In all, there were seven components of the evaluation. Section 1.1 provides an overview of the overall evaluation strategy while the remainder of the report discusses one component of the independent evaluation, Visitor Surveys, in more detail.

1.1 Overview of the Overall Evaluation Strategy

The Intelligent Transportation Systems deployed at Acadia National Park integrates different components that support the region's needs for transit management, traffic management, and traveler information. The components are interrelated and depicted in Figure 1.1.1. The relationship between the individual system components, the functional requirements, the system elements, and the needs addressed are shown in Table 1.1.1. Further elaboration can be found in the Acadia National Park ITS Field Operational Test: Strategic Plan. Based on the collective feedback of the stakeholders, the overriding impact of the ITS technologies should be to reduce vehicle congestion in Acadia National Park. Reduced congestion will have the added benefits of increased mobility of visitors and residents, aesthetic and environmental benefits of fewer vehicles parked on roads, and safety benefits of less traffic and better emergency response.

[1] National Park Service web page: www2.nature.nps.gov/npstats/parkrpt.cfm

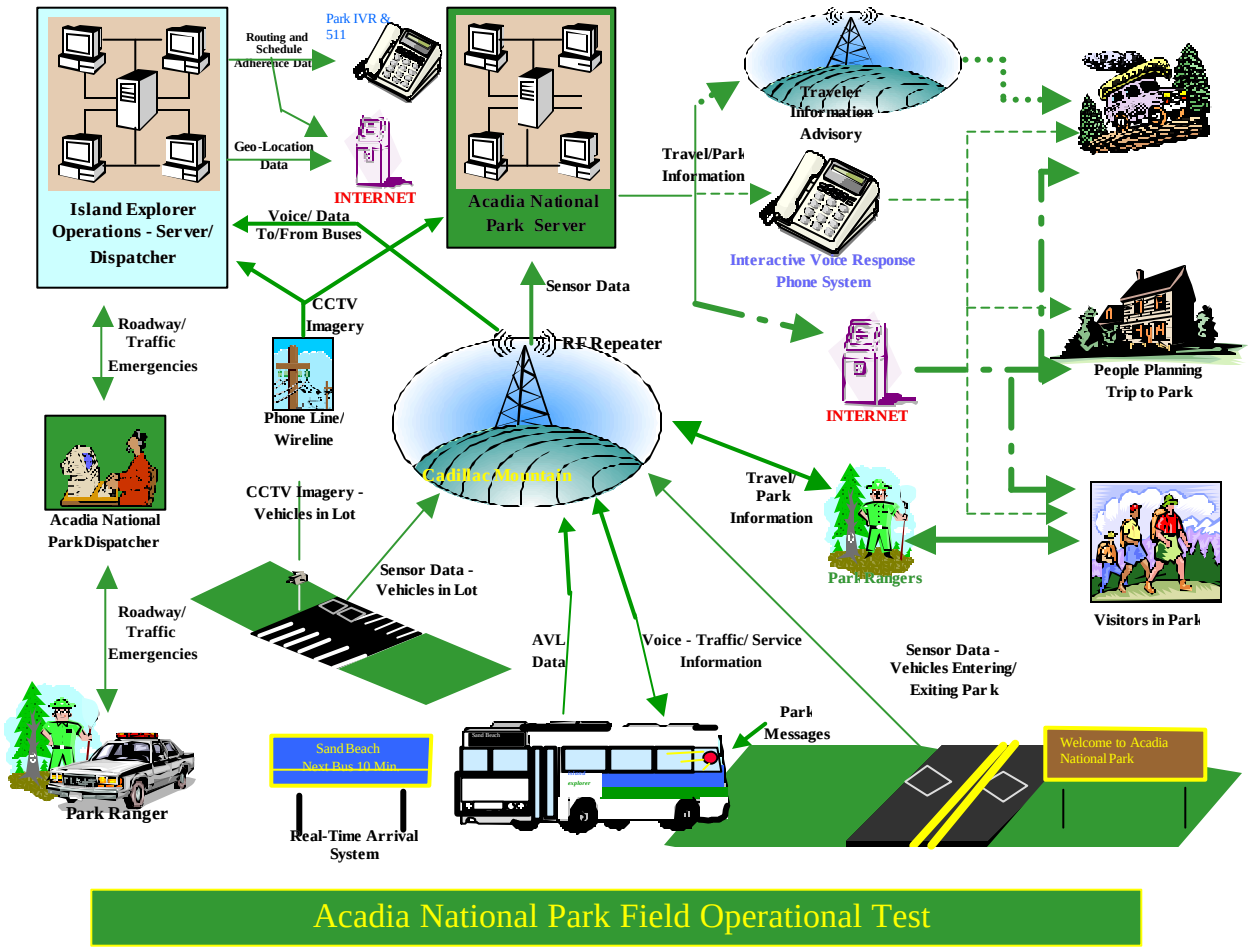


Figure 1.1.1: System Architecture for ITS FOT at Acadia National Park

The evaluation strategy was developed in cooperation with local partners and representatives from the state and federal Departments of Transportation. Despite the differences in the participant make-up of the workshop, the conclusions were very similar. There was considerable agreement among participants that customer satisfaction and mobility were higher in priority than the other goals. However, other evaluation goal areas (safety, efficiency, productivity and economic vitality, and energy and environment) also held some level of importance among the stakeholder organizations.

The overall evaluation approach was based on several evaluation tests that combined primary and secondary data collection and analyses. Visitor on-site interviews, mail-back questionnaires to visitors and local areas businesses, personal interviews, direct observation, and system and historical data analysis were performed. The visitor and business surveys collected primary data on user awareness and satisfaction. Personal interviews with Island Explorer and Acadia National Park staff provided in-depth perspectives on issues affecting deployment and use of the technology. The systems data from the ITS components was used to document the type, content, and sources of information made available through the various input systems and characterize the use of various user interfaces by stakeholders. Visitor responses are the subject of this report, and findings of the other tests are reported elsewhere.

Table 1.1.1: ITS System Components

System Component	Functional Requirements	System Elements	Needs Addressed
Island Explorer Two-way Voice Communications	Transmit and receive to/from/between vehicles and dispatch center	Transceivers; vehicle and base station Repeater to amplify signal	Improved efficiency Improved safety Real time traffic information for park staff, reduce crush load conditions, incident detection
AVL for Island Explorer	Compute and transmit vehicle location Integrate vehicle locations with departure signs, display vehicle locations[2], integrate into enunciator	Vehicle transmitter TCP/IP Network Connectivity, GPS Transceiver, GIS Applications, Travel Time Applications	Improved efficiency and performance Decreased use of POV's Improved safety and response Real time updates Increase ridership
Departure Sign for Island Explorer	Transmit location Compute departure Transmit to departure signs	Display sign, Software, Wireless/Wireline Communications	Improved scheduling information Increase ridership
Automated Annunciator for Island Explorer	Determine location Automatically play next stop and other pertinent announcements	Vehicle annunciator	Improve efficiency Reduce delays Increase safety Improve visitor experience
Passenger Counter for Island Explorer	Auto-count boardings/ dismounts at selected stops, Store information	Sensor to perform counts Data storage	Increase efficiency Improve planning Increase data options Reduce vehicle crush loads
Parking Lot Monitoring[3]	Record number of vehicles entering and exiting, provide slow scan video of parking area[4], transmit data, display video, store data from vehicle counts	Counting sensor Video camera Display monitor Wireless/wireline communications TCP/IP network connectivity	Decreased use of POV's Provide planning data Information for Rangers Decreased Response times
Automatic Ranger/Vehicle Geo-Location[5]	Determine location +-10 meters, transmit same to server, display locations on map	Transmitting unit GPS Transceiver Repeater for signal GPS/GIS Software	Information for Rangers Exact locations of Rangers Decreased response times Improved visitor safety, security
Entrance Traffic Volume Recorder[6]	Record and transmit number of vehicles entering and exiting, store data	Counting sensor Transmission unit	Count vehicles Provide Planning Data Decrease use of POV's
Traveler Information System	Collect and integrate data, disseminate data to appropriate audience	Interactive telephone messaging system[7], web page, parking status signs	Increase availability and display options of information, Decrease use of POV's, Improve visitor experience

[2] Not operational during the Field Operational Test
[3] Observation was used as an alternative to automated parking monitors as a way to communicate parking lot status to visitors through the website and specially created parking status signs
[4] Eliminated from the Field Operational Test
[5] Eliminated from the Field Operational Test
[6] Not operational during the Field Operational Test
[7] Not operational during the Field Operational Test

1.2 Objectives of the Visitor Survey

An important goal of the Acadia National Park ITS technologies is to reduce vehicle congestion in the Park. Reduced congestion will have the added benefits of increased mobility of visitors and residents, aesthetic and environmental benefits of fewer vehicles parked on roads, and safety benefits of less traffic and better emergency response. These factors will combine to provide a more positive visitor experience. To evaluate the extent to which the ITS deployment has fulfilled these objectives, information was collected from visitors (tourists and local residents), the target population of the ITS deployments.

The visitor survey was designed to obtain specific information on four of the six central evaluation objectives: customer satisfaction, mobility, productivity and economic vitality, and energy and environment. For example, measures of self-reported benefits of having traveler information, access to desired destinations and activities, and length of stay. Specific hypotheses related to these goal areas are presented in the 5.0 Discussion section of the report. The survey also was designed to collect information that could be used to assess awareness and use of the various ITS components and the performance of those components in providing accurate, understandable, and useable information. The questionnaires used to obtain this information are presented in Appendices A and B.

2.0 OVERVIEW OF STUDY DESIGN AND METHODS

Information was collected from visitors (tourists and local residents) using two different survey instruments: an on-site interview and a more extensive mail-back questionnaire. Visitors were greeted, briefly introduced to the purpose of the study, and asked to participate. If visitors agreed, an interview lasting 3-5 minutes was used to determine visitor or year-round/summer resident, travel destination, group size, group type, the length of visit, and awareness and use of travel information sources. A self-administered, mail-back questionnaire was sent to a sample of visitors who agreed to receive and complete the survey.

Visitors were surveyed during two separate data collection periods. In both data collection periods, information from visitors was collected using an "intercept" approach. In this survey technique, information is collected by "intercepting" visitors as they enter or leave a pre-specified attraction or location. In particular, visitors were intercepted as they traveled on-board Island Explorer buses or prior to leaving an attraction or location such as Sand Beach in Acadia National Park. At each site, the interviewer attempted to intercept one person from each traveling party to complete the on-site interview. Following the completion of the on-site interview, all respondents were asked to complete and return a more extensive mail-back questionnaire.

The collected on-site interviews were reviewed for completeness, accuracy, and consistency. Following the review, information from the on-site interview was entered into a database. The names and addresses of visitors who agreed to receive and complete a mail-back questionnaire were entered into a separate database for survey administration and tracking of returned surveys. Information from the mail questionnaires was entered and converted to a database suitable for analysis.

Additional highlights to the study design include:

- A total of four interviewers were used during the sample period to intercept visitors while traveling on-board buses on seven different bus routes and at three attractions inside Acadia National Park and one location outside of the Park.

- Visitors were intercepted over a two-day pre-test period in July and a twenty-day sample period from late July/early September.

- One interviewer was used to intercept visitors traveling on-board an Island Explorer bus and one interviewer was used to intercept visitors at an attraction or location each sample day, with the goal of obtaining as many on-site interviews as possible within an 6-8 hour sample period. Two interviewers were used for evening schedule intercepts on-board Island Explorer buses.

- A careful record of respondents and non-respondents of the mail-back questionnaire were maintained to reduce the burden of respondents receiving follow-up mailings.

The remainder of this section provides a summary of five main aspects of the study design: Target population, Interception and Recruitment of End Users, Selection of Sampling Sites and Times, On-site Interviews, and the Mail-back Questionnaire. Additional details on the sampling design and methodology are contained in "Acadia National Park ITS Field Operational Test: Test Plan for End User Survey."

2.1 Target Population

To evaluate the impact of ITS on end users information was collected from tourists and local residents, the target population of the ITS deployments. In order to assess the benefits of ITS, the population was further segmented into tourist and local resident users who were "aware of and using" components of the deployment and those who were "unaware of or not using" deployed components. For example, it was of interest to determine whether the perception of end users who were "aware of and using" ITS on their ease of travel would differ from the perception of tourists and locals who were "unaware of or not using" ITS. Therefore, non-users of ITS components were also targeted to be part of the sample of visitors and local residents contacted in the field.

2.2 Interception and Recruitment of End Users

Visitors were surveyed during two separate data collection periods. Once on July 22 and 24 for the pilot phase of data collection and again for twenty days during July 29 and September 1 for the main phase of data collection. In both data collection periods, information from visitors was collected using an "intercept" approach. In this survey technique, information is collected by "intercepting" visitors as they enter or leave a pre-specified attraction or location. Information was collected from tourists who were users of ITS technologies but may or may not have utilized the Island Explorer bus services. This sample of users came from the Park visitor center and Park campgrounds where ITS information such as real-time parking was displayed on signs. Also, a sample of users came from the Jordan Pond House and Sand Beach to enhance opportunities to obtain information from non-ITS users. Finally, tourists and local residents who utilize Island Explorer bus services were intercepted on-board designated bus routes.

The pilot study was used to refine the interview protocol, gather information that could be used to refine sample size estimation, and assess level of cooperation from tourists and local residents. An additional activity was to investigate the appropriateness of each sampling location and to identify the specific sites within each location where tourists should be intercepted such as on-board as compared to near the bus stop location. This effort was coordinated with the appropriate personnel such as Park Staff and Park Concessionaires. Also, letters of authorization and other required documents (e.g., Park pass, research permit, etc.) were obtained from the appropriate

authorities for each location. Acadia National Park provided shirts with the nametags of the individuals conducting the interviews. The authorization letters and any other required documents were given to the data collection team. These procedures maximized the success of the main phase of data collection later in the summer.

At each site, the interviewer attempted to intercept one person (over 18) from each traveling party to complete the on-site interview. Visitors were greeted, briefly introduced to the purpose of the study, and asked to participate. If visitors agreed, an interview lasting 3-5 minutes was used to determine visitor or year-round/summer resident, travel destination, group size, group type, the length of visit, and awareness and use of travel information sources. Photographs of signs showing ITS information such as parking lot conditions and ITS components such as real-time bus departure signs for the Island Explorer were mounted on cards to accompany questions related to each ITS component contained within the on-site interview. Following the completion of the on-site interview, all respondents were asked to complete and return a more extensive mail-back questionnaire.

2.3 Selection of Sampling Sites and Times

On-site interviews were conducted on-board buses on seven different Island Explorer bus routes. One interviewer was used during the day and two interviewers in the evening to intercept visitors as they traveled on-board an Island Explorer bus. Bus users were sampled in a systematic fashion using a multi-stage cluster sampling design. The primary sampling units were blocks of time (essentially individuals on a certain bus route during that block of time). Before the blocks of time were selected, a stratification scheme was employed to define week-end clusters (Friday through Sunday) and weekday clusters (Monday through Thursday). The first stage cluster sample was then draw days from each strata per week of sampling. Two week-end and three weekday days were chosen randomly from the possible days for each week. In the August data collection period this would be 20 total days, 8 days of week-ends and 12 days of weekdays. The second stage of this sampling procedure was the selection of bus routes. For each day, one shuttle route was chosen randomly from the possible 7 Island Explorer bus routes. The third stage was identifying time shifts for sampling bus users. The possible time blocks sampled varied because of the time of operation for the different bus routes. For example, the Eden Street bus route operated 7:00 a.m. to 11:00 p.m., therefore, one 4-hour time block could be 7:00 a.m.-11:00 a.m., and the other 4-hour time block being 7:00 p.m.-11:00 p.m.

On-site interviews were conducted with tourists and local residents who were users of ITS technologies but may or may not have utilized the Island Explorer bus services. This sample of visitors was contacted at Visitor Center, Sand Beach, and Jordan Pond House in the Park as well as the Village Green in Bar Harbor outside of the Park. One interviewer sampled visitors in a systematic fashion as described above using a multi-stage cluster sampling design. The first stage cluster sample utilized the same days selected for the bus users as described above. The second stage of the multi-stage cluster sampling design involved selecting among the 4 sample locations. The third stage set time shifts for sampling users from 9:00 a.m.-5:00 p.m.

As discussed in previous sections, onsite interviews were conducted for two different time periods. Once for two days in July for the pilot phase of data collection and again for twenty days during the late summer for the main phase of data collection. The pilot data collection phase was performed on July 22 and 24. The main data collection phase was performed on twenty days between the dates of July 29 and September 1. Appendix C contains the specific sampling location and times for the main data collection period.

2.4 On-site Interview

As described in Section 2.1, an intercept approach was used to identify and collect information from visitors. Upon approaching a potential participant, the interviewer introduced him or herself and gave a brief explanation of the study. Generally, the on-site interviewer followed a pre-determined script. For example, all end users were asked to participate in the study. They were told that participation was completely voluntary and that all responses would be confidential. The intent was to keep on-site visitor burden at a minimum, concentrating on obtaining enough information to allow some conclusion about ITS information awareness and use to be made and to allow testing for differences between response and non-response groups on the mail-back questionnaire.

When individuals were contacted in the field they were asked to participate in the study. They were told that participation was completely voluntary and that all responses made would be confidential. A statement below was handed to them at the point of contact:

> PRIVACY ACT STATEMENT – Your participation in this survey is voluntary. There are no penalties for not answering some or all of the questions but since each interviewed person will represent many others who will not be surveyed your cooperation is extremely important. The answers you provide are confidential. An identification label used on mailout questionnaires is for mailing purposes only. Our results will be summarized so that the answers you provide cannot be associated with you or anyone in your group or household. Your name and address will not be given to any other group or used by us beyond the purposes of this study.

The collected on-site interviews were reviewed for completeness, accuracy, and consistency. Following the review, information from the on-site interview was entered into a database. A tracking number was assigned to each tourist or local user intercepted in the field. This number served as the unique identifier that linked the responses from the on-site interview to responses on the completed and returned mail-back questionnaire.

2.5 Mail-back Questionnaire

A mail survey was used to conduct the self-administered questionnaire to the sample of ITS users and non-users. The Total-Design Method (TDM), a standardized methodology consisting of questionnaire construction and survey implementation was utilized as a guide for the mail survey (Dillman 1978)[8]. Below is a description of the mail survey components including: 1) the questionnaire; 2) a cover letter of explanation; 3) an envelope for sending the mail survey; 4) a stamped envelope for returning the questionnaire; and 5) organization of sending the mail survey.

The questionnaire was designed to elicit information from respondents on a variety of variables related to ITS travel and traffic information obtained from staff at the visitor centers and Park campgrounds and the interactive telephone information service; Island Explorer bus and travel-related information; travel experiences; and demographic information. Technical review provided by transportation experts, Park staff, stakeholders outside of the Park and the results of the pre-test assisted in the development of questions, the sequence of questions, and wording of the final questionnaire. A copy of the mail survey is contained in Appendix B. The questionnaire had a cover page with the title of the survey and the final page of the questionnaire contained an

[8] Dillman, Don A. 1978. Mail and Telephone Surveys. New York: John Wiley and Sons. 325 p.

open-ended section for comments, a thank you for completing the questionnaire, and instructions to return the survey.

A cover letter was sent with the questionnaire to explain the purpose of the survey to the respondents and to encourage a high response rate. The University of Maine logo with the Parks, Recreation & Tourism program was professionally reproduced on high quality bond paper. A software program merged the name and address of the respondent on each cover letter. The content of the letter contained the following: 1) identification of the organization conducting the study; 2) an explanation of the purpose of the study; 3) the importance of why the respondent needed to answer the questionnaire; and 4) an explanation to the respondent that the information provided would be held in the strictest confidence. A hand written signature of Professor John Daigle, the Battelle team member who administered the surveys, was applied to all cover letters.

Extra attention was given to details such as the envelope and cover letter to emphasize the difference of this mail survey from other mail surveys more common to American households. A high quality bond #10 envelope was used to mail the questionnaire, cover letter, and a #9 business reply envelope. The mailing envelope color and texture matched the cover letter. The logo of the University of Maine and address of the Parks, Recreation & Tourism program was professionally reproduced on the upper left corner of the envelope. The name and address of each respondent was hand written on the envelope to make the appearance of the mail survey more personal. Regular postage stamps as opposed to mechanical stamping were used to mail the surveys.

A plain white #9 business reply envelope was mailed with the questionnaire and cover letter and used by respondents to return the completed questionnaires. A return mailing address was printed on the business reply envelope. The right corner of the envelope stated NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES. An account (business reply postage) was established with the University of Maine so that postage was charged only if respondents used the envelope for returning questionnaires. A bar code printed on each business reply envelope indicated the appropriate account to charge when the envelope was returned to the University of Maine. A substantial amount was saved in postage costs by using this method.

Approximately four to five students were used to organize components of the self-administered questionnaire 2-3 days prior to the initial mailing of surveys. Cover letters were merged with the data listing of names and addresses. Signatures for the cover letters were hand-written in blue ink. An identification number was placed on the last page of the questionnaire to monitor returns. The address of the respondent was hand written on the mailing envelope with blue ink and postage stamps pre-fixed in the upper right corner of the envelope.

A system was created to monitor returned questionnaires and also to facilitate additional mailings of the self-administered questionnaire. A master data table contained the following: 1) unique respondent ID number; 2) name and address; 3) mailing Number One, Number Two, and Number Three; and 4) notes and the non-deliverable questionnaires. A unique identification number was permanently assigned to the respondent for the duration of the mail survey. The number was written on the last page of the questionnaire and used to monitor returns. The name and address of each respondent was cross-referenced with the questionnaire identification number. A date was recorded when the completed questionnaire was received at the University of Maine and noted in the applicable mailings Number One, Number Two and Number Three boxes. Notes were recorded on data sheets describing outcomes such as non-deliverables of the initial mailings.

The methodological literature on follow-up mailings suggests that it is an effective method for increasing return rates in mail surveys (Babbie 1992)[9]. The timing of follow-up mailings is important and The Total Design Method was used as a guide for sequencing follow-up mailings (Dillman 1978)[10]. The completed questionnaires returned to the University of Maine were processed on a daily basis. A careful record of respondents and non-respondents were maintained to reduce the burden of respondents receiving follow-up mailings. After the initial mailing a postcard reminder was mailed in one week to all respondents. The purpose of the postcard was to remind the respondent to fill out and return the questionnaire and to thank him or her if the completed survey had been already filled out and mailed back. The first follow-up mailing of a replacement questionnaire was mailed three weeks after the first mailing. The second replacement questionnaire was sent six weeks after the first mailing. The same detail to components of the self-administered questionnaire for the first mailing was used in preparing the two follow-up mailings. The mail surveys contained a new copy of the questionnaire, business reply envelope, and slightly different cover letters. Signatures on the cover letters and respondent addresses on the envelopes were hand written. A data table was used to calculate response rates throughout phases of sending the mail survey.

A codebook was produced for each data collection instrument. The codebook defined variables in terms of type, location within the data file, field width, and description of variable. The data was then electronically keyed into an Excel™ spreadsheet. The Excel™ spreadsheet defined an acceptable range of values for each variable to improve the accuracy of data entry. In addition, a random check of entered data was compared with corresponding questionnaires to assess the accuracy of data entry. All errors or questions were flagged during the electronic data entry and researched to correct answers entered into the database. The Excel™ file was converted to a database suitable for analysis. The resulting data was analyzed using the Statistical Package for the Social Sciences SPSS™.

[9] Babbie, Earl. 1992. The Practice of Social Science Research. 6th Edition, Belmont, CA: Wadsworth Publishing. 493 p.
[10] Dillman, Don A. 1978. Mail and Telephone Surveys. New York: John Wiley and Sons. 325 p.

3.0 RECRUITMENT RESULTS AND FIELD EXPERIENCES

3.1 Recruitment and Participation

Originally, recruitment was to proceed using a systematic sampling design where every nth person was selected for sampling. Visitors were eligible for participating in the mail-back questionnaire if they indicated that they were "aware of and used" components of the ITS deployment. The first "non-aware or non-user" visitor intercepted after an "aware of and used" would be eligible for participating in the mail-back survey. This approach, however, proved to be overly cumbersome, and the approach was modified so that the on-site interviewer recruited the next visitor as soon after completion of the previous case as possible. In essence, as interviewers completed cases at a different rate, this created an ad-hoc systematic sample particular to each interview. While not quite as elegant or rigorous as the original design this approach maximized the number of visitors that were intercepted and permitted post-processing of the results to identify the ITS awareness and user status. For the on-site interviews, response rate was 97 percent. Approximately 50 visitors did not want to be interviewed. A total of 1,505 on-site interviews were completed on 7 bus routes, 3 locations inside Acadia National Park and the Village Green located in Bar Harbor (Table 3.1.1).

Table 3.1.1: Visitors contacted by sample location

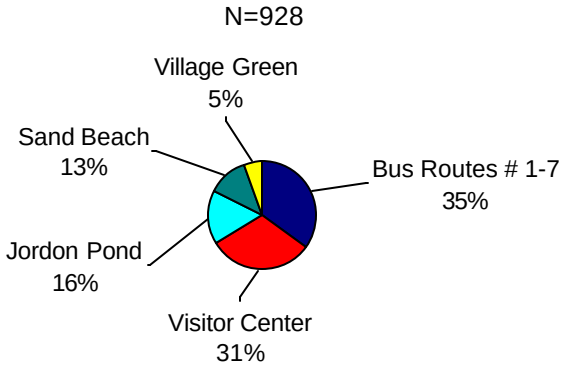
Sample location	On-site Interviews	Distribution
	Number	%
Bus Route:	514	34
Sand Beach	(106)	
Eden Street	(99)	
Jordan Pond	(69)	
Blackwoods	(61)	
Campgrounds	(61)	
Southwest Harbor	(61)	
Brown Mountain	(57)	
Visitor Center	498	33
Jordan Pond House	247	16
Sand Beach	164	11
Village Green	82	6
Grand Total	1,505	100

Of the 1,505 who participated in the onsite interview, 1,278 agreed to receive and complete the mail survey. Questionnaires were sent to 1,031 out-of-state visitors from the United States, 196 summer or year-round residents of Maine, and 51 visitors from another country. Of the 1,278 surveys mailed to visitors, 16 were not deliverable. A total of 928 usable questionnaires were returned, providing an overall response rate of 74 percent. Figure 3.1.1 shows the number of completed surveys by sample location.

Visitors who returned their questionnaires were compared to those who did not return their questionnaires on several on-site interview questions to check for non-response bias. Respondents did not differ from non-respondents on number of days they planned on staying in the Mount Desert Island area (X^2 = 13.22, 7 df, P = .067), type of group (X^2 = 7.43, 5 df, P = .190), first time visiting Acadia National Park (X^2 = .338, 1 df, P = .533), or whether the visitor was "aware and using", "aware and not using", or "unaware" of any deployed ITS components

(X^2 = .134, 2 df, P = .935). However, the proportion of year-round or summer residents of Mount Desert Island was significantly smaller for the total number respondents as compared to the total number of non-respondents (X^2 = .140, 2 df, P = .000). Also, respondents differed significantly from non-respondents based upon size of the group. The non-respondent proportion of visitors traveling alone was slightly higher and visitors traveling as a couple were slightly lower as compared to same group size categories of respondents (X^2 = 13.57, 6 df, P = .035).

Figure 3.1.1: Completed surveys by sample locations



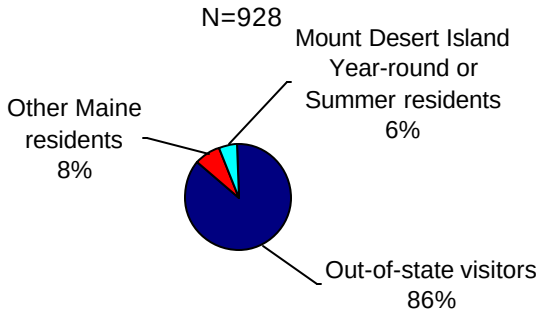
4.0 SUMMARY OF SURVEY RESPONSES

Results of the survey are presented in the following categories: 1) demographics, 2) awareness and usage of ITS components, 3) visit and travel characteristics, 4) customer satisfaction, 5) mobility, 6) productivity and economic vitality, and 7) energy and the environment.

4.1 Demographics

The vast majority of travelers (86%) contacted in this study were out-of-state visitors (Figure 4.1.1). Eight percent of the travelers indicated that they were residents of Maine but did not live on Mount Desert Island. Six percent of the 928 travelers surveyed lived Year-round or were Summer residents of Mount Desert Island.

Figure 4.1.1: Proportion of traveler respondents by residence



Altogether, the largest proportion of United States visitors who returned the traveler survey were from New York (15%) followed by Maine (14%), Massachusetts (12%), Pennsylvania (9%), and New Jersey (7%). Smaller proportions of visitors came from another thirty-three states and Washington, D.C. (Table 4.1.1). International visitors comprised 4% of the total number of respondents (Table 4.1.2). The countries most often represented were Canada (52%) and the United Kingdom (33%).

Table 4.1.1: Proportion of United States respondents from each state
N=895 respondents;
percentages may not equal 100 due to rounding.

State	Number of respondents	% of U.S. respondents	% of total respondents
New York	132	15	14
Maine	127	14	14
Massachusetts	103	12	11
Pennsylvania	82	9	9
New Jersey	65	7	7
Connecticut	37	4	4
New Hampshire	34	4	4
Virginia	33	4	4
Michigan	29	3	3
Florida	28	3	3
Maryland	27	3	3
Ohio	27	3	3
Illinois	20	2	2
North Carolina	17	2	2
Texas	14	2	2
Vermont	13	1	1
22 other states & Washington D.C.	107	12	12

Table 4.1.2: International respondents by country of residence
N=33 respondents;
percentages may not equal 100 due to rounding.

Country	Number of respondents	% of international respondents	% of total respondents
Canada	17	52	2
United Kingdom	11	33	1
Czech Republic	1	3	<1
Germany	1	3	<1
Hong Kong	1	3	<1
Australia	1	3	<1
Slovakia	1	3	<1

As Figure 4.1.3 shows over half of the survey respondents were from a small town or small city (16% and 41%, respectively). Figure 4.1.4 shows a slightly higher proportion of female respondents (53%) as compared to male respondents (47%). The most common respondent age groups were 41-50 age groups (32%) and another 24% of respondents were in the 51-60 age groups (Figure 4.1.5). Caution should be used in drawing conclusions about the reported ages. Answers reflect the age of the person filling out the survey, and they do not necessarily show the distribution of ages of certain travelers such as bus riders, especially individuals younger than 18 years. Visitors to Acadia National Park had particularly high education levels (Figure 4.1.6). Approximately 11% reported completing high school and less than 1% did not graduate from high school. About two-thirds of the visitors completed a 4-year college degree or graduate degree. An extremely high proportion of visitors reported completing a graduate degree (36%).

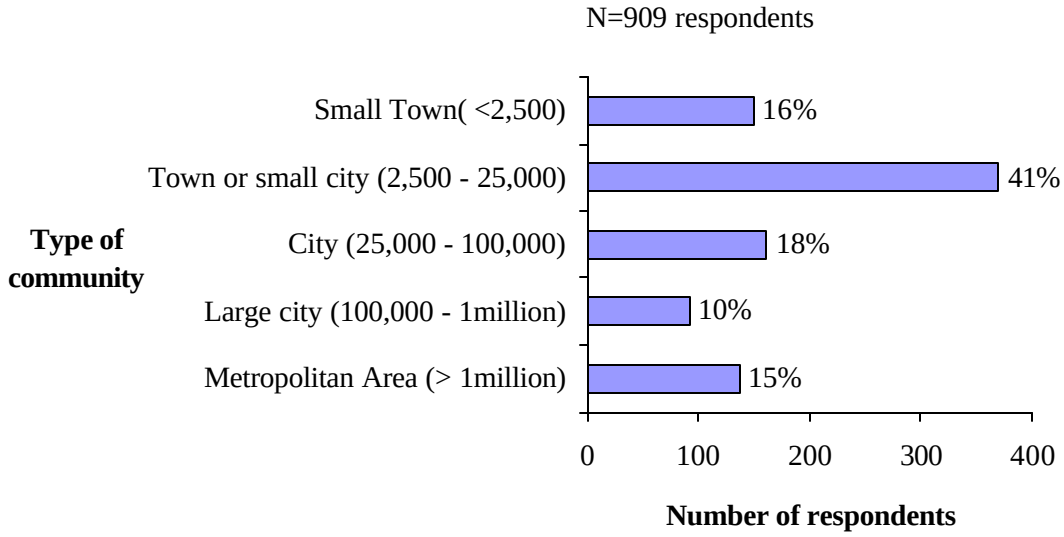


Figure 4.1.3: Type of Community

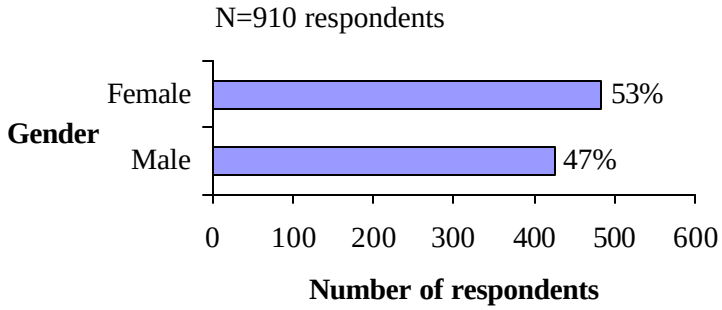


Figure 4.1.4: Gender

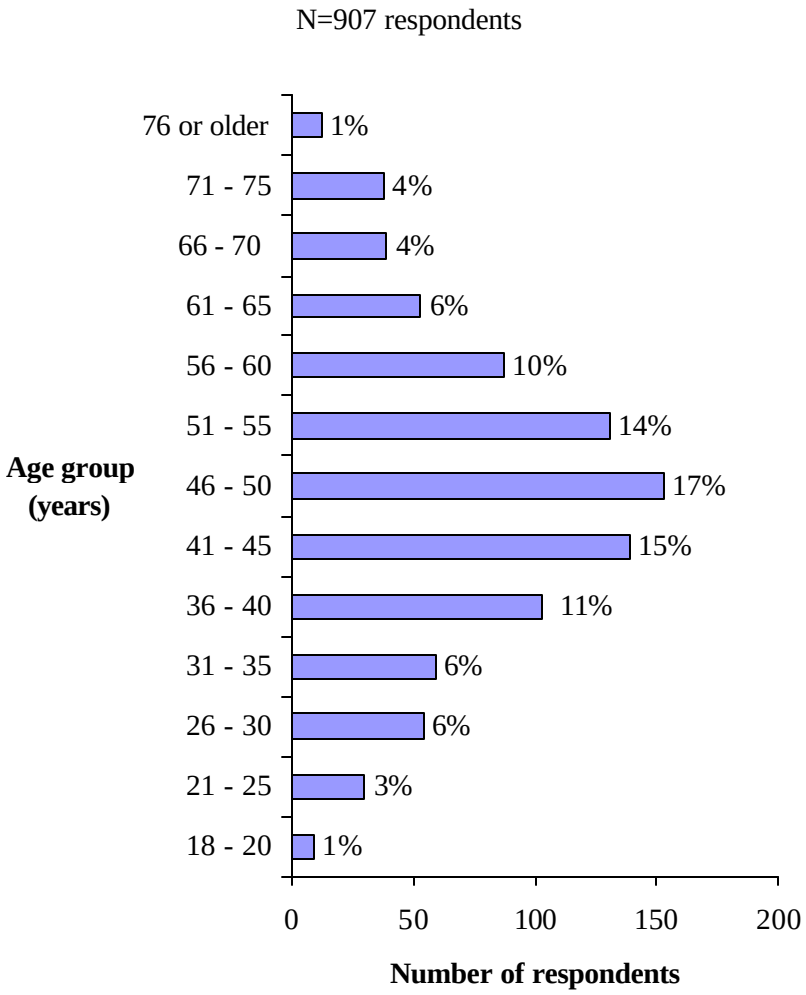


Figure 4.1.5: Age

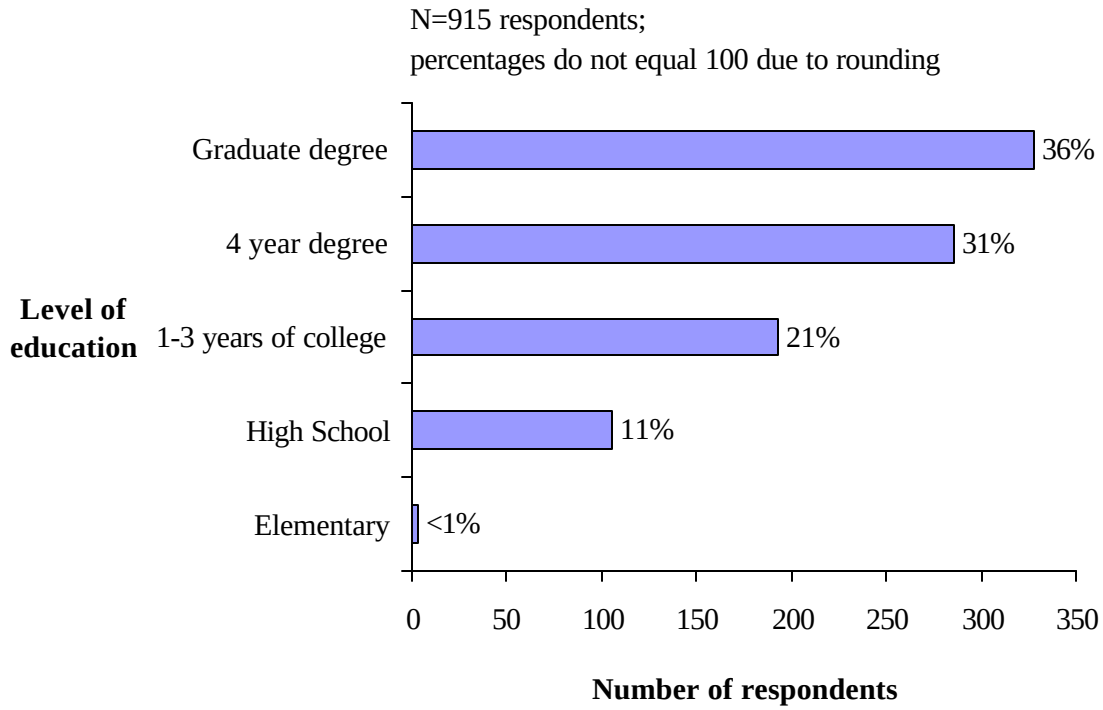


Figure 4.1.6: Education

Visitors were asked how often they use any type of local bus transit at home. Figure 4.1.7 shows that 69% of the visitors reported transit was not available or had never used any type of transit at home. Another 18% of the visitors reported "hardly ever." Six percent of the visitors indicated they use local transit "almost every day."

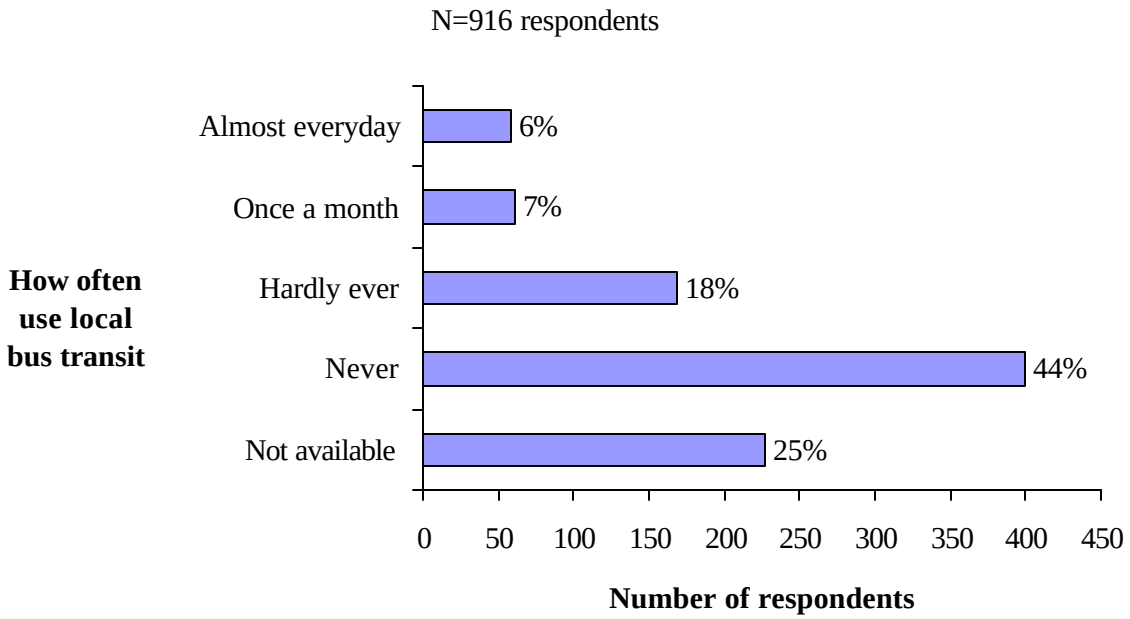


Figure 4.1.7: How often use local bus transit at home

Visitors were asked if they regularly access the world-wide-web/Internet once a week or more either at home or at work. Figure 4.1.7 shows that most visitors (83%) use the world-wide-web

on a regular basis. In addition, visitors were asked if they carry technological equipment such as a cell phone or laptop computer at least ten times a month, on average. Nearly three quarters of the visitors reported carrying cell phones (73%) and 17% of visitors carried laptop computers. Fourteen percent of visitors reported carrying a handheld personal computer, palmtop, or digital assistant. Approximately 10 percent of visitors reported using a carry pager. Visitors were asked if any of the above devices were used to obtain traffic information while traveling. A relatively high proportion of these visitors (12%) reported using one or more of the technologies to get traffic information while traveling. Caution should be used in drawing conclusions about the reported use of the above technologies to get traffic information and their travel in Maine. Answers reflect background information about visitors, and do not necessarily mean these technologies where used on this particular trip to Acadia National Park.

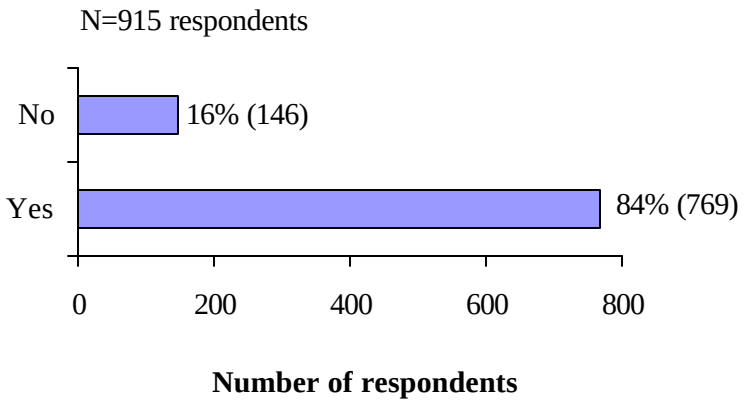


Figure 4.1.8: Use of the world-wide-web/Internet once or more either at home or work

4.2 Awareness and Usage of ITS Components

As part of the Acadia National Park Field Operational Test, three ITS components were planned to be deployed that could be used directly by visitors to help with traveling in Acadia National Park. These components were a traveler information system, an automated annunciator for the Island Explorer buses, and electronic departure signs for the Island Explorer buses. The traveler information system would collect and integrate travel data such as real-time parking conditions and bus schedule information and disseminate to visitors via an interactive telephone messaging system and web page. Unfortunately, complications were encountered with the installation and the interactive telephone messaging system was not deployed during the evaluation period. However, other traveler information was provided to visitors such as real-time parking conditions at Sand Beach and the Jordan Pond House. This information was available on the Acadia National Park web page and displayed on signs at the Visitor Center, Blackwoods Campground, and Seawall Campground. Parking condition status was updated as conditions changed by Acadia National Park staff. The automated annunciator for the Island Explorer bus transmitted an audio message and displayed the next bus stop on an electronic sign within the bus. Finally, electronic signs displayed real-time departures of the next Island Explorer bus at the Visitor Center and Jordan Pond House bus stops in Acadia National Park and the Village Green in Bar Harbor located outside of the Park.

Awareness and usage of the above ITS components as well as non-ITS traveler information was asked during the on-site interview. Photographs of the parking availability sign, real-time bus departure sign, and Acadia National Park web page were mounted on cards to accompany questions related to ITS components. Table 4.2.1 shows the proportion of visitors that were aware of and the proportion of visitors that used different sources of traveler information. Over half of the visitors (55%) reported being aware of the parking availability travel information. Thirty percent of the visitors reported planning to use the information for their travels. A relatively high proportion of visitors, more than 50% of those who became aware of the parking information, planned to use the information. It should be noted that the parking availability reflected the designated parking lots at Sand Beach and Jordan Pond. The status of parking lots being full did not necessarily restrict visitors from gaining access to these attractions. Visitors could park along the 2-lane one-way section of the Park loop road and walk to the Sand Beach area. Also, visitors could park along the Park loop and boat access roads to gain access to the Jordan Pond House. Direct observation of the parking conditions at these locations indicated this was a common practice for visitors when parking lots became full. Some visitors may have realized these areas were still accessible by privately owned vehicles and despite knowing the condition of the parking lots did not plan to use the information.

Table 4.2.1 Were you aware of and used any of the following travel information sources?

Source of information	Aware	Used
	----percent----	----percent----
Parking availability (Park staff/signs)	55	30
Electronic Island Explorer departure signs	49	28
Acadia National Park website	42	31
Island Explorer automated annunciator	40	34
Island Explorer website	8	5
Park traveler information (telephone system)	2	1

Nearly 50% of the visitors were aware of and 28% planned to use the Electronic Island Explorer bus departure signs (Table 4.2.1). Forty-two percent of visitors were aware of the Acadia National Park website and a relatively high percentage of visitors (31%) used this source for

planning trips. Caution should be used in drawing conclusions about the web page being used for traveler information for real-time parking conditions. Approximately 10 percent of the visitors indicated on the mail-back questionnaire that they specifically used the Acadia National Park's website for parking conditions. A small percentage of visitors (2%) reported being aware of traveler information using the Park's telephone system. As indicated above the automated telephone message system was not deployed, however, travel information could be obtained with the general telephone number for Acadia National Park. Finally, caution should be used in drawing conclusions about Park visitors in general to Acadia National Park concerning the awareness and usage of travel information sources. Answers reflect visitors sampled at many locations having one or more of the traveler information sources. For example, most visitors contacted on the Island Explorer buses would have been automatically exposed to the automated annunciator.

In any deployment of ITS, one of the implicit objectives is to make the target audience (in this case visitors) aware of and use the deployed components. Coinciding with awareness, use of the deployed components is another factor that can be used to measure the success of the ITS deployment. In this study, visitors can be separated into three distinct groups: (1) those that are aware of and used at least one deployed ITS component (the traveler information system involving real-time parking conditions, automated annunciator, and electronic departure sign for the Island Explorer bus); (2) those that are aware of but did not use any of the deployed components; and (3) those that were unaware of all deployed ITS components. Table 4.2.2 illustrates that the vast majority of visitors contacted on-board the Island Explores buses who reported being aware of one or more of the ITS components actually used the traveler information. For example, the visitors on the Campground bus route that reported being aware of one or more of the ITS components all used the traveler information. Indeed, a bus rider would have a hard time ignoring the audio and visual displays of information. Only 6% of the visitors on the Campground bus were unaware of the deployed ITS components. A few sample locations such as Sand Beach and the Jordan Pond House enabled an assessment of visitors who had limited direct access to one or more of the deployed ITS components. However, a relatively high proportion of the visitors reported awareness and use of one or more of the deployed ITS components at Sand Beach and the Jordan Pond House (44% and 42%, respectively). Less than one-third of the visitors reported at these particular sample locations said that they were unaware of any ITS deployed component supplying traveler information.

Table 4.2.2 Awareness and use of at least one ITS component by sample location

Sample location	Aware & used	Aware & not used	Unaware
Bus Route:		-------percent-------	
Campgrounds	94	0	6
Sand Beach	93	4	3
Jordan Pond	86	5	9
Southwest Harbor	86	12	2
Brown Mountain	83	7	10
Blackwoods Campground	83	15	2
Eden Street	78	12	10
Village Green	71	6	23
Sand Beach	44	28	28
Jordan Pond House	42	32	27
Visitor Center	37	34	29

4.3 Visit and Travel Characteristics

Visitors reported using different modes of transportation to reach Mount Desert Island and Acadia National Park. Table 4.3.1 shows the different modes of transportation used to reach Mount Desert Island and visitors were divided into two sub-groups: 1) visitors who reported using at least one of the deployed ITS components (ITS-user) and 2) visitors who reported not using any of the deployed ITS components (ITS non-user). Visitors identified as ITS non-users were much more likely to report the use of a car or truck with no trailer as the mode of travel to reach Mount Desert Island (91% and 75%, respectively). Ten percent of the ITS users reported using a car or truck with a trailer and 7% reported driving a Motor home/RV with or without a car. Approximately 8% of ITS users as compared to 2% of ITS non-users used another mode of travel besides a car, truck, or Motor Home/RV to reach Mount Desert Island. Caution should be used in drawing conclusions about the mode of travel and the awareness and usage of travel ITS components. The ITS user sub-group contains a higher proportion of visitors who indicated using the Island Explorer bus during their visit as compared to the ITS non-user sub-group.

Table 4.3.1: Mode of transportation used to reach Mount Desert Island

Mode of transportation	ITS user	ITS non-user
	---------Percent---------	
Car or truck, no trailer	75	91
Car or truck, with trailer	10	4
Motor home/RV	6	2
Commercial airplane	4	3
Private boat	3	0
Tour bus	2	1
Other	2	1
Motor home/RV, with car	1	1
Bicycle	1	<1
CAT ferry without auto	1	<1
CAT ferry with auto	1	<1
Cruise ship	<1	0
Private airplane	<1	0

Percentages do not equal 100 due to rounding.

Figure 4.3.1 shows visitor group sizes, which ranged from one person to 45 people. The visitor with a group of 45 was with a school group. Forty-eight percent of visitor groups consisted of two people, while another 30% were visitors in groups of three or four. Fifteen percent of groups consisted of five or more visitors. Seventy-six percent of visitor groups were made up of family members (see Figure 4.3.2). Six percent of visitors were traveling alone. One percent of the visitors indicated they were part of a tour group. Visitors listing themselves as "other" group type included being part of a school or reunion. The sub-groups of visitors identified as ITS users and ITS non-users were much alike in terms of group sizes and group types.

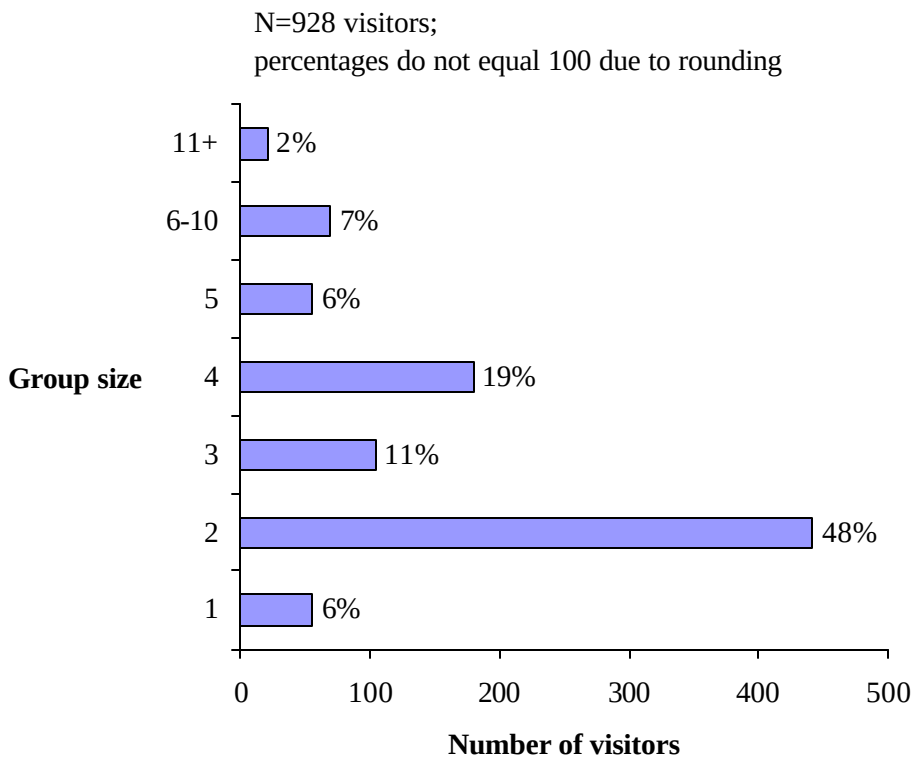


Figure 4.3.1: Visitor group sizes

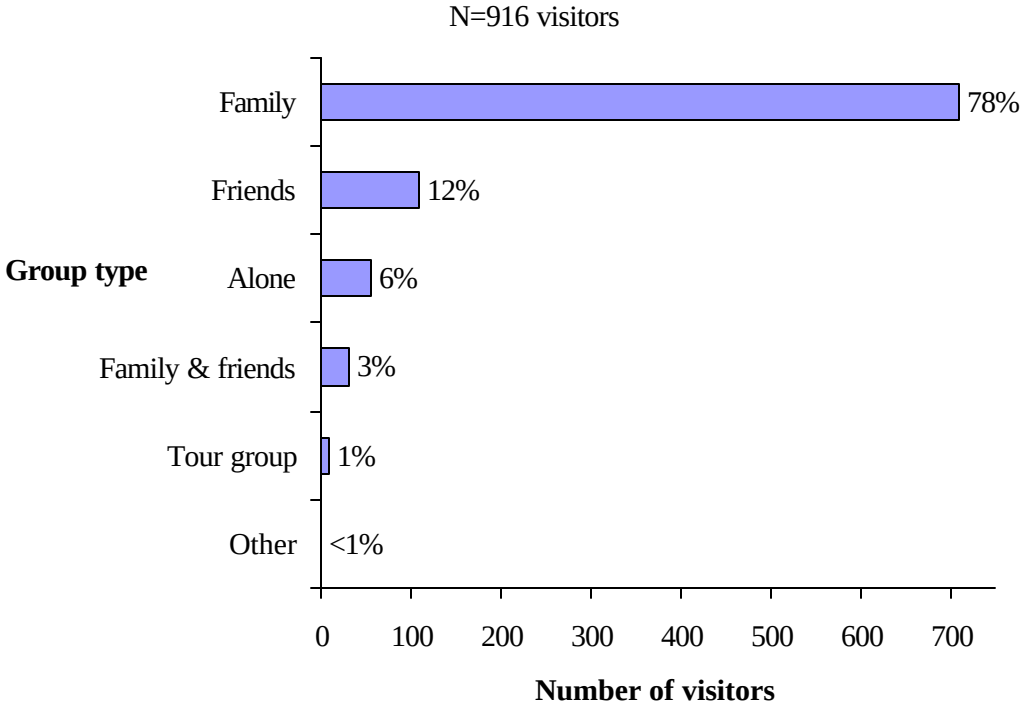


Figure 4.3.2: Visitor group types

Visitors who were not year-round or seasonal residents were asked how much time they spent in the Mount Desert Island area. Most visitors stayed one or more overnights on Mount Desert Island (Figure 4.3.3). The visitor length of stay and expenses will be discussed in more detail in section 4.6 Productivity and Economic Vitality. Also, important differences among the ITS users and ITS non-users sub-groups as well as differences in bus users as compared to non-bus users related to length of stay and expenses will be discussed in the subsequent section. A visitor who answered "yes" to staying overnight on Mount Desert Island, was asked the type of accommodation they stayed in. The most commonly used types of accommodations were motel or hotel (42%) and private campground (29%), as shown in Figure 4.3.4. Fourteen of the visitors reported staying inside Acadia National Park followed by 13% of visitors who stayed in a bed and breakfast. "Other" types of accommodations where visitors stayed included private boat/yacht and cruise ship.

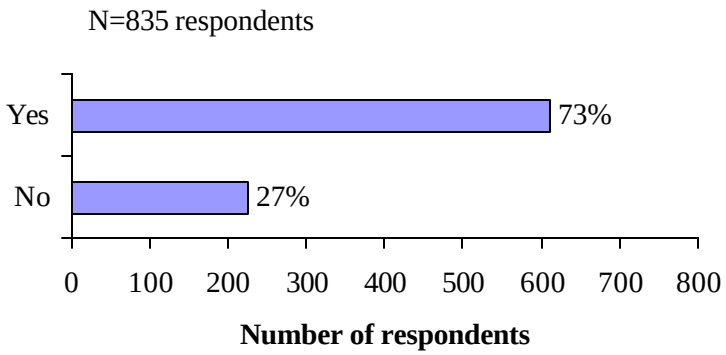


Figure 4.3.3: Overnight stay on Mount Desert Island (MDI) by nonresidents of MDI

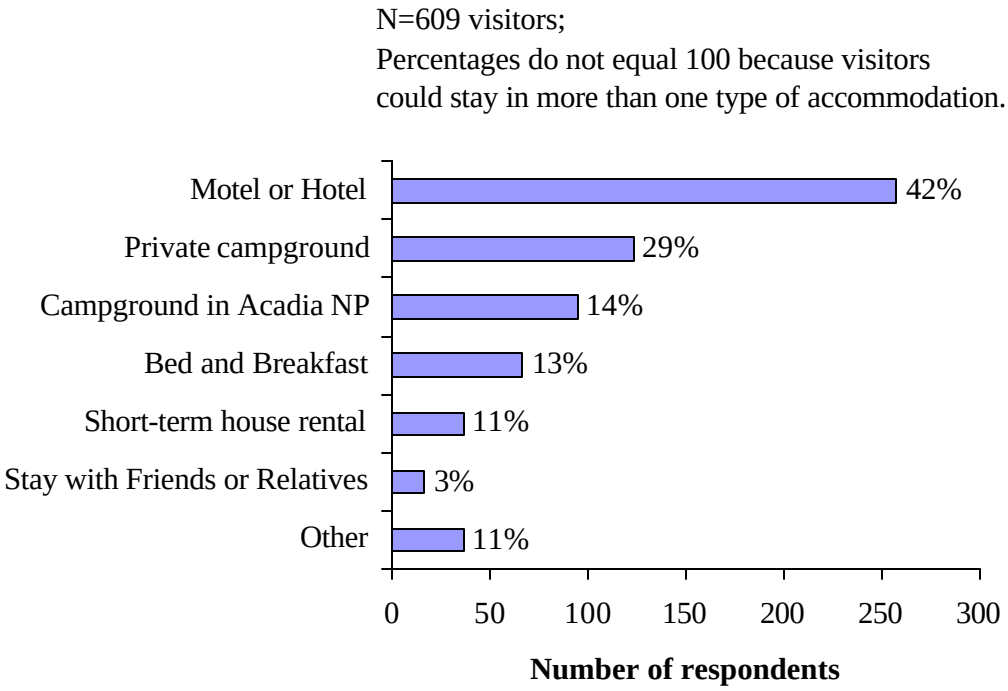


Figure 4.3.4: Types of overnight accommodations used on visit

A number of questions were asked to visitors to assess activities and their travel experience during their visit. Visitors were asked to indicate sources of travel or traffic information they used during their most recent visit. Table 4.3.2 shows that both ITS users and ITS non-users reported using multiple sources of travel and traffic information. The most common source of travel information for the ITS users and ITS non-users was the Acadia National Park brochure/map (80% and 78%, respectively). The second most common source of travel or traffic information used was visitor's prior knowledge. A slightly higher proportion of ITS non-users (49%) as compared to 46% of ITS users indicated using prior knowledge. The ITS users reported much more use of the Beaver Log and the Island Explorer insert that was inside the Beaver Log. As described earlier in this section of the report the ITS user group contained a much higher proportion of visitors who indicated using the Island Explorer bus during their visit as compared to the ITS non-user group. A higher proportion of ITS users (25%) as compared from 10% of ITS non-users reported obtaining travel and traffic information from private campground/motel/ bed and breakfast hosts. "Other" sources of information used by visitors included seeing the Island Explorer bus driving in the area and the bus stops with bus schedules and map.

Table 4.3.2: Sources of travel or traffic information used during visit

Source of information	ITS user	ITS non-user
	---------Percent---------	
Acadia National Park brochure/map	80	78
Prior knowledge	46	49
Beaver Log	39	18
Travel guide/book	37	40
Island Explorer insert in Beaver Log	34	5
Acadia National Park website	29	20
Friends/family	29	26
Host of lodging	25	10
Other visitors	16	10
Chamber or state tourism office	16	11
Other	9	9
Island Explorer website	5	1

Percentages add to more than 100 because a visitor could use more than one source of information.

Visitors reported participating in a variety of activities and often multiple activities both inside Acadia National Park and outside the Park. Table 4.3.3 shows the activities and visitors who were identified as ITS users and ITS non-users. The most common activity for ITS users and ITS non-users was sightseeing (81% and 76%, respectively). Over half of the visitors for both groups indicated going out to have lunch or dinner at the village center and shopping in village centers. Popular outdoor activities for visitors included hiking on trails, walking on carriage roads, picnicking, biking on carriage roads, and attending ranger led programs. Participation levels were generally higher for ITS users as compared to ITS non-users for activities both inside Acadia National Park and outside of the Park. The higher participation levels and more diverse activities of ITS users may be related to longer stays in the area (see section 4.6 Productivity and Economic Vitality). Twenty percent of the ITS users and 13% percent of ITS non-users indicated a number of "other" activities such as swimming or sun bathing, a whale watching boat cruise, and photography. Interestingly, five percent of the ITS users reported the activity of going to work. These particular ITS users were year-round or summer residents of Mount Desert Island.

Table 4.3.3: Visitor activities inside Acadia National Park and outside the Park

Activity	ITS user	ITS non-user
	---------Percent---------	
Sightseeing	81	76
Going out to eat/entertainment in the village center	80	59
Shopping in village centers	77	57
Hiking on trails	70	62
Walking on carriage roads	41	36
Jordon Pond House food service	37	41
Shopping in Park	36	31
Picnicking	35	24
Biking on carriage roads	29	19
Attend ranger led programs	20	7
Other	20	13
Bird watching	15	10
Biking on motor roads	13	3
Rock climbing	13	8
Sea kayaking	13	10
Lake boating/canoe	12	9
Horse and carriage rides	6	3
Going to work	5	1

Percentages add to more than 100 because visitors could do more than one activity.

Visitors were asked to rate their overall experiences visiting Acadia National Park and surrounding towns on Mount Desert Island. As Figure 4.3.5 shows the vast majority of visitors (80%) rated their overall experiences visiting Acadia National Park and surrounding towns as "very good." Eighteen percent of the visitors rated their overall experiences as "good." Approximately 2% of visitors rated their overall experiences as being "average." Only one visitor rated their overall experiences as being below average. Visitors were also asked to rate their overall travel experiences during the most recent trip. As Figure 4.3.6 shows, again, the majority of visitors (60%) rated their overall travel experiences as "very good" but this is a lower rating as compared to the overall experiences of visiting the Park and surrounding towns. Thirty-four percent of the visitors rated their overall travel experiences as "good." Five percent of visitors rated their travel experiences as being "average." Eight visitors or 1% of the sample rated travel experiences as being "poor" or "very poor" (8 and 1 visitors, respectively). There were no differences detected among visitors identified as ITS users and ITS non-users with the above ratings reported for overall experiences visiting and overall experiences traveling. However, significant differences were detected among visitors identified as ITS users and ITS non-users in terms of both travel issues facing Mount Desert Island and Acadia National Park as well as travel experiences encountered while using their personal vehicle.

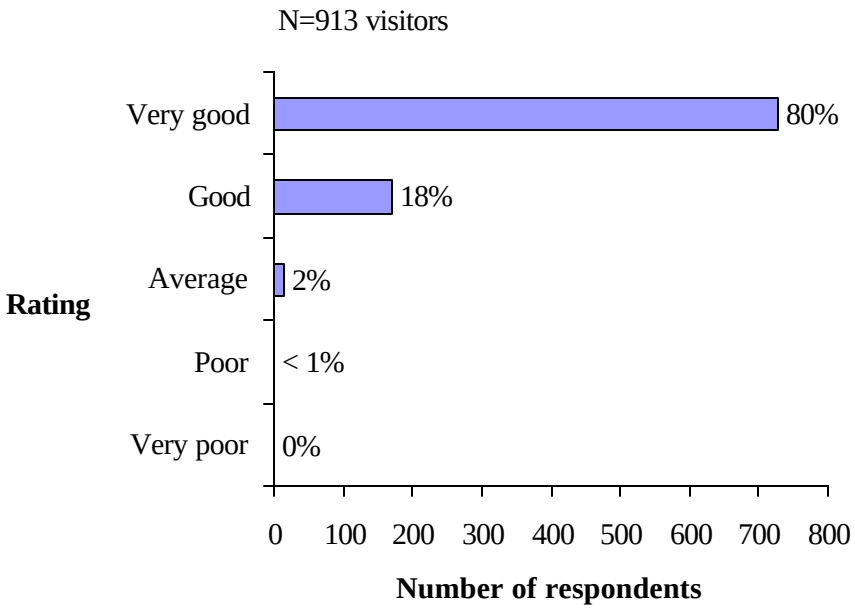


Figure 4.3.5: Overall experience visiting Acadia National Park and surrounding towns

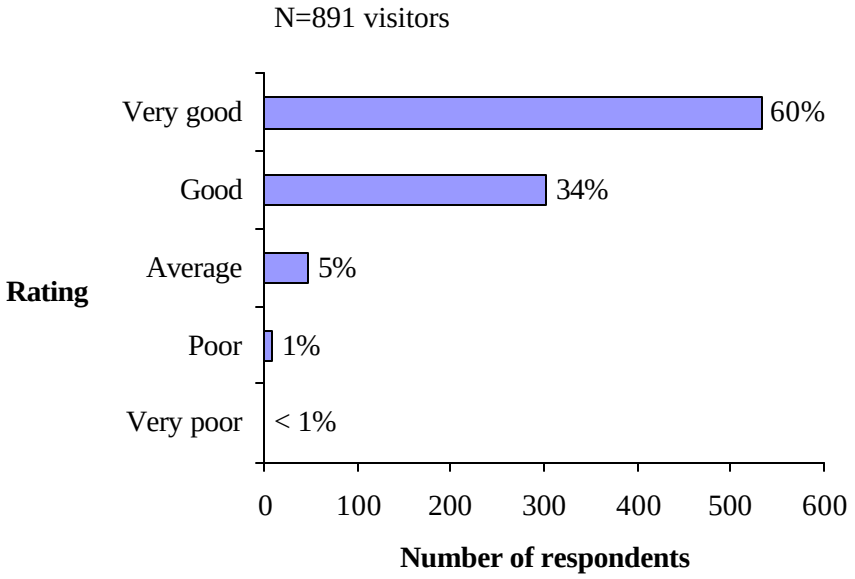


Figure 4.3.6: Overall travel experience during the visitor's most recent visit

Table 4.3.4 shows visitor ratings of problems related to travel on Mount Desert Island and in Acadia National Park. Visitors rated problems differently based upon the combination of ITS components used and if visitors used the Island Explorer bus. Therefore, four distinct visitor groups are displayed in the table below that include three sub-groups of ITS users: (A) visitors who used the traveler information for Island Explorer buses such as the real-time departure of buses but not the availability of parking at Sand Beach and the Jordan Pond House (n=273); (B) visitors who used both traveler information related to Island Explorer buses as well as the availability of parking (n=182); (C) visitors who used parking availability information but no bus traveler information (n=175); and (D) the group of visitors that neither used the parking availability information nor bus (n=279).

The biggest problem reported, regardless of visitor group type, was vehicles parked along main roads causing unsafe conditions (Table 4.3.4). However, ITS users who used the bus or the bus and parking information reported this to be much more of a problem than the ITS users of parking information and ITS non-users. Too many automobiles outside of the Park as well as inside the Park were the second or third ranked most problems reported by all visitor group types. The ITS users who used the bus traveler information differed from ITS users of parking information and ITS non-users in terms of rating this more of the problem. The ITS users who used the bus and parking differed from ITS non-users. Despite ITS non-users reporting this issue as less of a problem as compared to the ITS user groups it was the second ranked problem within this group. Similarly, ITS user groups who used the bus or the bus and parking information reported too many automobiles in the Park more of a problem than ITS users of parking information and ITS non-users. Again, this particular item was ranked second or third in terms of being a problem by all visitor groups.

The recognition of too many automobiles impacting air quality ranked relatively high as compared to other problems related to travel on Mount Desert Island and in Acadia National Park. The ITS user groups who used the bus or the bus and parking information reported automobiles and air quality to be more of a problem than ITS users of parking information and ITS non-users. Too many automobiles in the Park was rated more of a problem than too many RVs or people in the Park. Generally, on one hand, ITS users who used the bus or the bus and parking information reported too many RVs in the Park being more of a problem than too many people. On the other hand, ITS users of parking information and ITS non-users reported too many people in the Park as being more of a problem than too many RVs in the Park. Although a smaller problem in terms of rank order of the travel issues, visitors, regardless of group type, reported that ability to access desired recreation opportunities in the Park was more of a problem as compared to attractions outside of the Park. There were no differences detected among the ITS user groups and the ITS non-users in terms of access to desired recreation opportunities in the Park and attractions outside of the Park. Generally, no problems were reported by visitors, regardless of group type, in seeing electronic signs or too many Island Explorer buses in the Park.

Table 4.3.4. Visitor ratings of problems related to travel on Mount Desert Island and in Acadia National Park.*

	ITS user						ITS non-user			
	Bus (n=273)		Bus & Parking (n=182)		Parking (n=175)		(n=279)		ANOVA	
Issue	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	results	*p*=
	(A)		*(B)*		*(C)*		*(D)*			
Vehicles parked along main roads causing unsafe conditions	2.45	1	2.32	1	1.99	1	2.05	1	A,B>C,D	.0001
Too many automobiles outside of Park.	2.41	2	2.15	4	1.82	3	1.92	2	A>D,C B>C	.0001
Too many automobiles in the Park	2.38	3	2.27	3	1.92	2	1.90	3	A,B>C,D	.0001
Too many automobiles impacting air quality	2.37	4	2.27	2	1.71	4	1.72	5	A,B>C,D	.0001
Too many RVs in the Park	1.99	5	1.84	5	1.62	7	1.67	6	A>C,D	.0001
Too many people in the Park	1.91	6	1.82	6	1.67	5	1.75	4	A>D	.050
Too many tour buses in the Park	1.62	7	1.57	8	1.49	8	1.47	8		
Ability to fully access desired recreation opportunities in the Park	1.55	8	1.61	7	1.65	6	1.51	7		
Ability to access desired attractions outside the Park	1.44	9	1.40	9	1.48	9	1.41	9		
Not enough travel information to plan trips	1.34	10	1.27	10	1.37	10	1.30	10		
Seeing electronic signs	1.24	11	1.13	11	1.22	11	1.23	11		
Too many Island Explorer buses in the Park	1.09	12	1.08	12	1.20	12	1.18	12	C>A,B	.005

* Possible responses: 1 = Not a problem; 2 = Small problem; 3 = Moderate problem; and 4 = Big Problem.

As reported earlier in this section, most visitors reached Mount Desert Island with a car, truck, or motor home/RV. Figure 4.3.7 shows that most visitors (83%) used their vehicles to access the Park or local villages. Visitors who answered "yes" to using their personal vehicle to access the Park or local villages were asked about their travel experiences. Table 4.3.5 shows visitors rated travel experiences differently based upon the combination of ITS components used and if visitors used the Island Explorer bus. The ITS users who used the bus and the parking information and visitors who used only parking information were much more likely to disagree with the statement "I know the area well enough so I don't need travel information" from ITS users who used only the bus and ITS non-users. The same ITS user groups were also much more likely to agree with the statement "more information would have made it easier to get to attractions" as compared to the ITS user group using only the bus traveler information and ITS non-users. The ITS users who used the bus or the bus and parking information were more likely to disagree with the statement "it is easy to avoid traffic congestion in Acadia National Park." It should be noted that these ratings are based on the reported experiences of visitors using their personal vehicles.

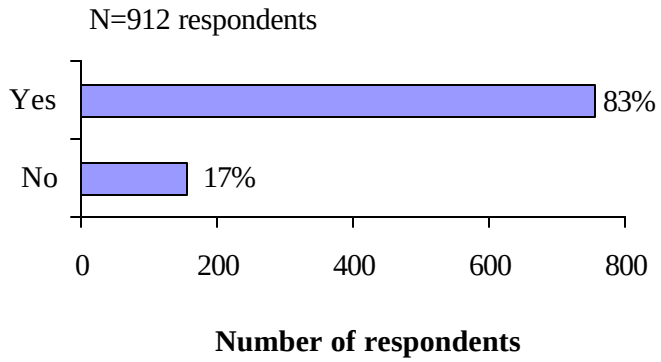


Figure 4.3.7: Visitor use of personal vehicle to access the Park or local villages

The ITS user groups who used the bus and the bus and parking information were more likely to agree with the statement "I had some worry about driving and parking along busy roads" as compared to the ITS users who used only parking information and ITS non-users. The same ITS user groups were also much more likely to disagree with the statement the "it was easy to find parking in Acadia National Park" as compared to the ITS user group using only the parking information and ITS non-users. As might be expected, ITS user groups who used the bus and the bus and parking were more likely to disagree with the statement "Overall, I was pleased with travel conditions on this trip" and "It was easy to plan trips inside Acadia National Park using my personal vehicle." Again, please remember the ratings are based on the reported experiences of the visitor group types when they used their personal vehicles. Finally, it should be noted that all visitor group types who rated "Overall, I was pleased with travel conditions on a previous visit" generally reported stronger levels of agreement as compared to their recent trip.

Table 4.3.5: Visitor ratings of travel experiences using a personal vehicle.*

	ITS user						ITS non-user			
	Bus (n=273)		Bus & Parking (n=182)		Parking (n=175)		(n=279)		ANOVA	
Issue	Mean	Rank	Mean	Rank	Mean	Rank	Mean	Rank	results	*p*=
	(A)		*(B)*		*(C)*		*(D)*			
I know the area well enough so I don't need travel information	3.04	1	3.57	1	3.65	1	3.21	1	B,C>A,D	.0001
More information would have made it easier to get to attractions.	3.02	2	2.69	5	2.83	3	3.03	3	A,D>B,C	.003
It is easy to avoid traffic congestion in Acadia National Park	2.92	3	2.77	3	2.43	4	2.55	4	A>C,D B>C	.0001
I had some worry about driving and parking along busy roads	2.85	4	2.84	2	3.24	2	3.37	2	C,D>A,B	.0001
It is easy to find parking in Acadia National Park	2.85	5	2.77	4	2.31	5	2.42	5	A,B>C,D	.0001
Overall, I was pleased with travel conditions on this trip	2.40	6	2.37	6	2.00	6	2.03	6	A,B>C,D	.0001
It was easy to plan trips inside Acadia National Park using personal vehicle	2.30	7	2.26	7	1.88	7	1.90	7	A,B>C,D	.0001
Overall, I was pleased with travel conditions on a previous visit	1.30	8	.89	8	.82	8	1.09	8	A>B,C	.002

* Possible responses: 1 = Strongly agree; 2 = Agree; 3 = Neutral; 4 = Disagree; and 5 = Strongly Disagree

Visitors who answered "yes" to using their personal vehicle to access the Park or local villages were asked if they encountered parking problems and traffic congestion in Acadia National Park. Figure 4.3.8 shows that forty-two percent of visitors encountered parking problems using a personal vehicle in Acadia National Park. The visitors identified as ITS users differed significantly from ITS non-users in terms of encountering parking problems in the Park. The ITS users who reported using personal vehicles had higher reports of encountering parking problems (45%) than ITS non-users (36%) who reported using personal vehicles (X^2 = 6.375, 1 df, P = .012). Most visitors who encountered parking problems (68%) reported parking some distance away and walking to their intended destination (Table 4.3.6). However, thirty-eight percent of the visitors who encountered parking problems reported going to an alternative destination. Thirty-six percent of visitors waited until a parking spot opened near their intended destination. Direct observation of the parking conditions at Sand Beach and the Jordan Pond House revealed that some visitors would repeatedly drive around in the parking lots when they became full.

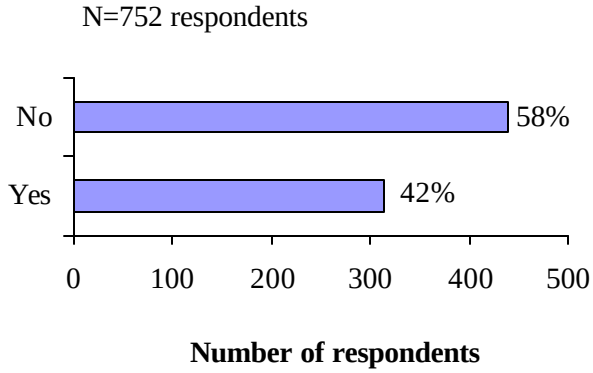


Figure 4.3.8: Visitors that encountered parking problems using a personal vehicle in Acadia National Park

Table 4.3.6: Visitor responses to parking problems using a personal vehicle in Acadia National Park.

N= 311 visitors

Response	Distribution
	---percent---
Parked some distance away from intended destination and walked	68
Went to an alternate destination	38
Waited until a parking spot opened near intended destination	36

Percentages add to more than 100 because some visitors reported more than one response.

Visitors reported various times of the day when they first encountered parking problems in the Park (Figure 4.3.9). However, the peak periods of the time of day that a visitor encountered parking problems were late morning and early afternoon. Twenty-three percent of the visitors reported first encountering parking problems at 11:00 a.m. and 20% reported 1:00 p.m. Approximately 88% of the visitors encountered parking problems in the Park between 10:00 a.m. and 2:00 p.m. The reported times of parking problems by visitors corroborate with the direct observations of the parking conditions at Sand Beach and the Jordan Pond House.

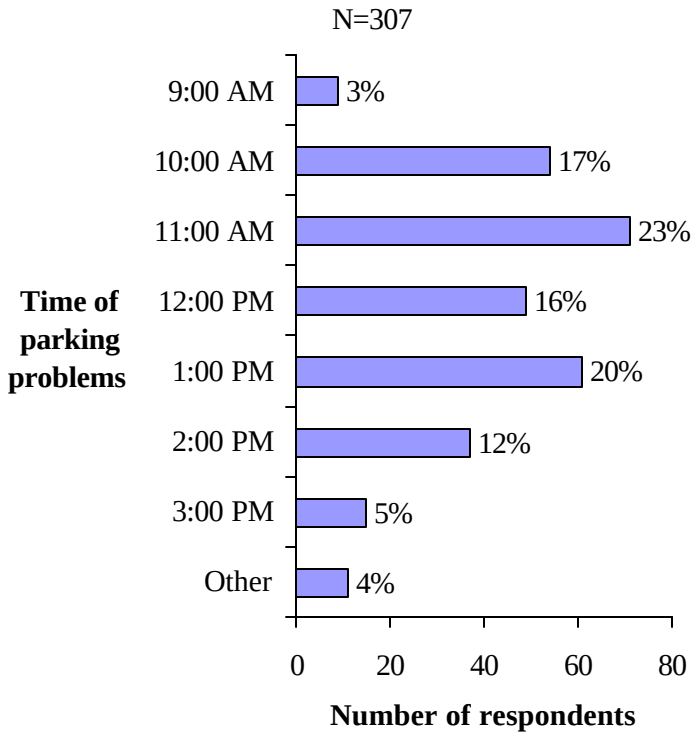


Figure 4.3.9: Times of day when visitors first encountered parking problems

Figure 4.3.10 shows that thirty-four percent of visitors encountered traffic congestion using a personal vehicle in Acadia National Park. No differences were detected among visitors identified as ITS users and ITS non-users in terms of encountering parking problems in the Park. Most visitors who encountered traffic congestion (78%) reported waiting to get to their intended destination (Table 4.3.7). However, thirty-three percent of the visitors who encountered traffic congestion reported going to an alternative destination.

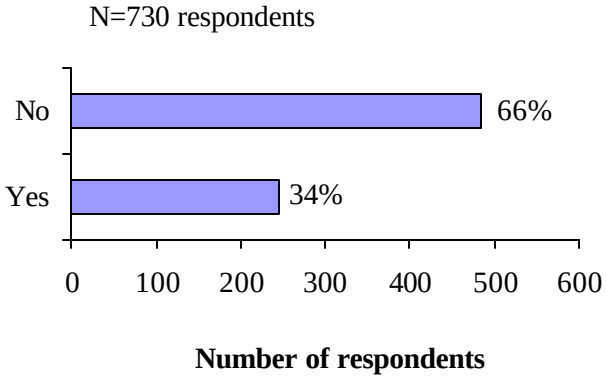


Figure 4.3.10: Visitors that encountered traffic congestion while using a personal vehicle in Acadia National Park

Table 4.3.7: Visitor responses to traffic congestion using a personal vehicle in Acadia National Park.

N= 244 visitors

Response	Distribution
	---percent---
Waited to get to my intended destination	78
Went to an alternate destination	33

Percentages add to more than 100 because some visitors reported more than one response.

Visitors reported various times of the day when they first encountered traffic congestion in the Park (Figure 4.3.11). However, the peak period of the time of day that a visitor encountered parking problems was late morning. Twenty-six percent of the visitors reported first encountering traffic problems at 11:00 a.m. Approximately 64% of the visitors encountered traffic congestion in the Park between 10:00 a.m. and 12:00 p.m. The reported times of traffic congestion by visitors corroborate with the direct observations of the parking conditions at Sand Beach and the Jordan Pond House.

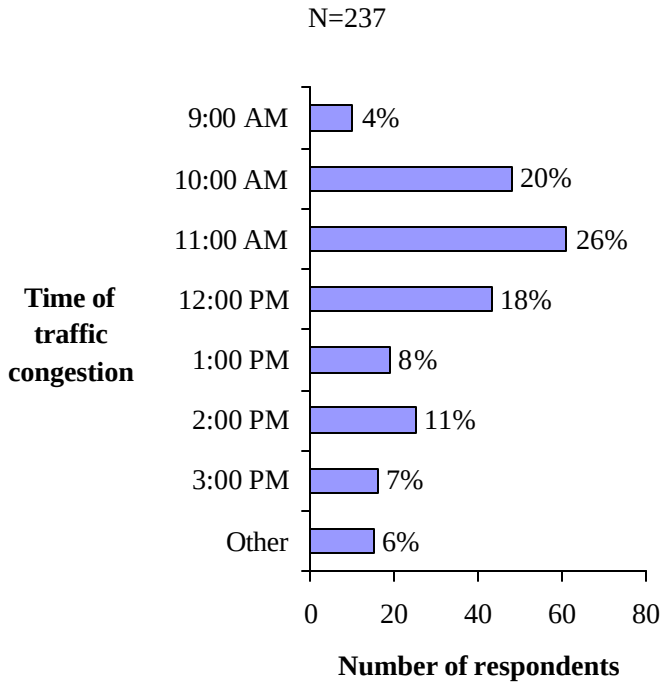


Figure 4.3.11: Times of day when visitors first encountered parking problems

4.4 Customer Satisfaction

The majority of visitors in this evaluation of the Field Operational Test of Acadia National Park reported overall high quality visitor experiences regardless of using or not using one or more of the deployed ITS components (see section 4.3 visit and travel characteristics). Ninety-eight percent of the visitors rated their overall experiences visiting Acadia National Park and surrounding towns on Mount Desert Island as "very good" or "good" (80% and 18%, respectively). These findings might have been expected since 96% of visitors rated the overall quality of visitor services at Acadia National Park as "very good" or "good" in a 1998 study of visitors (Littlejohn 1999)[11]. Similarly, ninety-seven percent of visitors rated experiences of riding the Island Explorer bus as "very good" or "good" in a 1999 study of Island Explorer bus passengers (Daigle and Lee 2000)[12]. However, as reported in previous sections of this report, overall rating of travel experiences were not as high as the overall rating of visitor experiences for visitors. Visitors differed in terms of their attitudes about travel issues on Mount Desert Island and in Acadia National Park. Also, visitors differed in terms of their travel experiences using a personal vehicle in Acadia National Park. Visitors identified as using one or more of the ITS components generally had more concern about travel issues on Mount Desert Island and in Acadia National Park and also tended to encounter more parking problems when they reported using their personal vehicle in Acadia National Park. The remainder of this report describes the ITS users of the traveler information system involving the real-time parking conditions, automated annunciator, and electronic departure sign for the Island Explorer bus and the relationship of the technologies to the visitor's travel experience.

Figure 4.4.1 shows thirty-seven percent of visitors obtained parking condition or traffic information. Visitors who answered "yes" to obtaining parking conditions or traffic information at the Acadia National Park visitor center, campgrounds, or website were asked to rate questions that could be used to assess customer satisfaction such as how accurate and helpful the information was to the visitor and if they would use the information again. These aspects were assessed by asking visitors to evaluate several items on a 5-point scale with endpoints labeled as strongly agree and strongly disagree. Figures 4.4.2 - 4.3.7 show user's evaluation of the traveler information system involving the real-time parking conditions.

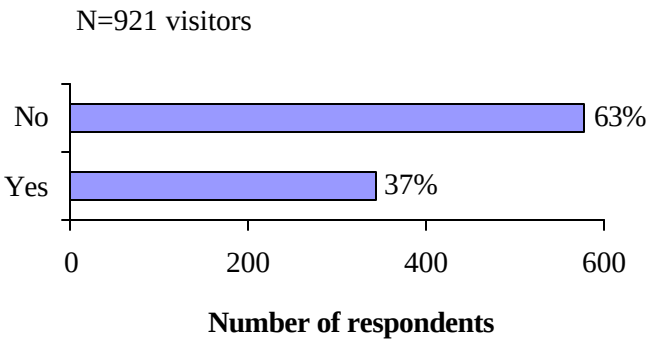


Figure 4.4.1: Visitors who obtained parking conditions or traffic information at the Acadia National Park visitor center, campgrounds, or website.

[11] Littlejohn, M. 1999. Acadia National Park Visitor Study: Summer 1998. Report 108 Visitor Services Project. Cooperative Park Studies Unit, University of Idaho. 108 p.
[12] Daigle, John J. and Byung-Kyu Lee. 2000. Passenger Characteristics and Experiences with the Island Explorer Bus: Summer 1999. Technical Report 00-15. Department of Interior, National Park Service, New England System Support Office. 76 p.

Figure 4.4.2 shows a high level of agreement among users that the parking conditions or traffic information was accurate. Eighty-six percent of the users "strongly agreed" or "agreed" with the statement "I found the information to be accurate." Nine percent of users neither agreed nor disagreed with the accuracy of the information. Five percent of users disagreed that the parking or traffic information was accurate. Figure 4.4.3 shows that 93% of the users could clearly understand the parking or traffic information. Only three percent of the users reported that they did not clearly understand the information. Nearly all visitors (91%) rated the parking condition or traffic information was easy to use (Figure 4.4.4). Only a few of the users (2%) thought that the information was not easy to use.

A relatively high proportion of users (62%) thought that the parking conditions or traffic conditions helped to relieve tension and stress related to travel (Figure 4.4.5). Twenty-seven percent of the users "strongly agreed" that it helped to relieve tension and stress related to travel. However, roughly the same proportion of users (29%) was uncertain the information helped to relieve tension and stress related to travel. Eight percent of the users disagreed that the information helped to relieve tension and stress related to travel.

There were generally high levels of agreement that users would use this type of traveler information in the future. Figure 4.4.6 shows eighty-eight percent of the users "strongly agreed" or "agreed" with the statement "I would plan to use this information if visiting in the next 12 months" (39% and 39%, respectively). Figure 4.4.7 shows eighty-one percent of the users "strongly agreed" or "agreed" with the statement "Using this source of information in the future would be a pleasant experience." In contrast, only 7% of the users disagreed they would plan to use the information again and 3% disagreed using the information in the future would be a pleasant experience. There was some level of uncertainty with 14% of the users on planning to use the information again.

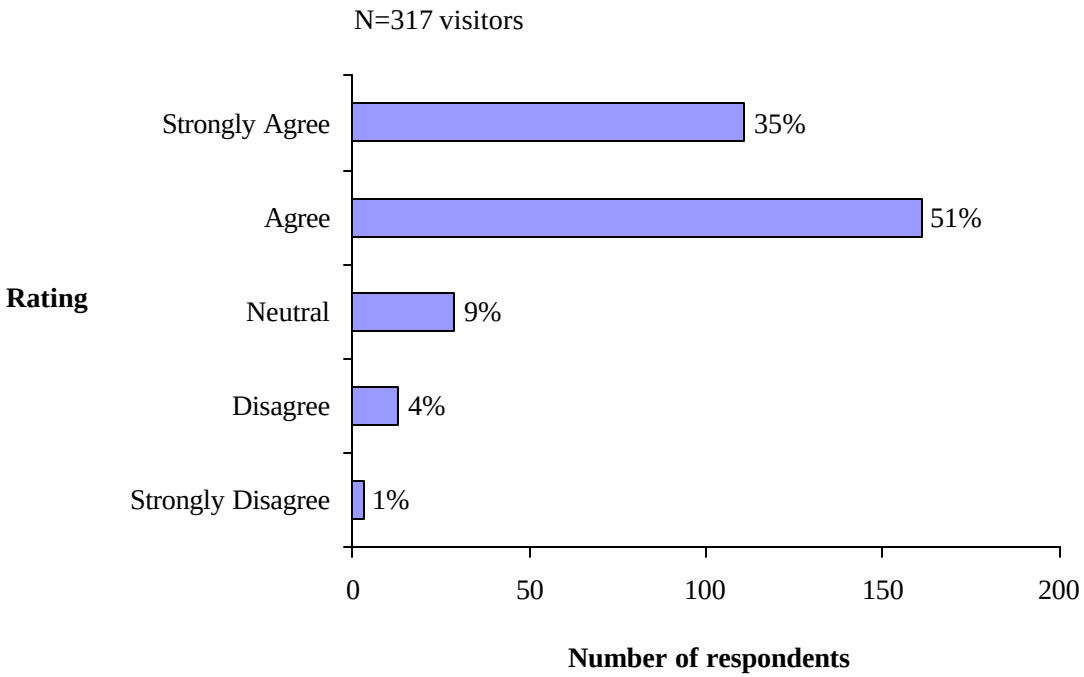


Figure 4.4.2: Parking conditions information was accurate

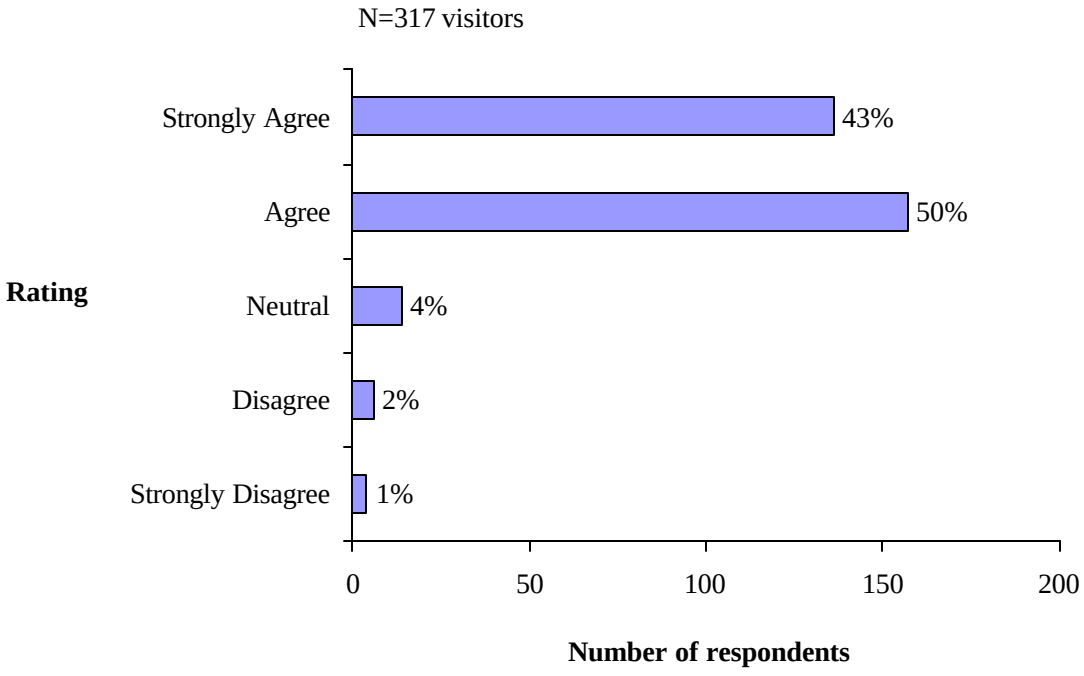


Figure 4.4.3: Parking conditions information was clearly understandable

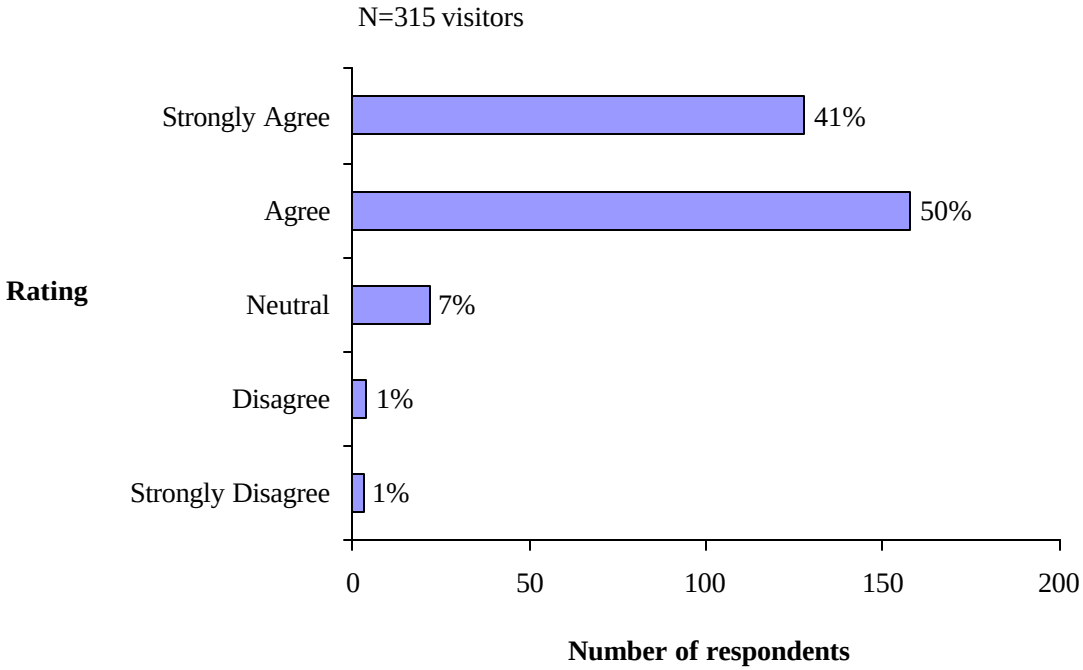


Figure 4.4.4: Parking conditions information was easy to use

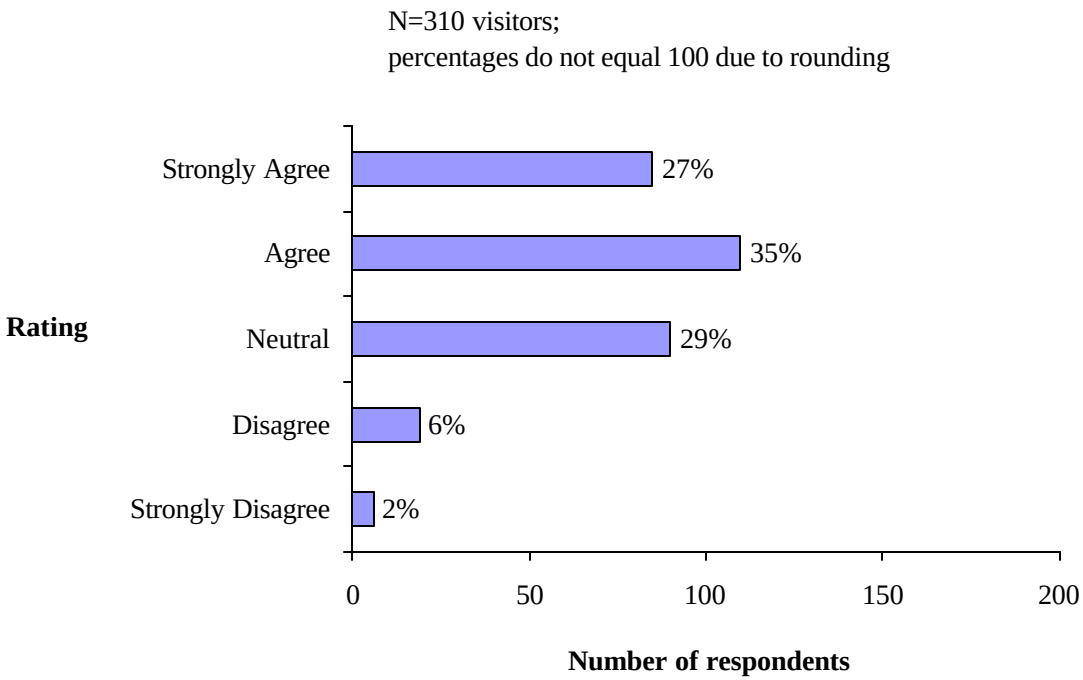


Figure 4.4.5: Parking conditions information helped to reduce tension and stress related to traveling

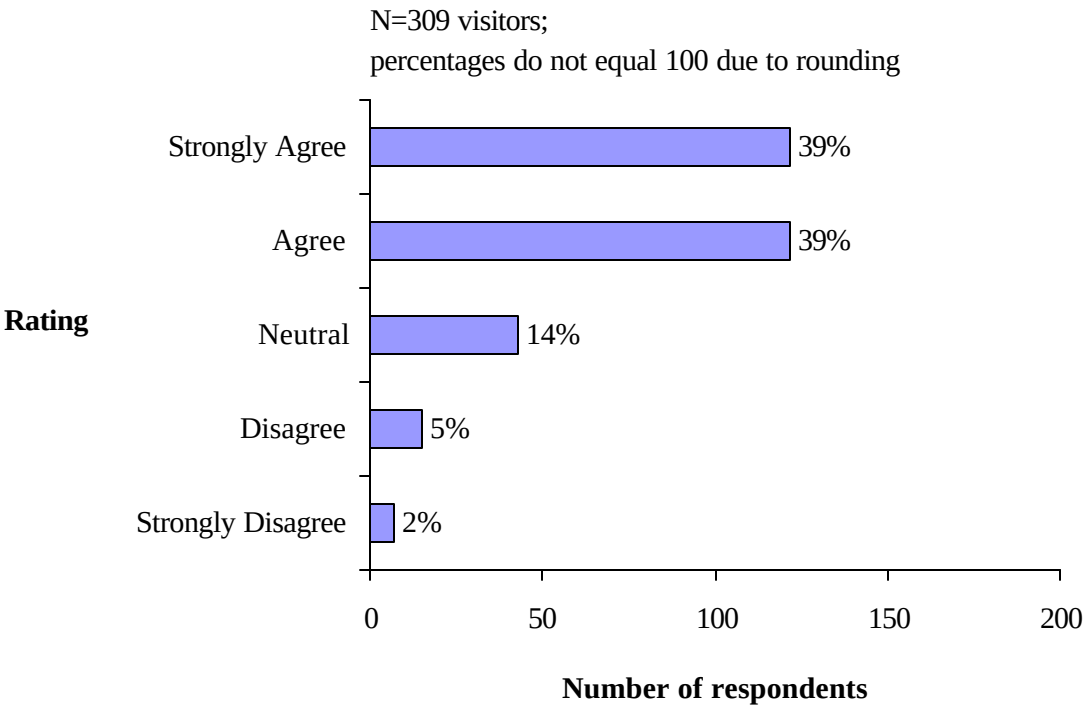


Figure 4.4.6: Plan to use the parking conditions information again

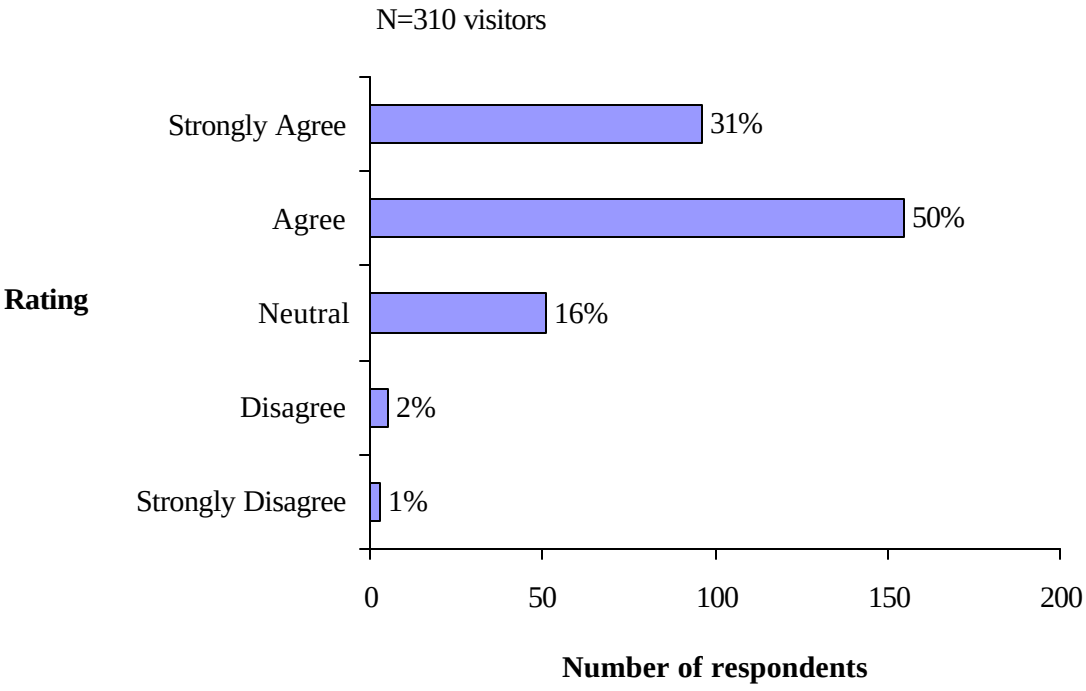


Figure 4.4.7: Future use of the parking conditions information would be a pleasant experience

Figure 4.4.8 shows that half of the visitors that were sampled and agreed to receive and complete the traveler survey reported using the Island Explorer bus and the associated travel-related information. As described above in this report the ITS travel-related information involved an automated annunciator for the Island Explorer bus that transmitted an audio message and displayed the next bus stop. Also, electronic signs displayed real-time departures of the next Island Explorer bus at the Visitor Center and Jordan Pond House bus stops in Acadia National Park and the Village Green in Bar Harbor located outside of the Park.

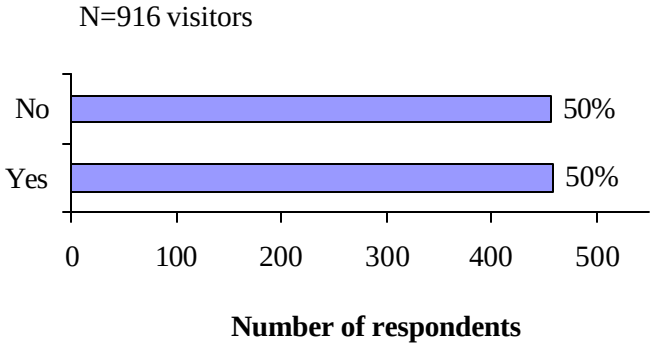


Figure 4.4.8 Visitors who used the Island Explorer bus and traveler-related information during their most recent visit

Visitors who answered "yes" to using the Island Explorer bus and travel-related information during their recent visit were asked to assess how accurate and helpful the information was to the visitor. These aspects were assessed by asking visitors to evaluate several items on a 5-point scale with endpoints labeled as strongly agree and strongly disagree. Figures 4.4.9 - 4.3.14 show user's evaluation of the traveler information system involving real time bus departure displays.

Figure 4.4.9 shows a high level of agreement among users (96%) that the real-time bus departure information was accurate. Sixty-three percent of users rated "strongly agree" with the statement "I found the information to be accurate." Visitors reported similar ratings on how easy it was to read the information displayed on signs. Figure 4.4.10 shows that 94% of the users rated "strongly agree" or "agree" with the statement "Information displayed was easy for me to read." Four percent of users were uncertain about the information being easy to read. One percent of the users rated "disagree" with the real time information being accurate or easy to read. Most users (94%) rated the real time information easy to use (Figure 4.4.11). Four percent of users were uncertain and 2% of users rated "disagree" with the real time information being easy to use.

A high proportion of users (85%) thought that the real time information helped to relieve uncertainty about when the bus would get to the bus stop (Figure 4.4.12). Over half of the users (51%) rated "strongly agree" that it helped to relieve uncertainty when the bus would arrive. Eleven percent of users were uncertain and 3% rated "disagree" and 1% "strongly disagree" that the information helped to relieve uncertainty when the bus would arrive at the bus stop.

Figure 4.4.13 shows 92% of the users "strongly agreed" or "agreed" with the statement "I would plan to use this information if visiting in the next 12 months" (66% and 26%, respectively). Figure 4.4.14 shows 92% of the users "strongly agreed" or "agreed" with the statement "Using this source of information in the future would be a pleasant experience" (58% and 34%, respectively). In contrast, only 2% of the users disagreed they would plan to use the information again and 1% disagreed using the information in the future would be a pleasant experience.

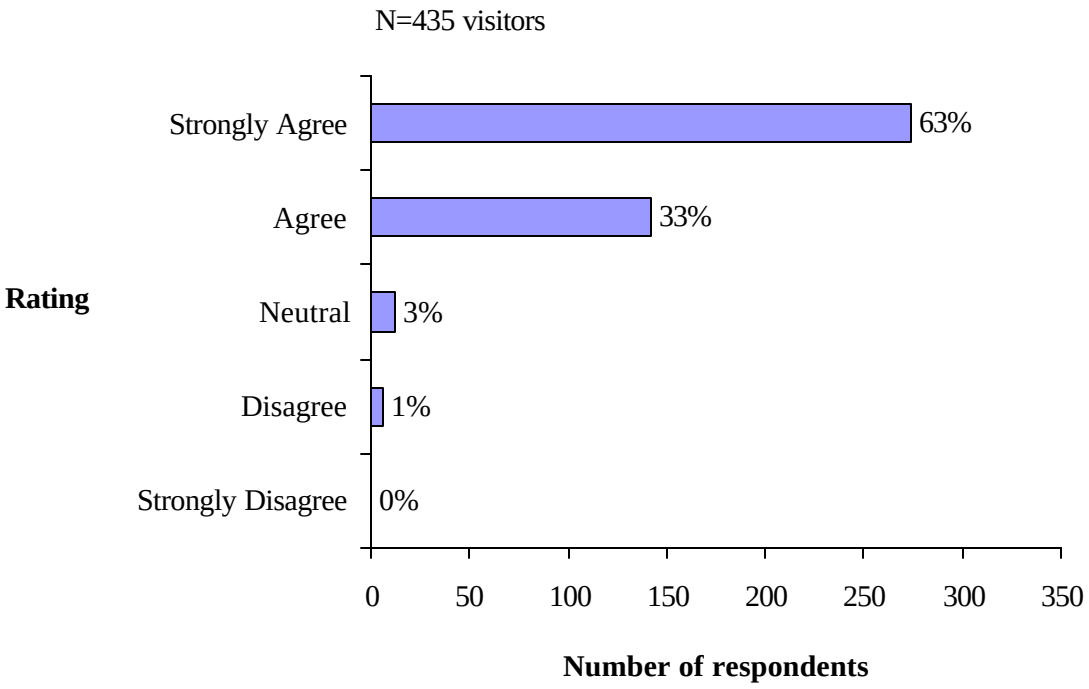


Figure 4.4.9: Real time bus departure display was accurate

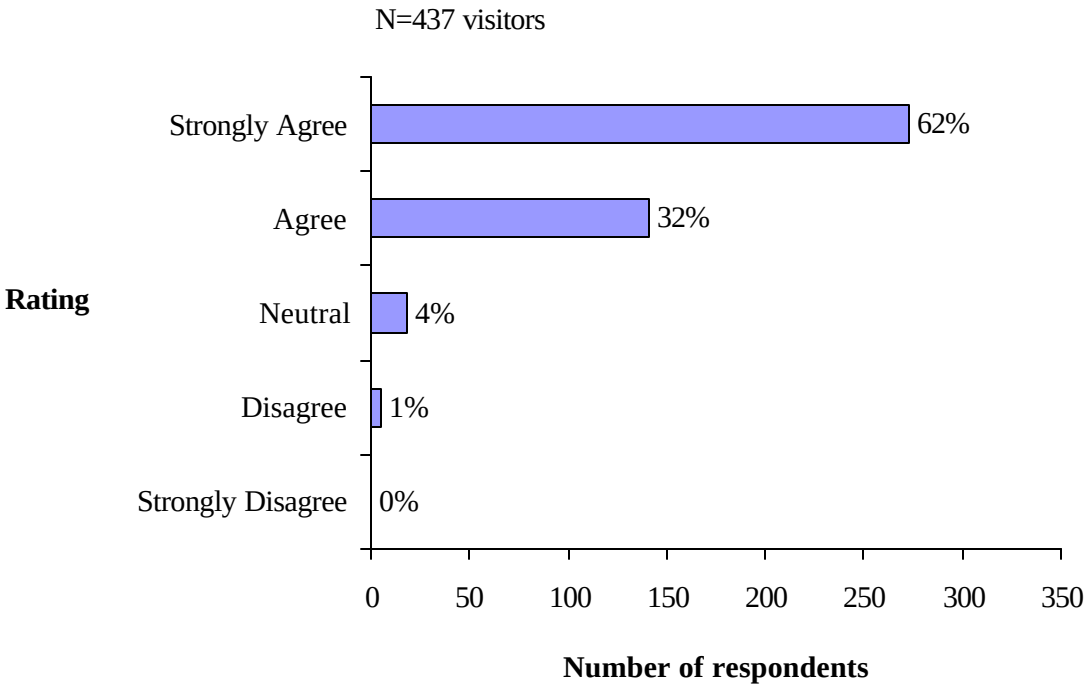


Figure 4.4.10: Real time bus departure display was easy to read

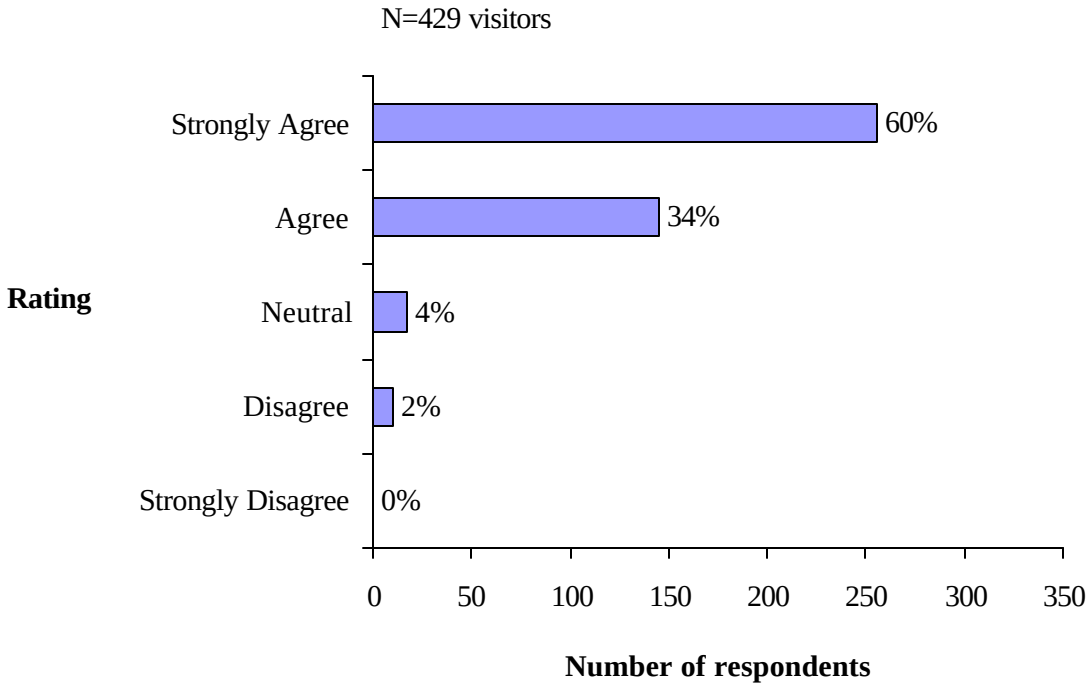


Figure 4.4.11: Real time bus departure sign was easy to use

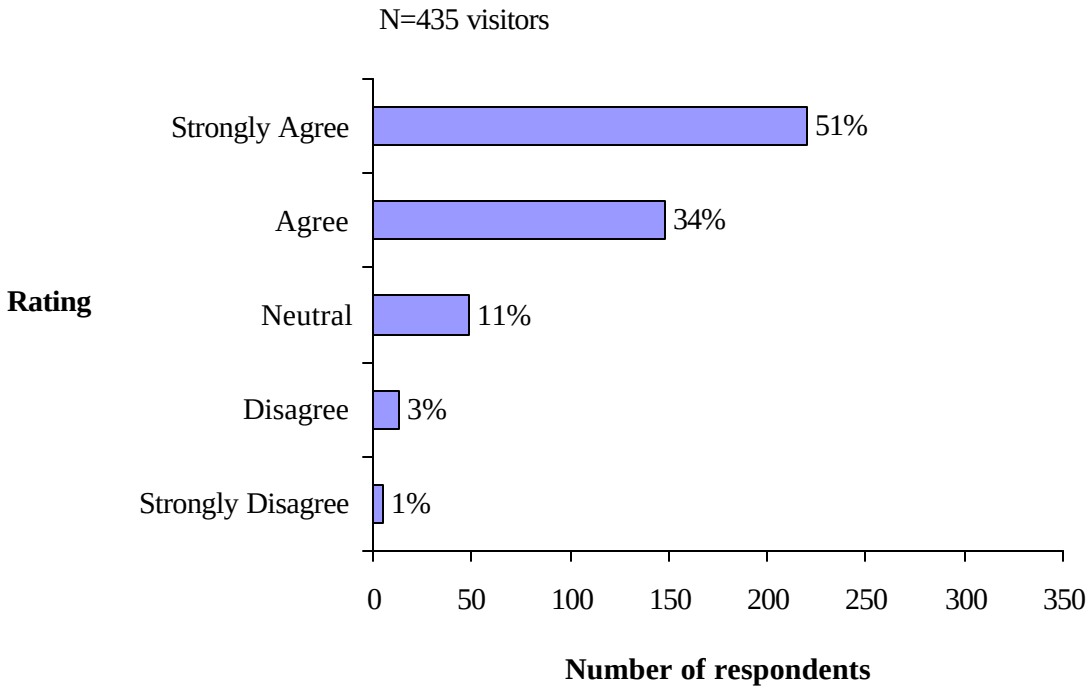


Figure 4.4.12: Real time bus departure sign relieved uncertainty when the bus would arrive

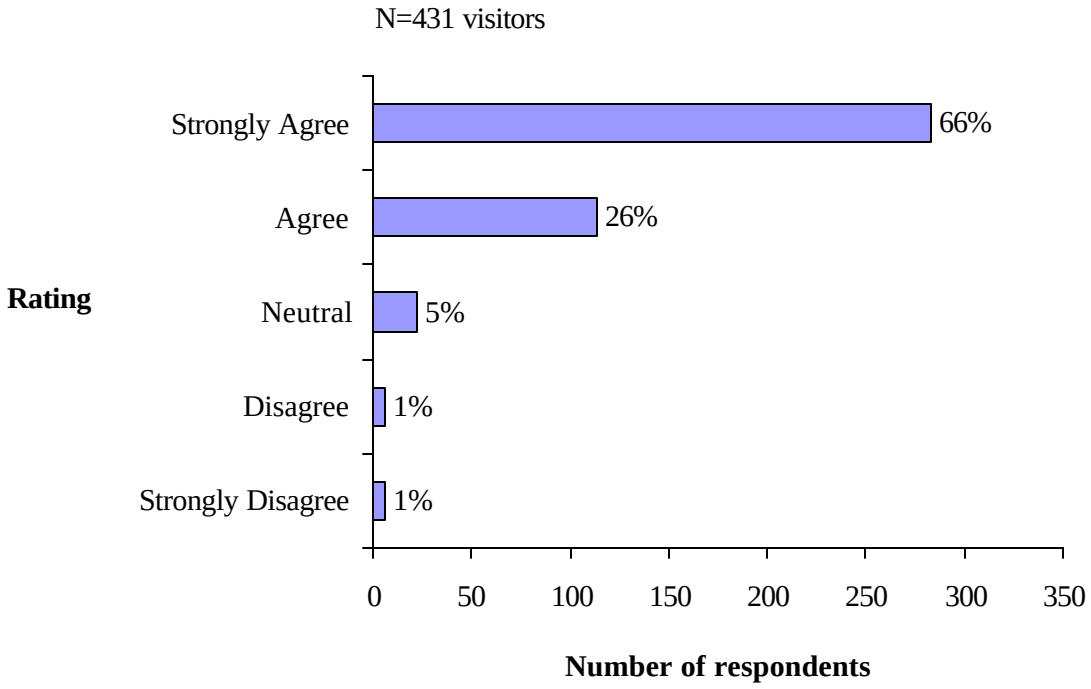


Figure 4.4.13: Plan to use the real time bus departure sign again

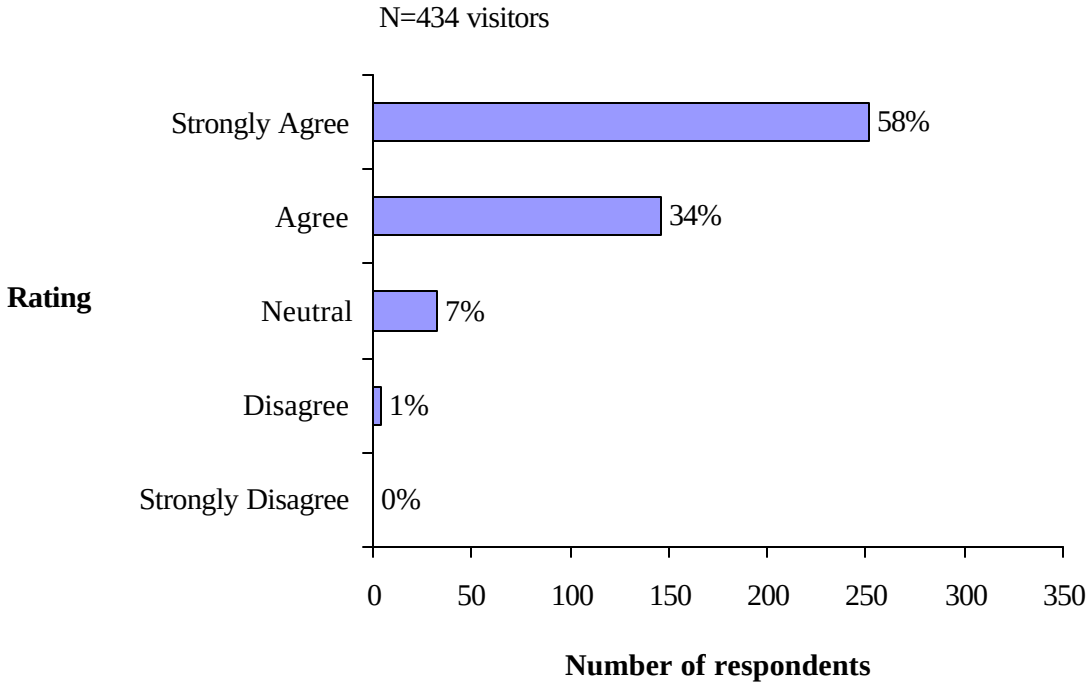


Figure 4.4.14: Future use of the real time bus departure sign would be a pleasant experience

Figures 4.4.15 - 4.4.24 show user's evaluation of the traveler information system involving the bus on-board announcements. Figure 4.4.15 shows a high level of agreement among users (95%) that the bus on-board information was accurate. Sixty-two percent of users rated "strongly agree" with the statement "I found the information to be accurate." Visitors reported similar ratings on how easy it was to read the bus stops displayed on signs on-board the bus. Figure 4.4.16 shows that 92% of the users rated "strongly agree" or "agree" with the statement "Information displayed was easy for me to read." Seven percent of users were uncertain about the information being easy to read. Most users (93%) rated the real time information easy to use (Figure 4.4.17). Six percent of users were uncertain with the announcements being easy to use. One percent of the users rated "disagree" with the bus on-board announcements being easy to read or use.

Figure 4.4.18 shows that 93% of the users thought the bus on-board information was clear and understandable. Most users (95%) reported the volume of the announcements were loud enough to hear (Figure 4.4.19). One percent of the users rated "disagree" with the volume being loud enough to hear. Figure 4.4.20 shows that 94% of the users thought the announcements were made early enough for them to exit the bus when needed. Two percent of the users rated "disagree" with announcements being made early enough for them to exit the bus when needed.

A relatively high proportion of users (81%) thought that the bus on-board announcements relieved uncertainty about when they would arrive at their bus stop (Figure 4.4.21). A slightly higher proportion (89%) thought that the announcements relieved uncertainty about when to exit the bus (Figure 4.4.22). Over half of the users (52%) rated "strongly agree" that it helped to relieve uncertainty when to exit the bus. Four percent of users rated "disagree" or "strongly disagree" that the information helped to relieve uncertainty when the bus would arrive at their bus stop or exit the bus.

Finally, figure 4.4.23 shows 88% of the users "strongly agreed" or "agreed" with the statement "I would plan to use this information if visiting in the next 12 months" (57% and 31%, respectively). Figure 4.4.24 shows 87% of the users "strongly agreed" or "agreed" with the statement "Using this source of information in the future would be a pleasant experience" (52% and 35%, respectively). In contrast, 3% of the users disagreed and 1% strongly disagreed they would plan to use the information and future use would be a pleasant experience. Twelve percent of the users were uncertain if they would plan to use this information if visiting in the next twelve months.

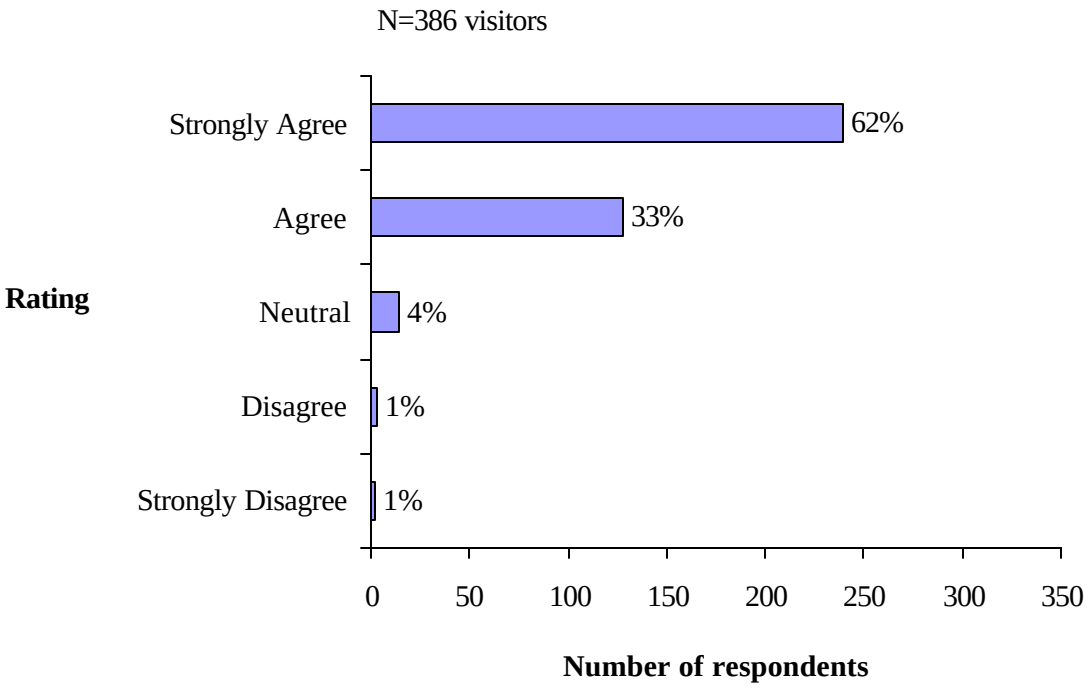


Figure 4.4.15: Bus on-board announcements were accurate

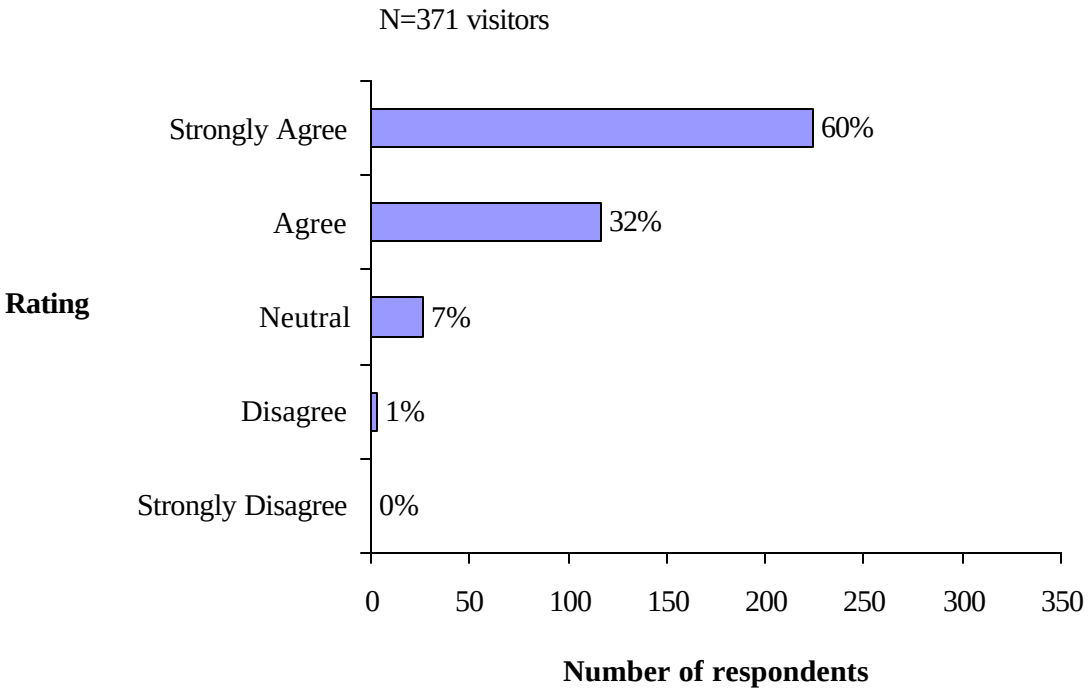


Figure 4.4.16: Bus on-board announcements were easy to re ad

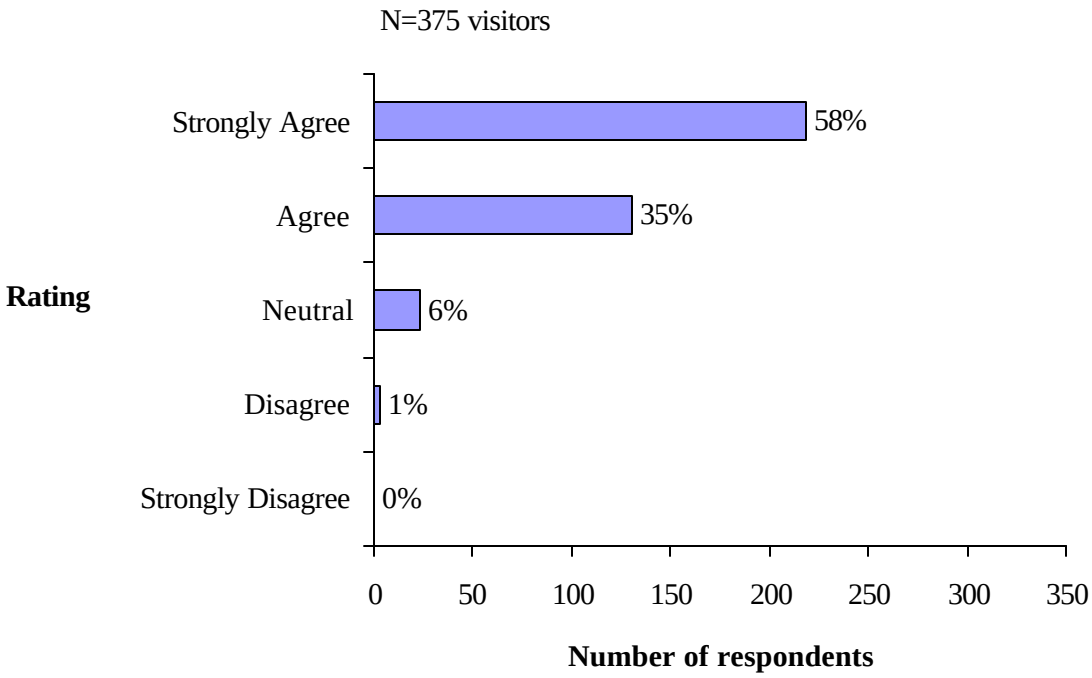


Figure 4.4.17: Bus on-board announcements were easy to use

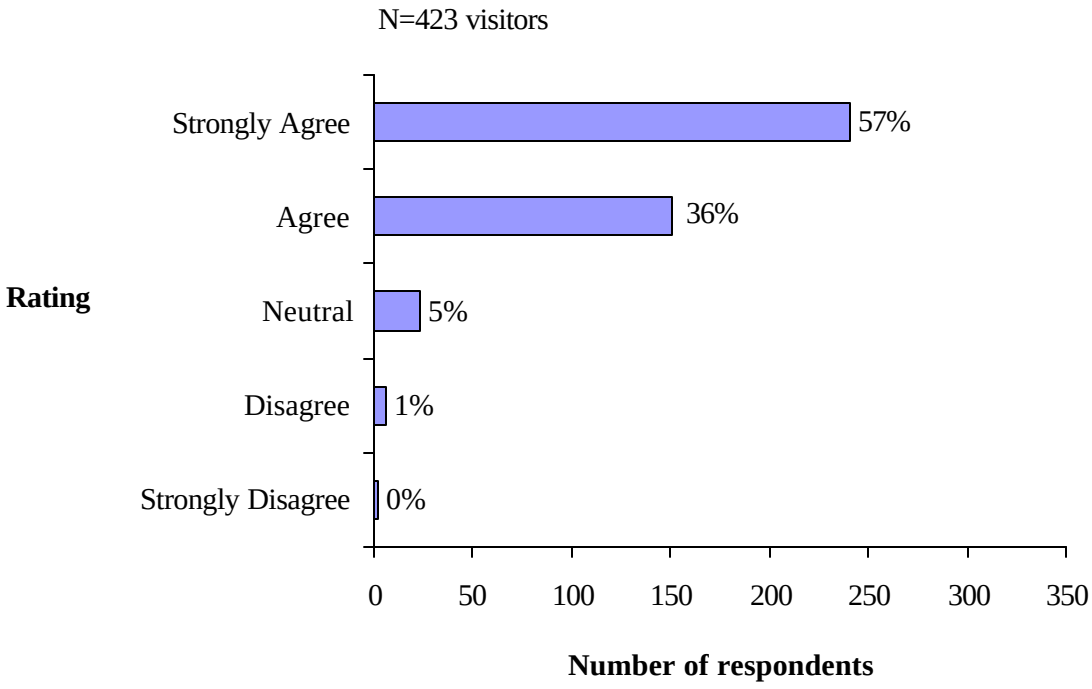


Figure 4.4.18: Bus on-board announcements were clear and understandable

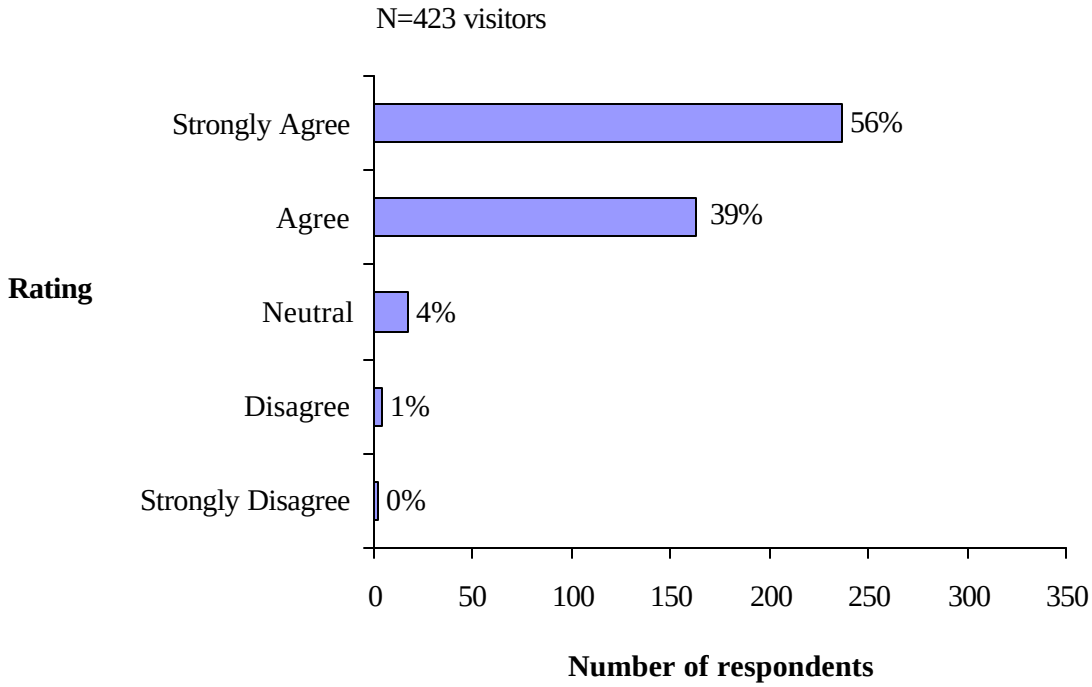


Figure 4.4.19: Bus on-board announcements were loud enough to hear

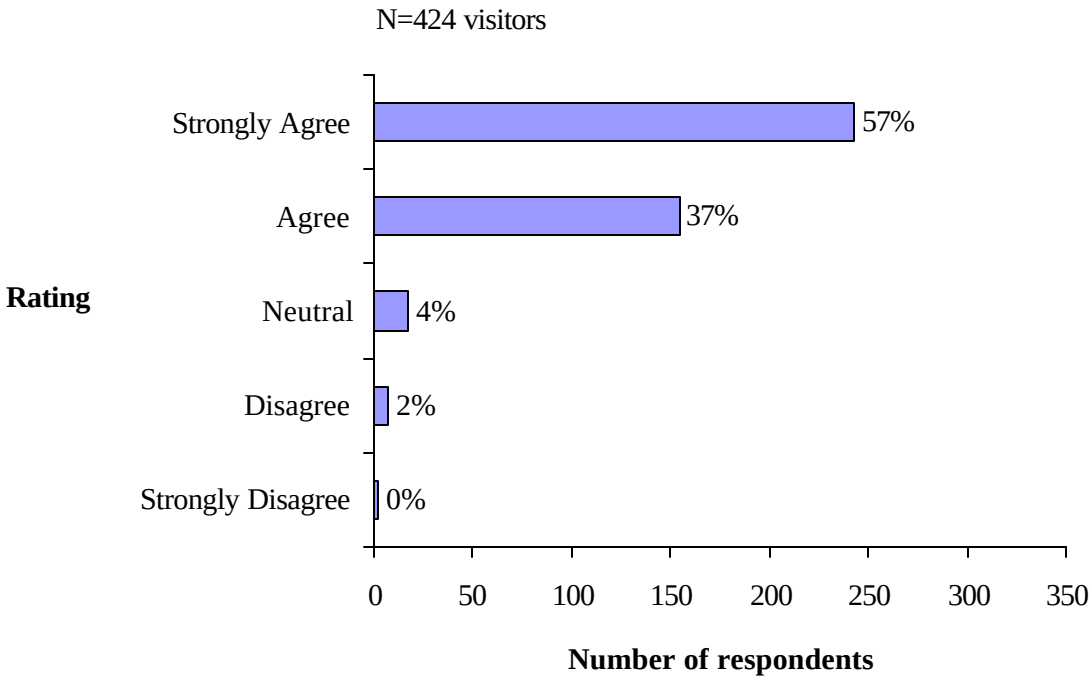


Figure: 4.4.20: Bus on-board announcements were made early enough to exit the bus when needed

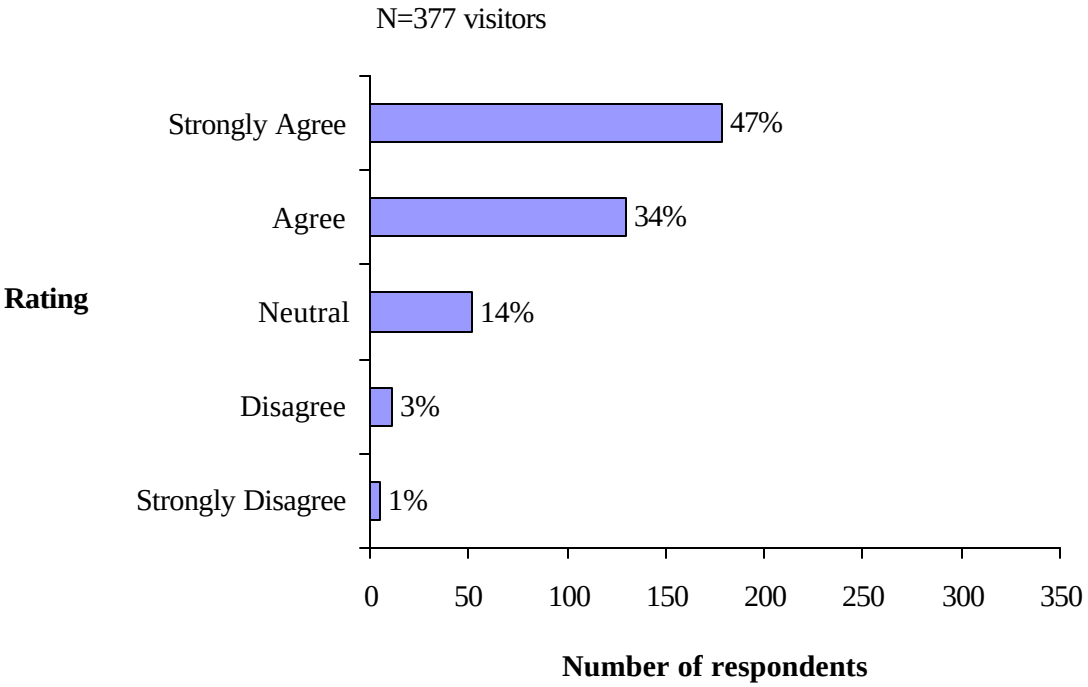


Figure 4.4.21: Bus on-board announcements helped to relieve uncertainty about when the bus would arrive at my stop

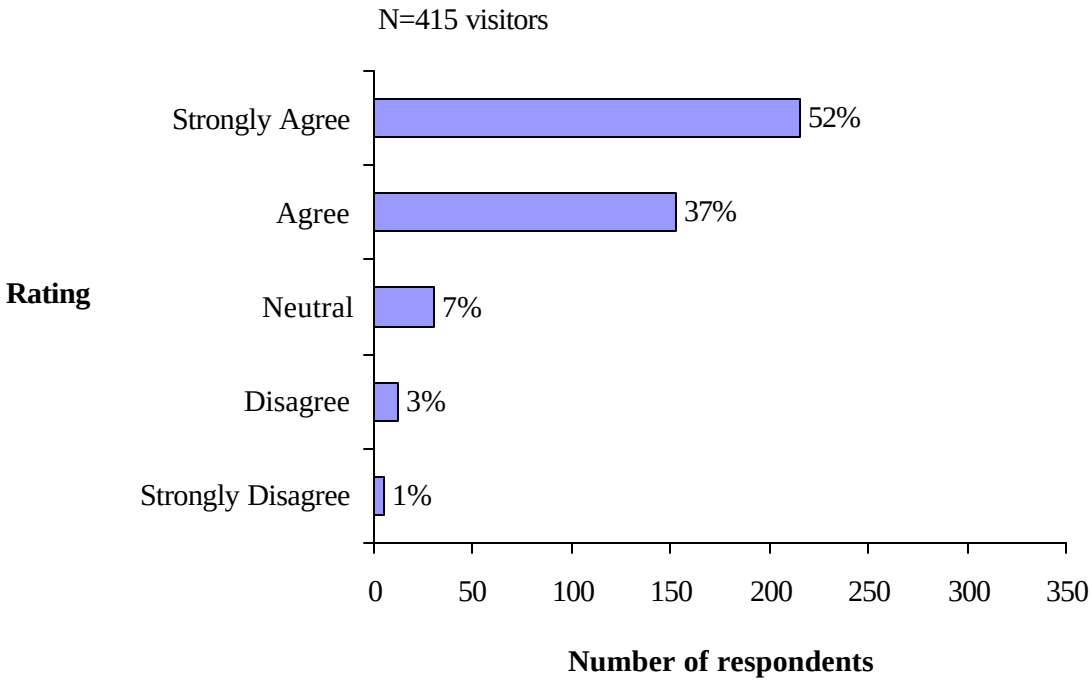


Figure 4.4.22: Bus on-board announcements helped to relieve uncertainty about when to exit the bus

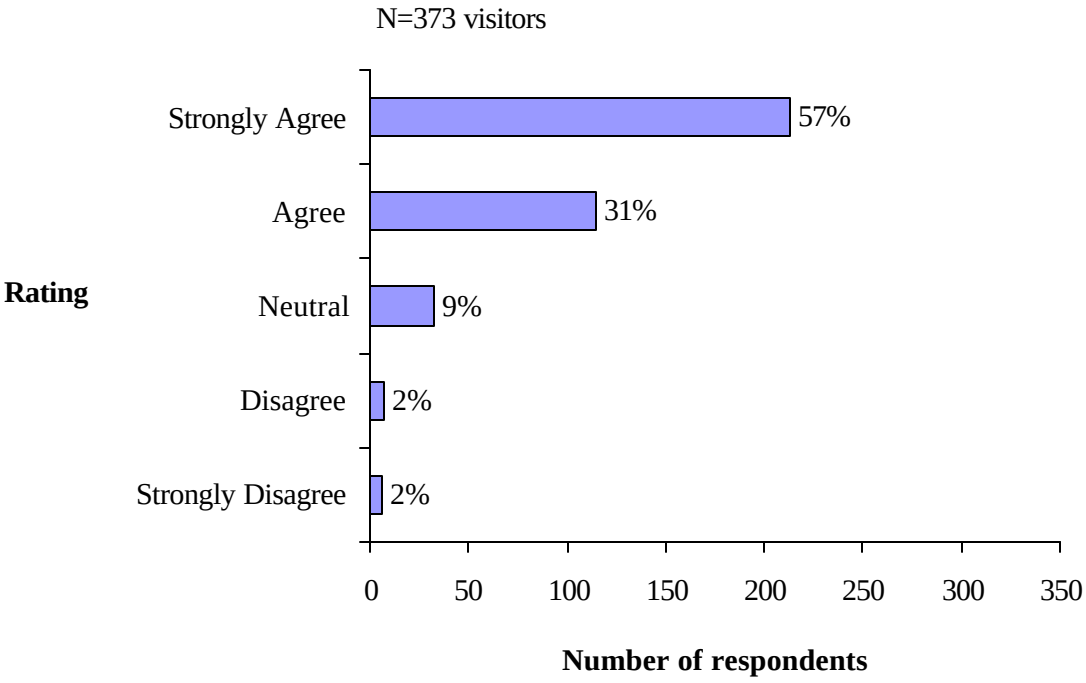


Figure 4.4.23: Plan to use the bus on-board announcements again

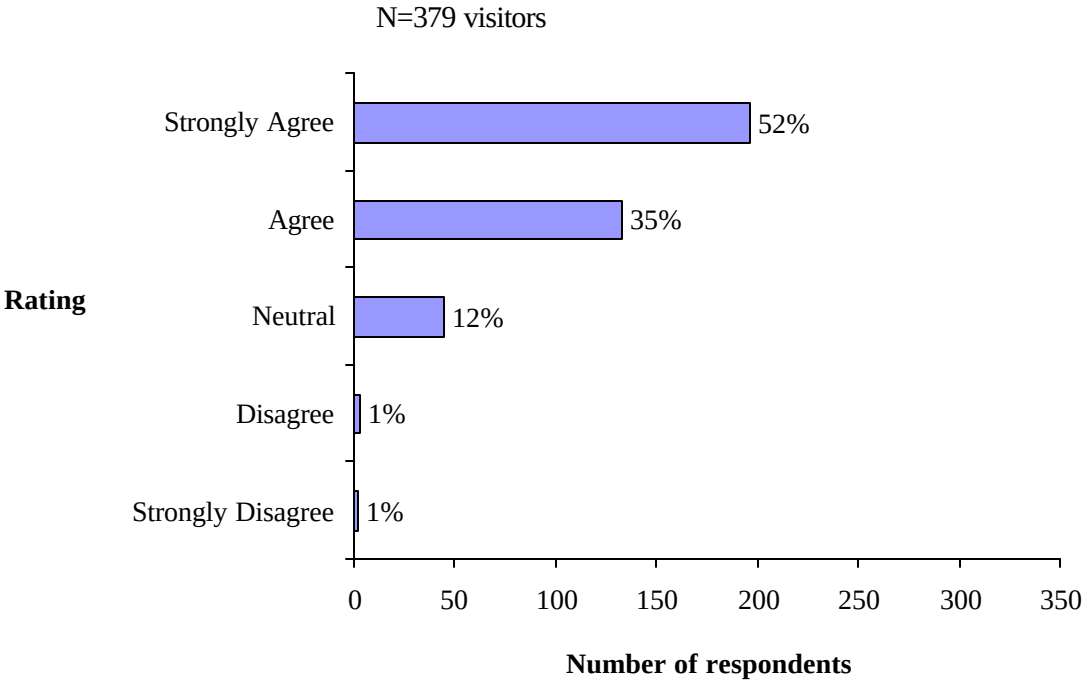


Figure 4.4.24: Future use of bus on-board announcements would be a pleasant experience

Finally, in terms of safety, visitors rated a number of problems related to travel on Mount Desert Island and in Acadia National Park (see section 4.3 visit and travel characteristics). As depicted in Table 4.3.4 visitor concern about "vehicles parked along main roads causing unsafe conditions" ranked number one for all visitor group types. Figure 4.4.25 shows the visitor rating with 36% of all visitors reporting a "moderate" or "big" problem of vehicles parked along main roads causing unsafe conditions. Thirty-three percent of the visitors rated this a "small problem." Twenty percent of the visitors did not think there was a problem with vehicles parked along main roads causing unsafe conditions. As depicted in Table 4.3.4 it should be noted that certain visitor groups such as the ITS users of the bus and the bus and parking information rated this as more of a problem than the ITS users of parking information or ITS non-users. The perceived unsafe conditions may have influenced visitors to seek out and use traveler information. As reported in above, there were relatively high levels of agreement for users (67%) with the statement of the "parking conditions information helped to reduce tension and stress related to traveling." Also, as reported in the 4.5 Mobility section of this report, ninety percent of the ITS bus users and use of the travel information involving the real time bus departure signs agreed with the statement "I was able to get around the area easier with the information."

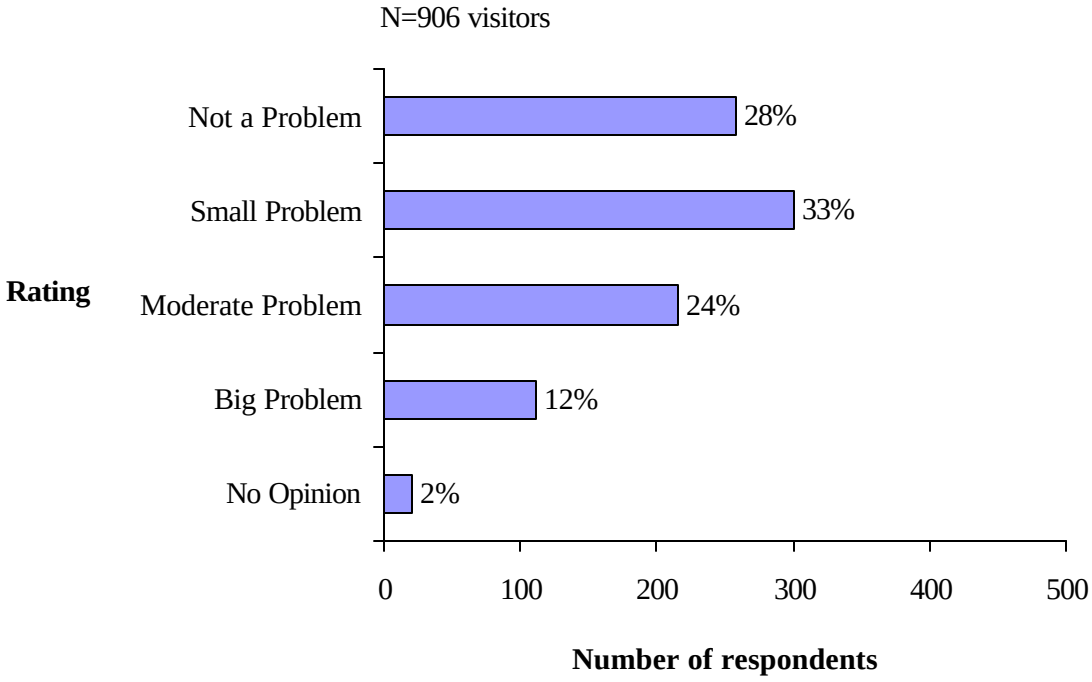


Figure 4.4.25: Visitor rating of vehicles parked along the main roads causing unsafe conditions

4.5 Mobility

As reported in Figure 4.4.1 thirty-seven percent of respondents obtained parking condition or traffic information. As described above this traveler information was available on the Acadia National Park web page and displayed on signs at the Visitor Center, Blackwoods Campground, and Seawall Campground. Visitors who answered "yes" to obtaining parking conditions or traffic information at the Acadia National Park visitor center, campgrounds, or website were asked to rate questions that could be used to assess mobility in terms of information helping users to avoid parking and traffic congestion, avoiding large crowds, and making it easier to get around. Figures 4.5.1 - 4.5.4 show user's evaluation of the traveler information system involving the real time parking information.

A relatively high proportion of users (66%) thought that the real time parking information did help to avoid parking problems (Figure 4.5.1). Twenty-seven percent of the users were uncertain as to whether the information helped to avoid parking. There was more uncertainty among users (35%) in believing the parking information helped to avoid traffic congestion (Figure 4.5.2). However, fifty-seven percent of users "strongly agreed" or "agreed" that the parking information helped to avoid traffic congestion. Seven percent of users did not think the parking information helped in avoiding parking problems or traffic congestion.

Less than half of the users (47%) thought the real time parking information helped to avoid large crowds (Figure 4.5.3). The most frequently rated response was "neutral" by users (41 percent). Eleven percent of users disagreed and 1% of users strongly disagreed the information helped to avoid large crowds. It should be noted that parking condition information was given for two of the most popular destinations in Acadia National Park: Sand Beach and the Jordan Pond House. However, there are several other very popular destinations such as Cadillac Mountain. Visitors may have experienced large crowds at other destinations regardless of the status of parking conditions reported at Sand Beach and the Jordan Pond House.

Nearly three out of four users (74%) agreed that the real time parking information made it easier for them to get around despite having lower agreement ratings for the parking information helping to avoid parking problems (66%), traffic congestion (57%), and large crowds (47%). Figure 4.5.4 shows that users rated 31% "strongly agree" and 43% "agree" with the statement "It was easier to get around with the information." Twenty-two percent of the users were unsure the information made it easier to get around. Four percent of the users disagreed that the parking information made it easier for them to get around.

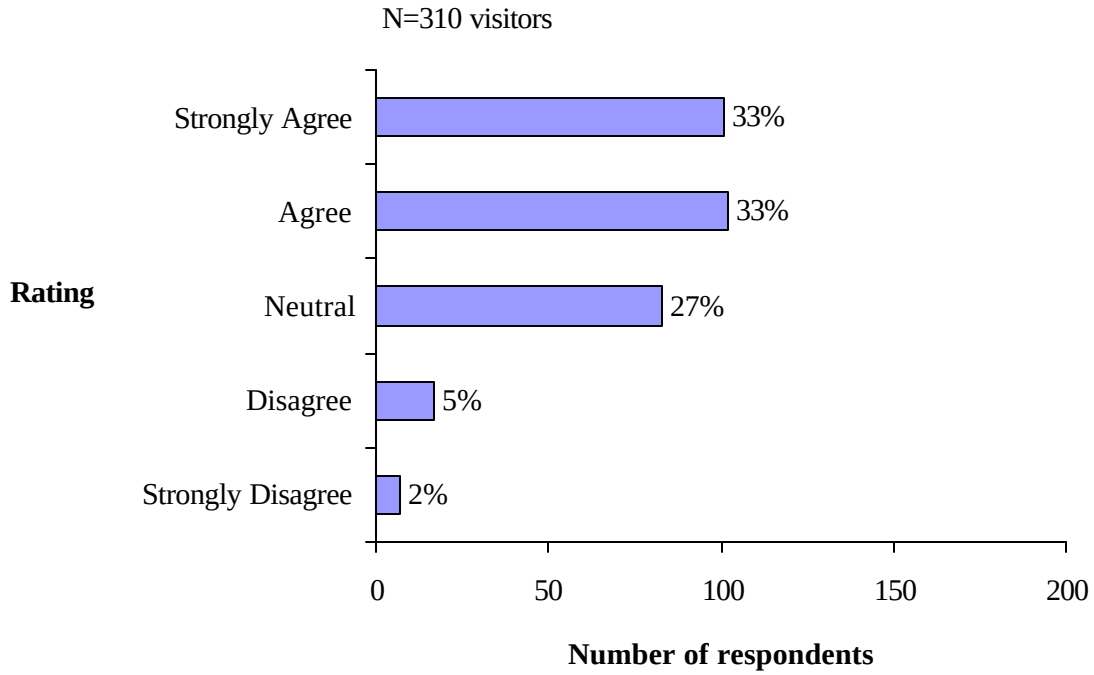


Figure 4.5.1: Parking conditions information helped to avoid parking problems

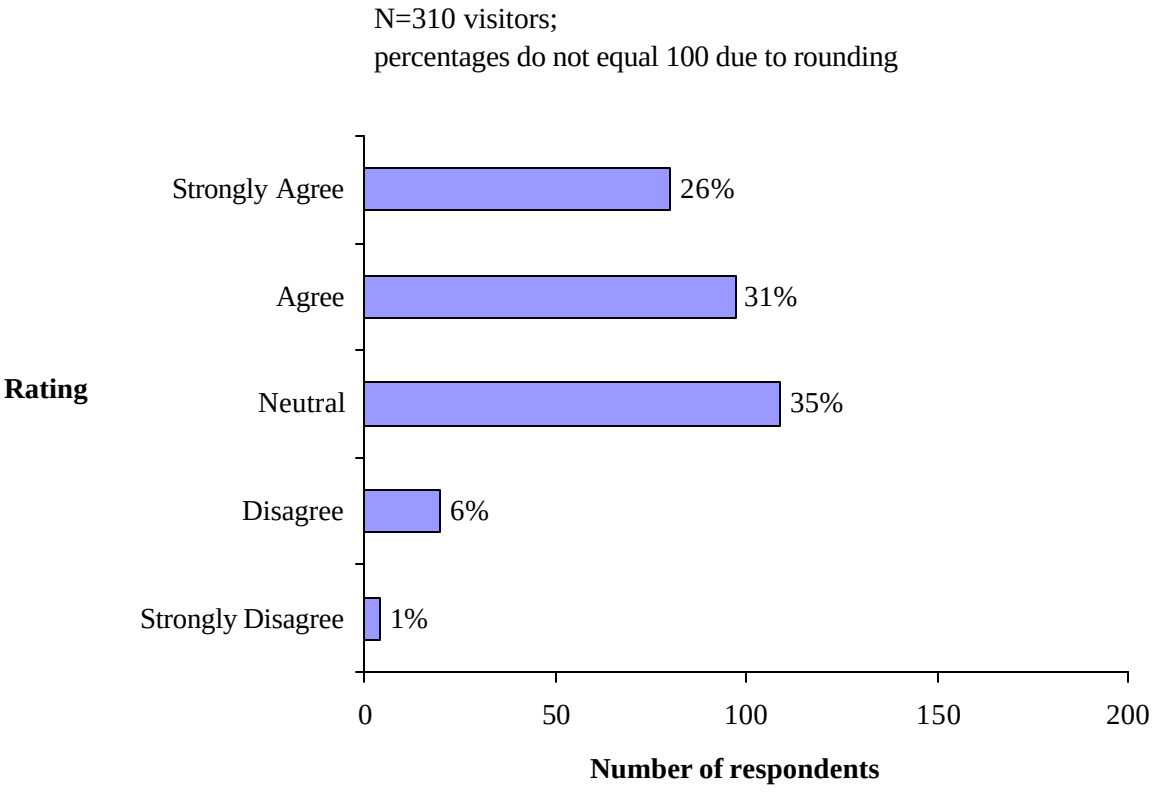


Figure 4.5.2: Parking conditions information helped to avoid traffic congestion

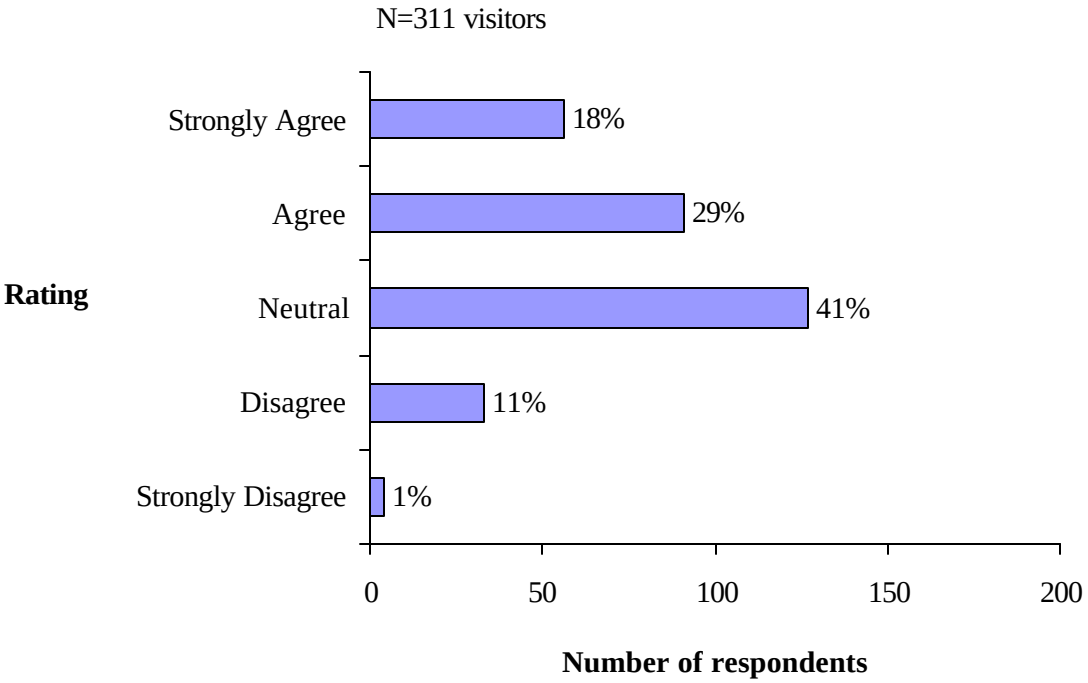


Figure 4.5.3: Parking conditions information helped to avoid large crowds

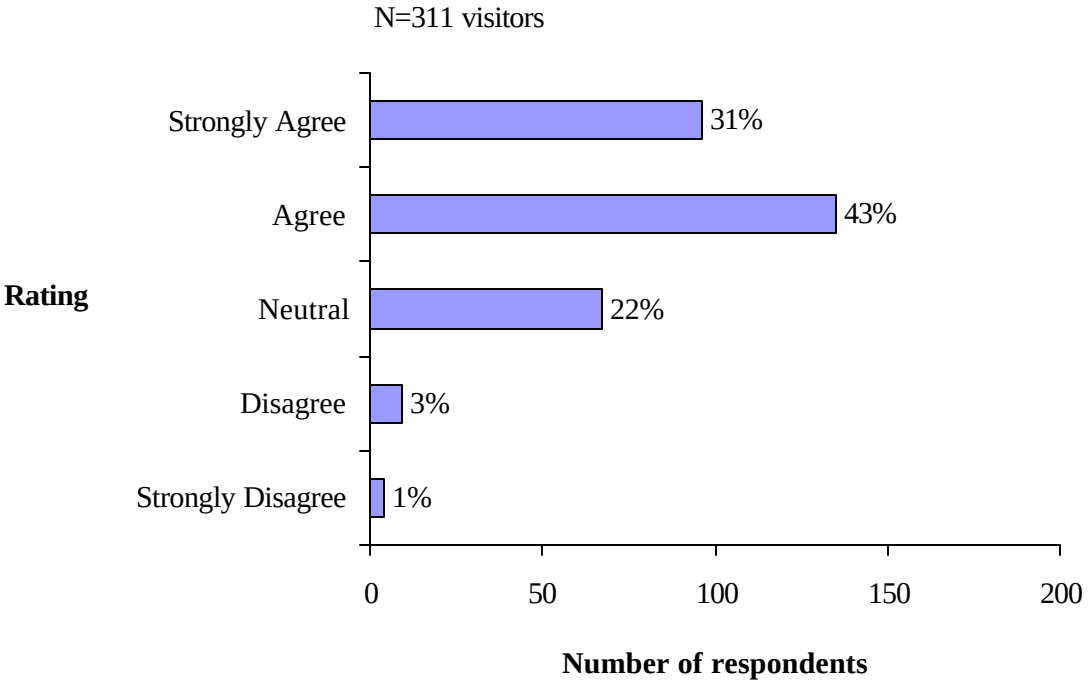


Figure 4.5.4: Parking conditions information made it easier for me to get around the area

Visitors who answered "yes" to using the Island Explorer bus and travel-related information during their recent visit were asked to rate two questions that could be used to assess mobility in terms of information making it easier to get around. Figures 4.5.5 - 4.5.6 show users' evaluation of the traveler information system involving the real time bus departure displays and the on-board announcements.

Figure 4.5.5 shows a very high percentage of the bus users (90%) that agreed the real time bus departure displays made it easier for them to get around the area. Fifty-eight percent of the bus users rated "strongly agree" that the real time bus displays made it easier for them to get around the area. In contrast 3% of bus users rated "disagree" or "strongly disagree." Approximately 8% of the bus users were unsure the real time bus departure displays made it easier to get around.

A high proportion of bus users (84%) agreed that the bus announcements made it easier for them to get around the area (Figure 4.5.6). Half of the bus users (50%) rated "strongly agree" that the information made it easier for them to get around the area. Three percent of bus users rated "disagree." Slightly more of bus users (12%) were uncertain that the bus announcements made it easier to get around.

Caution should be used in drawing conclusions about the real time bus departure displays and the on-board announcements with the reported ease of getting around the area. Daigle and Lee's 1999 study of the Island Explorer bus passengers identifies user reports of increased ease of travel in getting around the area. Answers above may reflect to some degree visitor's use of the Island Explorer bus as compared to the traveler information. Figure 4.5.7 shows the number of visitors that used the Island Explorer bus in previous summers. Eighteen percent of the visitors reported using the bus in previous summers. Please note this figure includes all visitors and regardless of Island Explorer bus use reported during the summer of 2002. However, nearly 91% of the users of the Island Explorer bus in previous summers reported using the bus during the summer of 2002. Figure 4.5.8 shows that 76% of the prior users reported using the Island Explorer bus during the summer of 2001. Interestingly, many prior users reported using the Island Explorer bus for multiple summers. Twenty percent of the prior users reported using the Island Explorer bus during the 1999, 2000, and 2001 summers.

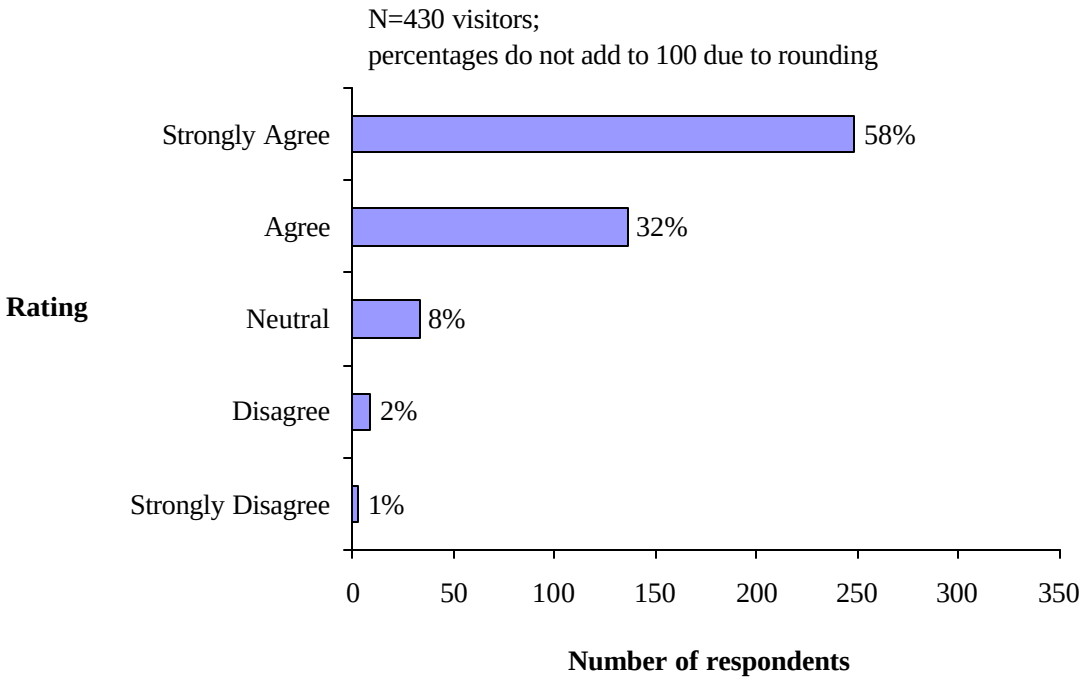


Figure 4.5.5: Real time bus departure displays made it easier for me to get around the area

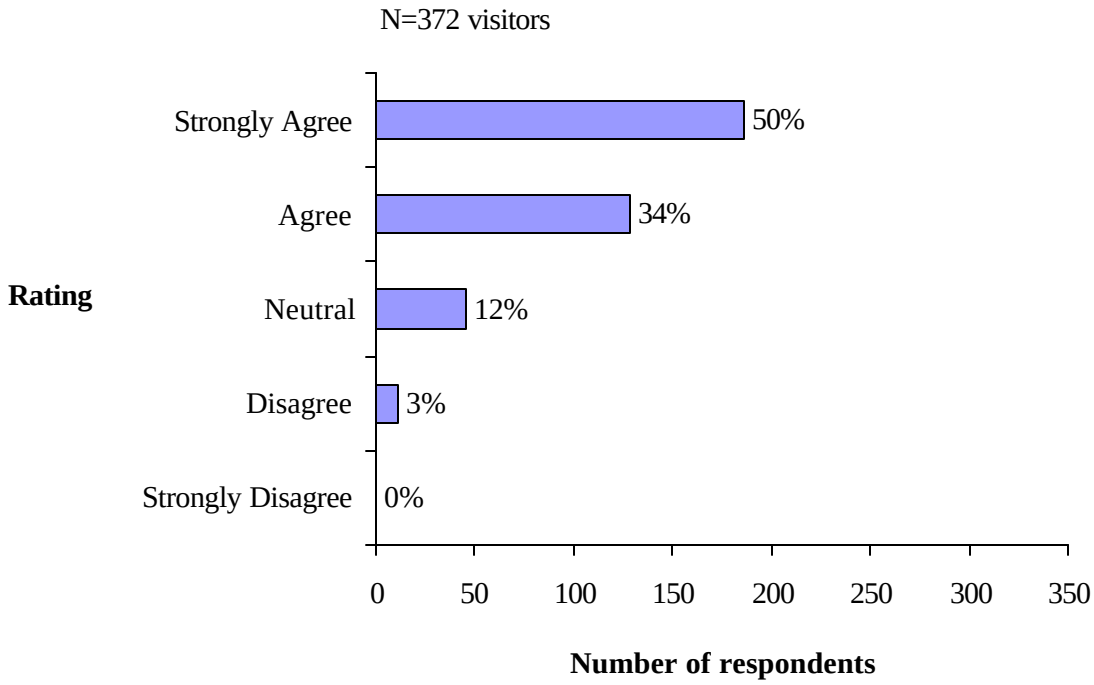


Figure 4.5.6: Bus on-board announcements made it easier for me to get around the area

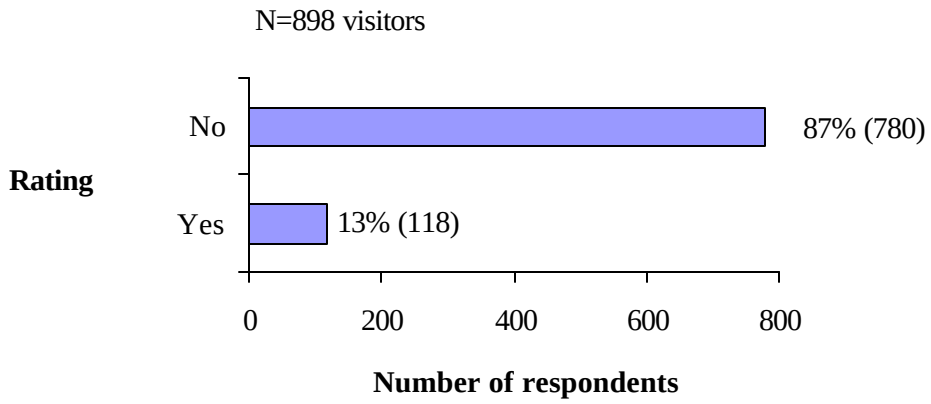


Figure: 4.5.7: Visitors that used the Island Explorer bus in previous summers

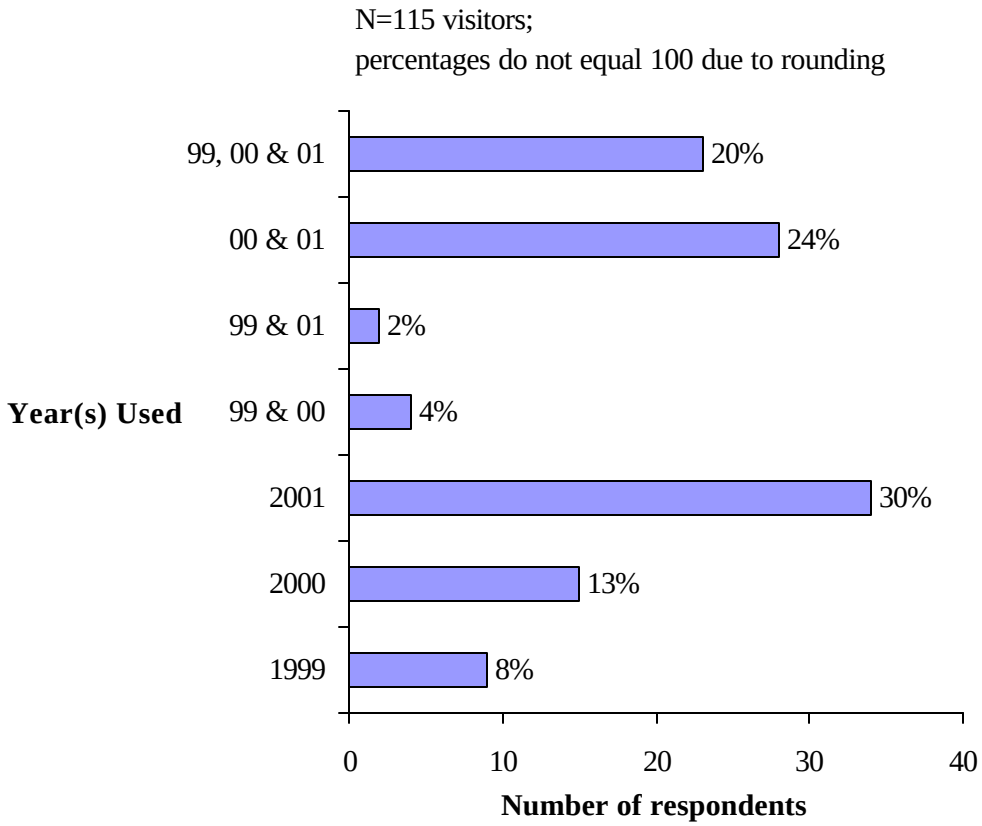


Figure 4.5.8: Year(s) that the visitor used the Island Explorer bus in previous summers

Visitors who answered "yes" to obtaining parking conditions or traffic information at the Acadia National Park visitor center, campgrounds, or website were asked to rate questions that could be used to assess efficiency in terms of information helping users to save time, change time of day to visit certain destinations, and decide what attraction to visit. Figures 4.5.9 - 4.5.10 show user's evaluation of the traveler information system involving the real time parking information.

Figure 4.5.9 shows that a relatively high proportion of users (67%) who agreed that the real time parking information helped saved time. However, a sizable proportion of users (29%) were uncertain as to whether the parking information saved them time. Four percent of users disagreed that the parking information saved them time. Figure 4.5.10 shows that forty-three percent of the users changed the time of day they visited an attraction based upon the real time parking information. Thirty-two percent was less certain that the information influenced the time of day they visited an attraction. Twenty-six percent of users rated "disagree" or "strongly disagree" as to the parking information changing the time of day they visited an attraction (21% and 5%, respectively). Figure 4.5.11 shows a that the real time parking information changed some visitor's mind on what attraction to visit (38 percent). However, 37% of users were uncertain that the information changed their mind on what attractions to visit. Twenty-six of the bus users disagreed with the statement that the information helped changed their mind on what attractions to visit.

Visitors who answered "yes" to using the Island Explorer bus and travel-related information during their recent visit were asked to rate two questions that could be used to assess efficiency in terms of information helping users save time. Eighty percent of the bus users reported that the real time bus departure signs helped to save time (Figure 4.5.12). Forty-eight percent of the bus users rated "strongly agree" in terms of the information helping to save time. Sixteen percent of the bus users were unsure of the real time departure signs helped them save time. Figure 4.5.13 shows that 69% of users agreed that the bus on-board announcements helped them to save time. However, twenty-four percent were uncertain that this information helped to save time. Seven percent rated "disagree" or "strongly disagree" with the bus on-board announcements helping them to save time.

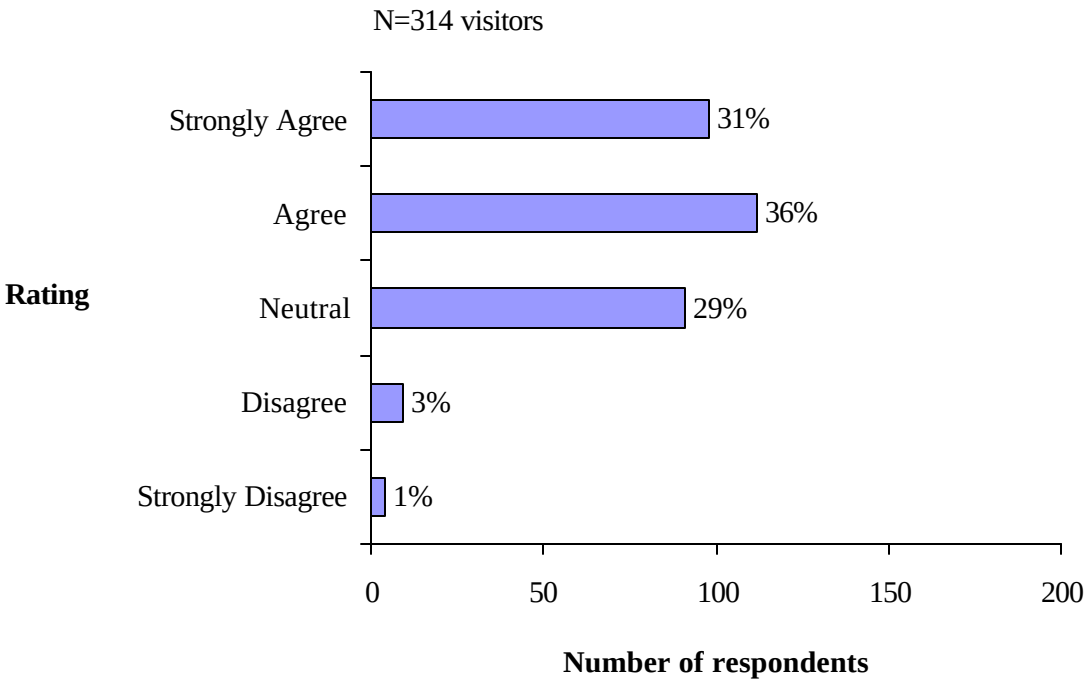


Figure 4.5.9: Parking conditions information saved time for the visitor

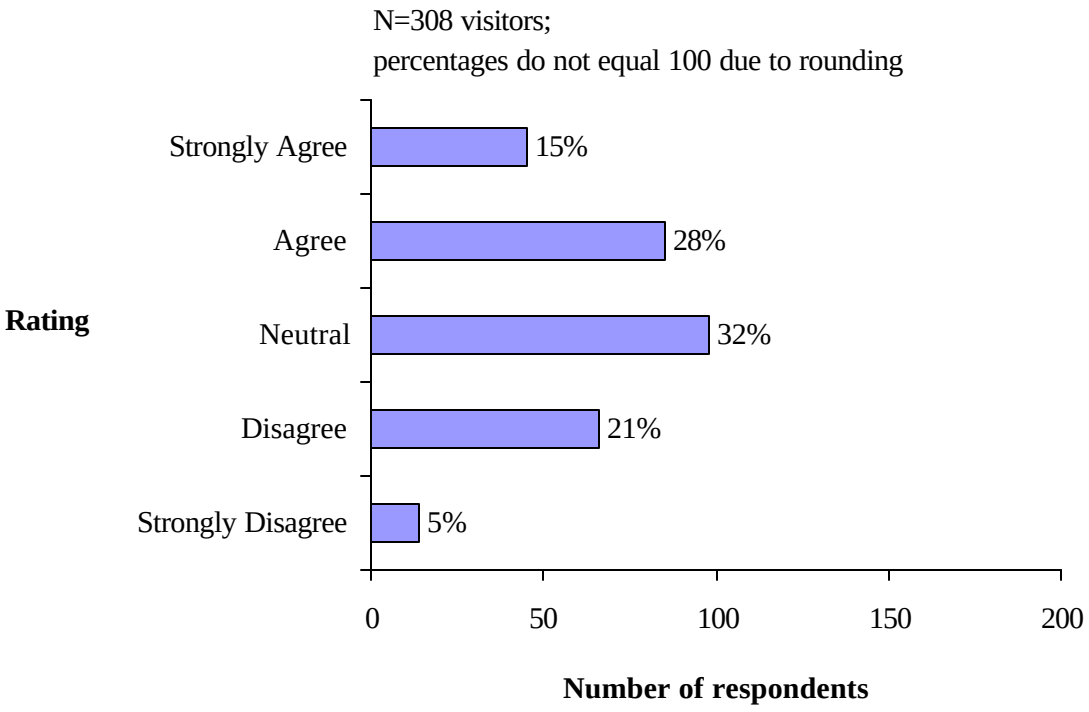


Figure 4.5.10: Parking conditions information changed the time of day to visit certain destinations

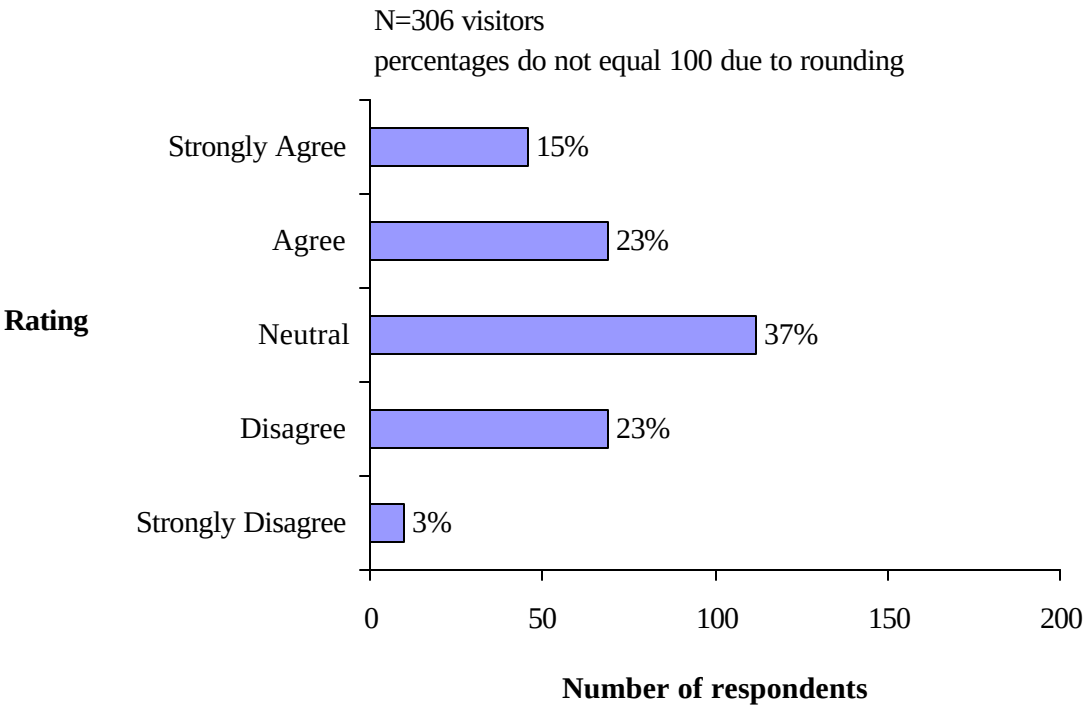


Figure 4.5.11: Parking conditions information changed the visitor's mind on what attractions to visit

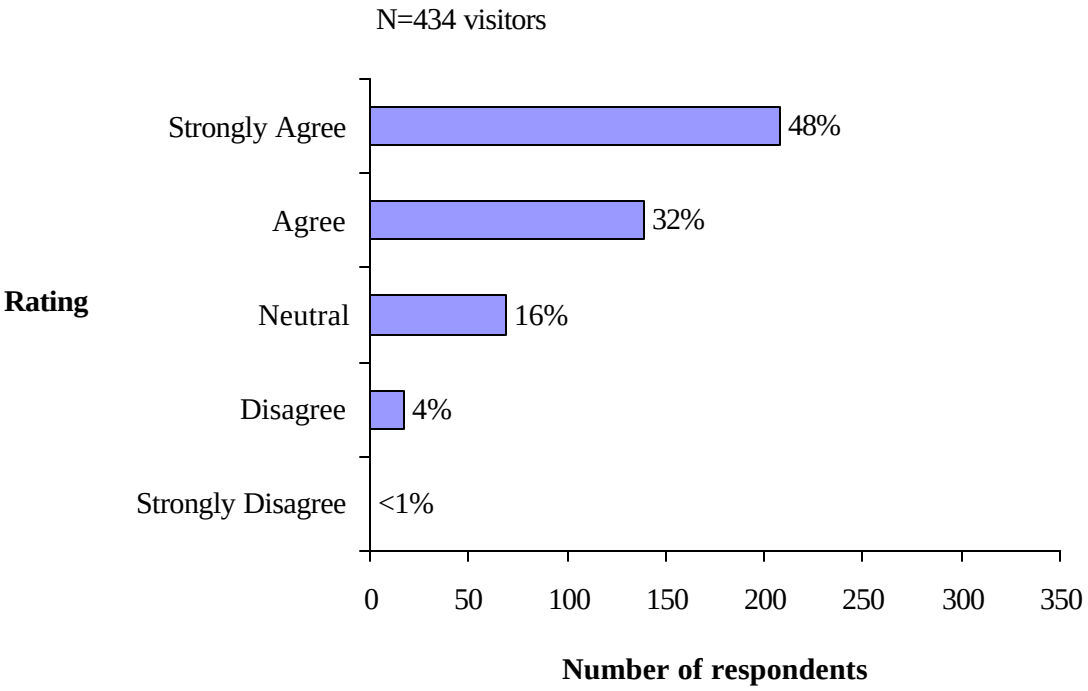


Figure 4.5.12: Real time bus departure sign saved time for the visitor

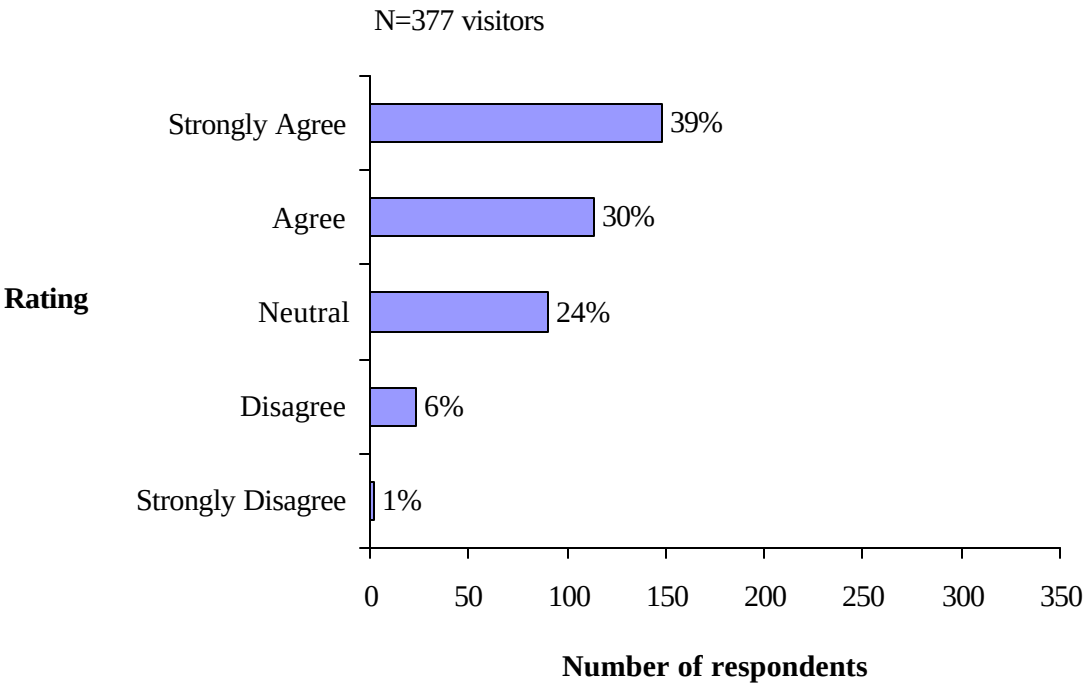


Figure 4.5.13: Bus on-board announcements saved time for the visitor

4.6 Productivity and Economic Vitality

The majority of visitors in this evaluation of the Field Operational Test of Acadia National Park reported staying overnight on Mount Desert Island (see section 4.3 visit and travel characteristics). Visitors who were not year-round or seasonal residents and the visitors who answered "yes" to staying overnight were asked how much time they spent in the Mount Desert Island area. Seventy-three percent of the visitors who were not residents of Mount Desert Island indicated one or more nights on Mount Desert Island. Figure 4.6.1 shows more than one quarter of the visitors (26%) stayed a week or more. Another 23% of the visitors indicated staying five or six days in the Mount Desert Island area. The highest proportion of visitors stayed four days (14%) and three days (22%).

Table 4.6.1 shows how much time visitors spent in the Mount Desert Island area. Length of visit varied among visitors based upon whether they reported using one or more of the ITS components and the Island Explorer bus. Therefore, four distinct visitor groups are displayed in the table below that include three sub-groups of ITS users: (ITS bus user) visitors who used the traveler information for Island Explorer buses such as the real-time departure of buses but not the availability of parking at Sand Beach and the Jordan Pond House; (ITS bus and parking user) visitors who used both traveler information related to Island Explorer buses as well as the availability of parking; (ITS parking user) visitors who used parking availability information but no bus traveler information and (ITS non-user) the group of visitors that neither used the parking availability information nor bus.

As reported above, the highest proportion of visitors, regardless of visitor group type, stayed three to four days (Table 4.6.1). However, ITS users who used the bus or the bus and parking information reported longer stays than the ITS users of parking information and ITS non-users. Fifty-eight percent of the ITS bus users and 50% of ITS users of the bus and parking reported staying 5 or more days. In contrast, less than half of the ITS users of parking information and ITS non-users reported staying for more than 4 days (44% and 43%, respectively). Thirty-one percent of the ITS bus and parking users reported staying a week or more in the Mount Desert Island area. However, the ITS bus user group had the higher mean length of stay (7.19) and was significantly higher than the mean length of stay for ITS parking user group (4.42) and ITS non-user group (4.93).

Figure 4.6.2 shows the amount visitors spent during their visit that included restaurants, purchases such as film, souvenirs, tickets, admissions, tours, rentals, and other expenses. Visitors were specifically asked to exclude costs associated with hotel or rental car costs. The highest proportion of visitors reported spending $501 or more (27%) and $301 to $500 (23%) during their stay in the Mount Desert Island area. Twenty-two percent of visitors reported spending less than $100 during their visit. Table 4.6.2 shows the highest proportion of visitors, regardless of visitor group type, spent $501 or more. However, based upon the length of stay reported above for each visitor group, it is not surprising that the reported money spent during their visit was higher for the ITS bus users who used either the bus or the bus and parking information. Fifty-eight percent of the ITS bus users and 55% of ITS users of the bus and parking reported spending $301 or more during their visit. In contrast, less than half of the ITS users of parking information and ITS non-users reported spending $301 or more during their visit (44% and 46%, respectively).

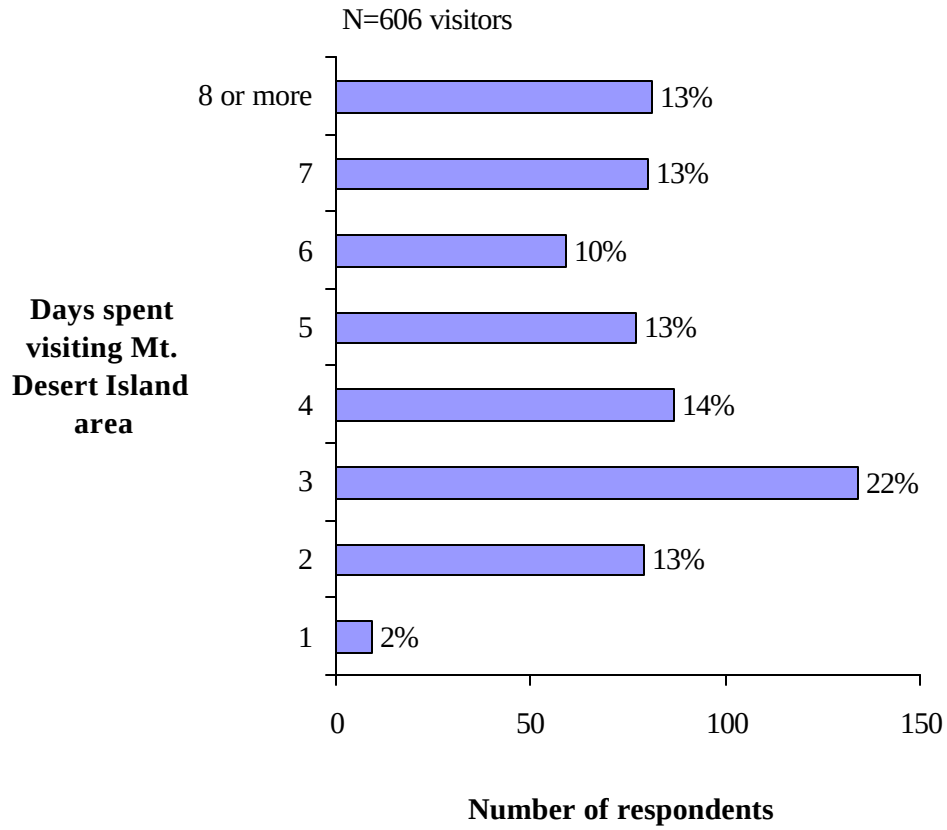


Figure 4.6.1: Days spent visiting Mount Desert Island (MDI) area by nonresidents of MDI

Table 4.6.1: Days spent visiting Mount Desert Island area by ITS user and ITS non-user

	ITS user			
	Bus	**Bus & Parking**	**Parking**	**ITS non-user**
	---------- percent ----------			
1 to 2 days	14	9	15	20
3 to 4 days	36	33	41	37
5 to 6 days	22	27	25	18
7 or more days	28	31	19	25

	Mean length of visit*
ITS Bus user	7.19
ITS Bus & Parking user	5.67
ITS Parking user	4.42
ITS non-user	4.93

* Significant differences among user groups, with ITS bus users higher than ITS parking group and ITS non-user group (ANOVA, $p<0.05$).

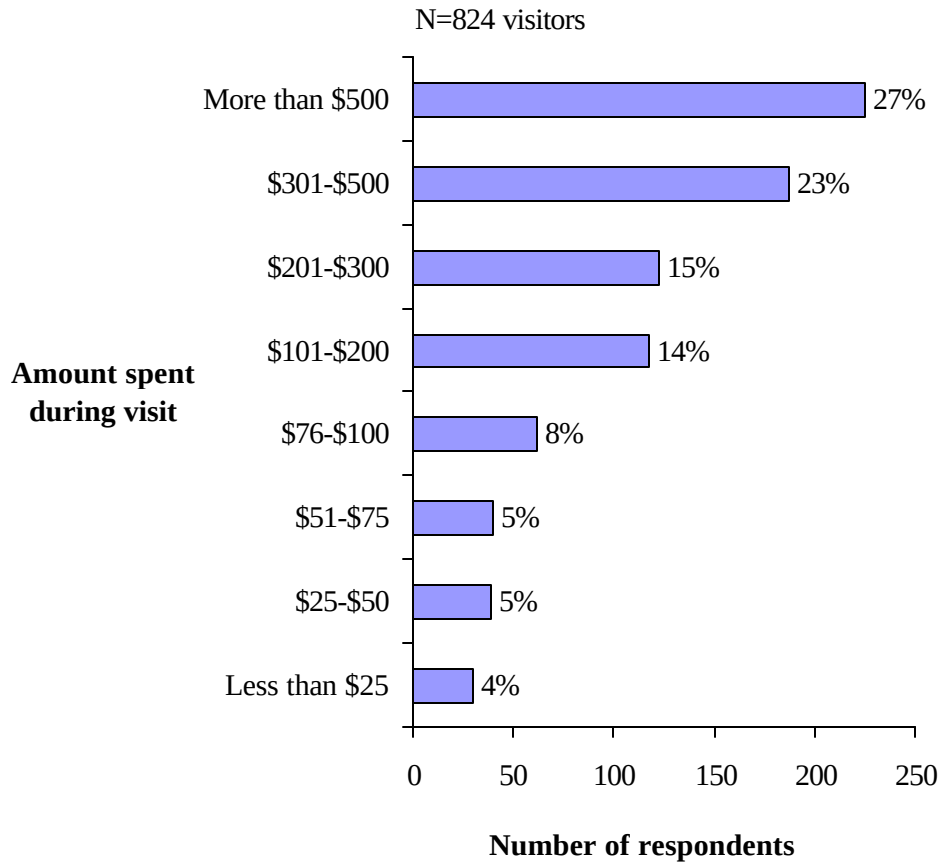


Figure 4.6.2: Not including hotel or rental car costs, but including restaurants, purchases such as film, tours, souvenirs, etc. the amount visitors spent during their visit

Table 4.6.2: Money spent during visit by ITS user and ITS non-user

	ITS user			
	Bus	**Bus & Parking**	**Parking**	**ITS non-user**
	---------- percent ----------			
Less than $25	2	1	4	7
$25-$50	4	2	4	8
$51-$75	4	1	6	7
$76-$100	8	6	7	8
$101-200	13	16	18	13
$201-$300	17	16	17	11
$301-$500	26	26	19	21
More than $500	29	32	25	25

* Significant differences across the four groups (Chi-square, p<0.001).

The majority of visitors in this evaluation of the Field Operational Test of Acadia National Park reported using a privately owned vehicle as the mode of transportation to reach Mount Desert Island (see section 4.3 visit and travel characteristics). Visitors identified as ITS non-users as compared to ITS user groups were much more likely to report the use of a car or truck with no trailer as the mode of travel to reach Mount Desert Island (91% and 75%, respectively). There appears to be more diverse visitor types including a car-less segment of visitors among the ITS user groups. As depicted in Table 4.3.1 in the visit and travel characteristics section, a slightly higher proportion of ITS users as compared to ITS non-users reported using modes of transportation that included commercial airplane (4%), private boat (3%), tour bus (2%), bicycle (1%), cruise ship (<1%), and private boat (<1%).

Caution should be used in drawing conclusions about the use of traveler information such as the real time bus departure displays and the on-board announcements with reported increase length of stay, money spent, and diverse mode of travel used to reach Mount Desert Island. On one hand, answers above may reflect to some degree visitor's use of the Island Explorer bus independent of the traveler information. Daigle and Lee's (2000)[13] study of the Island Explorer bus passengers identifies user reports of similar long length of stays as compared to general visitors in previous studies (Littlejohn 1998)[14]. Although money spent was not asked in the 1999 study it is reasonable to assume that Island Explorer bus passengers would have reported higher amounts of money spent during their visit as compared to visitors in general who reported shorter stays. Similarly, the 1999 study of bus passengers showed more diverse visitor types including a car-less segment of visitors as compared to visitors in previous studies (Daigle and Lee 2000, Littlejohn 1999). On the other hand, answers above may reflect to some degree visitor's use of the Island Explorer bus related to the traveler information. Figure 4.6.3 shows that 44% of the visitors who reported using real time parking information agreed that the information helped them decide to use the Island Explorer bus. Figure 4.6.4 shows that 80% of the visitors who reported using the bus and traveler information reported the real time bus departure displays helped them decide to use the Island Explorer Bus. Also, Figure 4.6.5 shows that 67% of the visitors who reported using the bus and traveler information reported the bus on-board announcements helped them decide to use the Island Explorer bus.

[13] Daigle, John J. and Byung-Kyu Lee. 2000. Passenger Characteristics and Experiences with the Island Explorer Bus: Summer 1999. Technical Report 00-15. Department of Interior, National Park Service, New England System Support Office. 76 p.

[14] Littlejohn, M. 1999. Acadia National Park Visitor Study: Summer 1998. Report 108 Visitor Services Project. Cooperative Park Studies Unit, University of Idaho. 108 p.

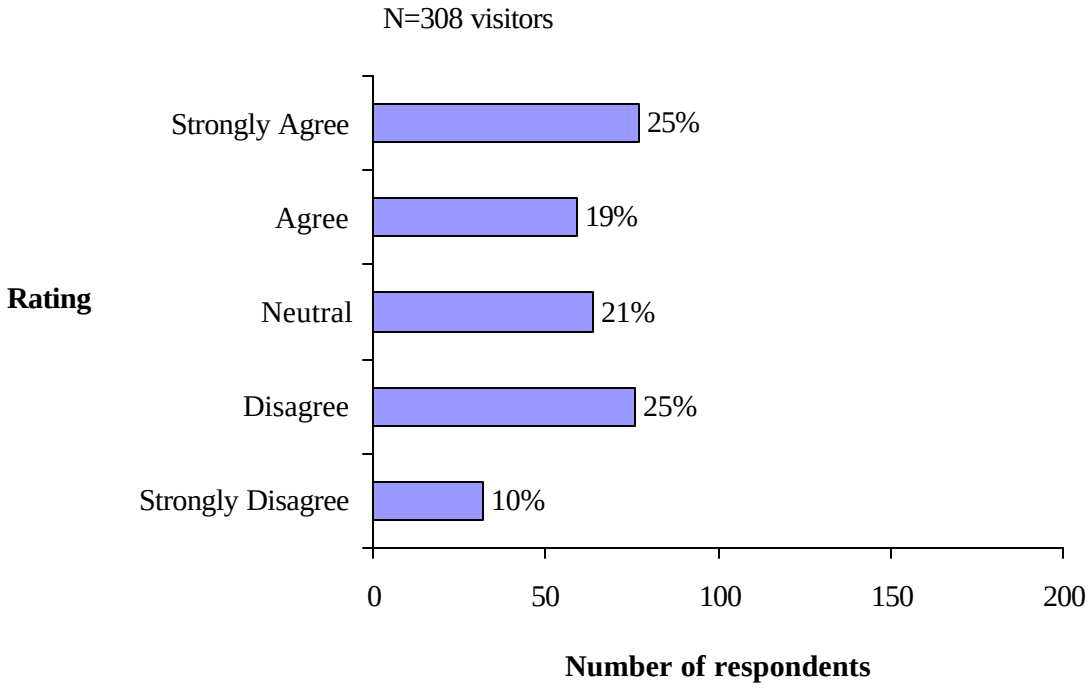


Figure 4.6.3: Parking information helped me decide to use the Island Explorer Bus

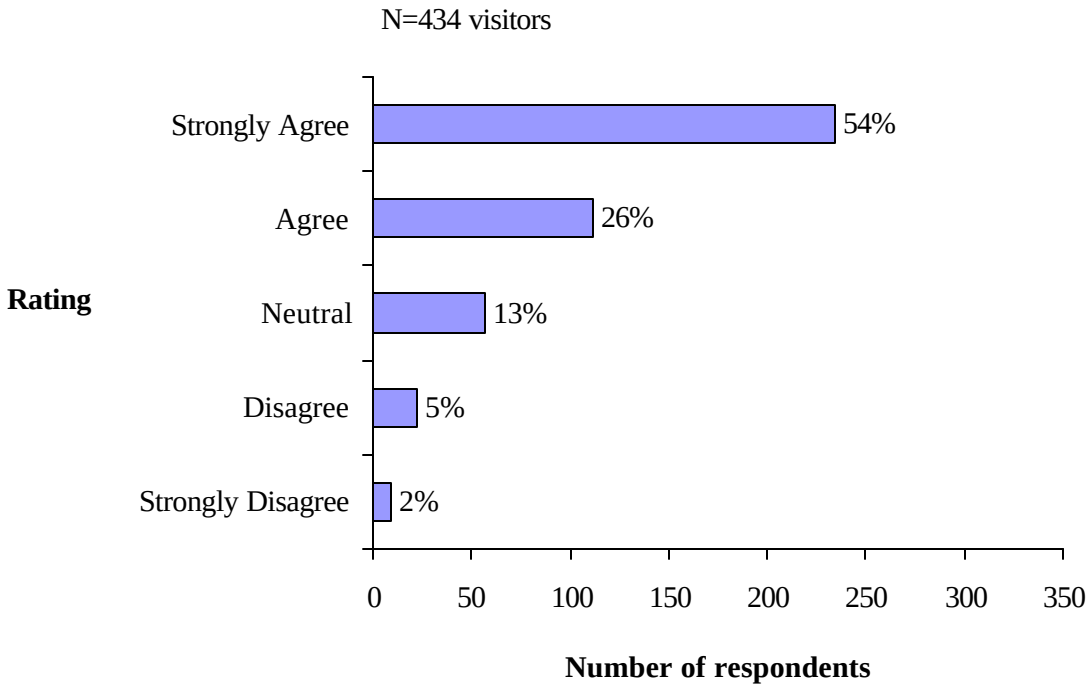


Figure 4.6.4: Real time bus departure signs helped me decide to use the Island Explorer Bus

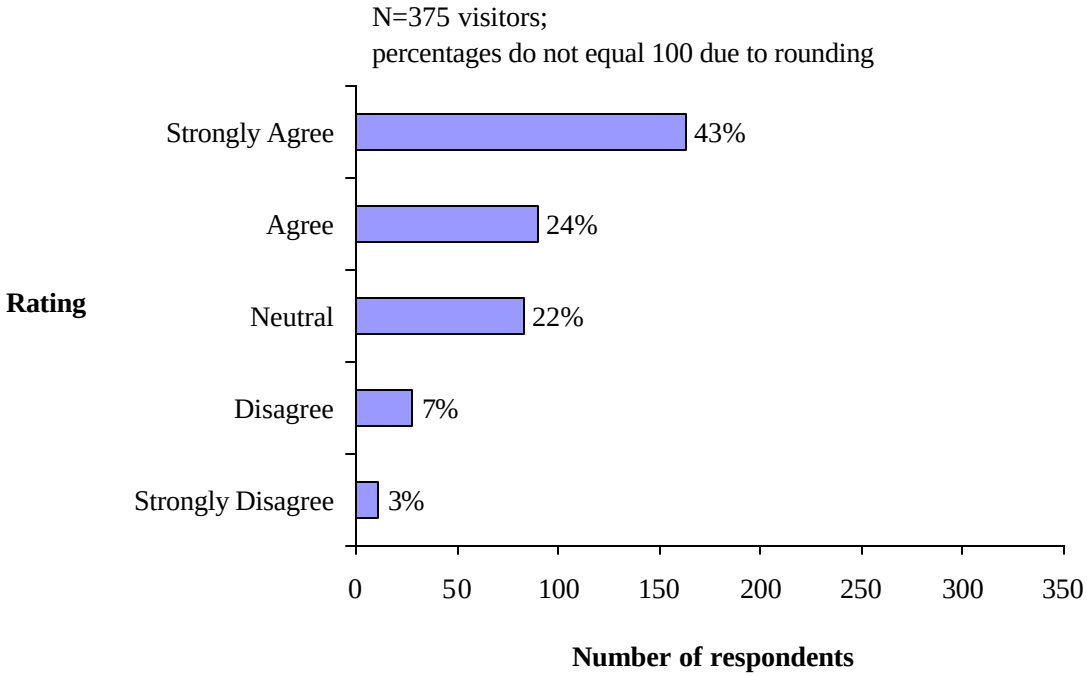


Figure 4.6.5: Bus on-board announcements helped me decide to use the Island Explorer Bus

4.7 Energy and Environment

As reported above, visitors rated a number of problems related to travel on Mount Desert Island and in Acadia National Park (see section 4.3 visit and travel characteristics). As depicted in Table 4.3.4 visitor concern about "too many autos having a negative impact on air quality" ranked among the top five problems for all visitor group types. Figure 4.7.1 shows the visitor rating with 28% of all visitors reporting a "moderate" or "big" problem of too many automobiles having a negative impact on air quality. Twenty percent of the visitors rated this a "small problem." A little more than one third of visitors (39%) did not think too many autos having a negative impact on air quality was a problem. It should be noted this issue ranked higher as a problem than "too many people in the Park" for all the ITS users groups however not the ITS non-user group. Also, this issue ranked higher than access to recreation opportunities inside the Park and desired attractions outside of the Park for all visitor groups. The ITS users who used the bus and parking traveler information actually ranked this item second in terms of problems related to travel on Mount Desert Island and in Acadia National Park. Further investigation is needed in terms of the prevalence of this issue influencing the choice of using the less polluting propane-powered Island Explorer buses. However, it may be an attractive incentive for visitors and future use of the Island Explorer bus with this level of awareness of autos and air quality, especially in a pristine setting such as Acadia National Park.

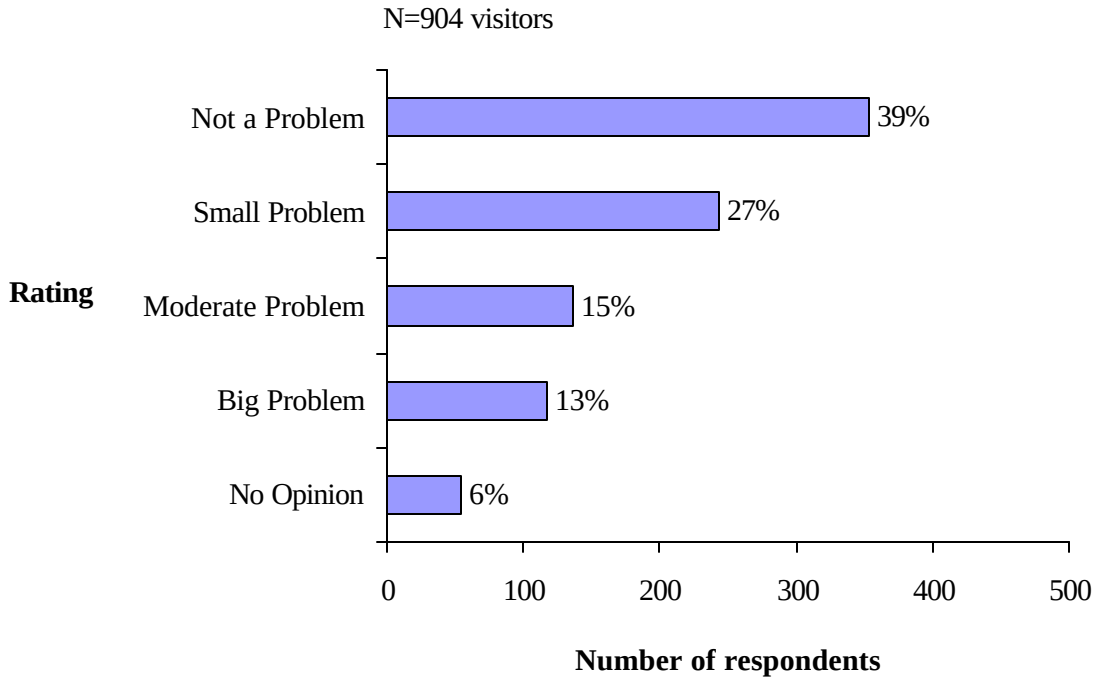


Figure 4.7.1: Visitor rating of too many automobiles having a negative impact on air quality

5.0 DISCUSSION

Results of the visitor survey provided data for assessing the benefits of ITS in the evaluation goal areas of customer satisfaction, mobility, productivity and economic vitality, and energy and environment. Specific hypotheses related to expected benefits of ITS are presented in Table 5.0.1. An important goal of the ITS technologies was to enhance the visitor's experience and to divert visitors from using their private vehicles to using the Island Explorer bus for traveling around Mount Desert Island and in Acadia National Park. It was expected that ITS technologies would contribute to a more positive visitor experience and willingness to use transit by providing real-time information on parking lot conditions, real-time information on departures of the next Island Explorer bus, and traveler information on-board buses such as announcements of the next bus stop. It was expected that ITS technologies would increase visitor's ability to access desired destinations and activities. The enhanced experience and increased access would contribute to the local economy in terms of longer visitor stays and a new car-less tourist segment. Finally, visitors' use of the propane-powered Island Explorer buses would result in fewer trips by private vehicle and a consequent improvement in air quality. This would result in a more positive experience for visitors through enhanced aesthetics of Acadia National Park.

Table 5.0.1: Hypotheses related to the visitor survey.

Evaluation Area	Objective	Hypotheses
Customer Satisfaction	To provide a more positive visitor experience through greater reliance on the IE for travel	Real-time departure information on next IE bus will increase visitors' willingness to use transit
		Real-time information on parking lot conditions will increase visitors' willingness to use transit
	To provide a more positive visitor experience through information on parking availability	Real-time information on parking lot conditions will increase visitors' ability to plan accordingly and to fulfill experience preferences
	To provide a more positive visitor experience through efficient service	Tourist who use ITS feel less stress and worry due to service operations
Mobility	To increase visitor's ability to access desired destinations and activities	Tourists who use traveler information services (TIS) are more aware of travel options than those who do not use TIS
		Tourists use alternative routes or travel modes due to TIS
		Tourists perceive that they have increased access as a results of their use of TIS
		Tourists who use TIS perceive fewer problems with congestions and parking that might prohibit them from visiting certain destinations and activities
Productivity and Economic Vitality	To provide a more positive visitor experience and increased visitation	ITS users stay longer than ITS non-users
	Attract car-less tourist segment	Tourists arriving without cars will be attracted by ITS-enabled mobility
Energy and Environment	To provide a more positive visitor experience for visitors through enhanced aesthetics of Acadia National park	ITS-improved IE service will result in fewer vehicles parked on Acadia National Park roads

First of all it should be noted that the majority of visitors reported overall high quality visitor experiences regardless of using or not using one of more of the deployed ITS components. However, for all visitors the overall ratings of travel experiences were not as high as the overall rating of visitor experiences in general. Yet the concern that gave rise to their lower travel experiences were not uniform among visitor segments. For example, visitor concern about "vehicles parked along main roads causing unsafe conditions" ranked number one for all visitor groups. However, certain visitor groups such as the ITS users of the bus and the bus and parking information rated this as more of problem than the ITS users of parking information or ITS non-users. The perceived unsafe conditions may have influenced visitors to seek out and use traveler information. Also, visitors differed in terms of their travel experiences using a personal vehicle in Acadia National Park. Visitors identified as using one or more of the ITS components generally had more concern about travel issues on Mount Desert Island and in Acadia National Park and also tended to encounter more parking problems when they reported using their personal vehicle in Acadia National Park. Thus, a conclusion to be drawn is that ITS-users were more concerned about travel issues and sought means to alleviate those concerns via ITS and Island Explorer. Non-users, on the other hand, were either less sensitive to travel conditions or had strategies for coping with problems that didn't involve the need for Island Explorer or ITS.

By focusing on the ITS-users, an appreciation of the benefits they derived can be discerned. Clearly the ITS technologies associated with the Island Explorer had a positive impact on visitors and on overall goals of the ITS Field Operational Test. The visitors who used the real-time departure signs for the Island Explorer buses and the real-time parking conditions reported in general that the information was accurate, clearly understandable, and easy to use. As hypothesized, the ITS technologies and associated traveler information contributed to a more positive visitor experience. For example, ITS users of the traveler information system involving the real-time parking conditions, automated annunciator, and electronic departure sign for the Island Explorer bus reported the information saved them time and reduced tension and stress related to travel. The ITS users reported future use of the traveler information would be a pleasant experience and that they would plan to use the information again. As hypothesized, the ITS technologies increased visitors' willingness to use transit. However, a much higher proportion of ITS users of the electronic departure signs and bus on-board announcements reported it helped them decide to use the Island Explorer bus (80% and 67%, respectively) as compared to ITS users of the real-time parking conditions and their report of it helping them decide to use the Island Explorer bus (44 percent). Regardless of the reported differences, the ITS technologies appear to be contributing to the overall goal of diverting visitors from using private vehicles to using the Island Explorer bus.

While awareness of ITS is an essential first step, the survey revealed it didn't necessarily translate into use of ITS. The vast majority of visitors contacted on-board the Island Explorer buses who reported being aware of one or more of the ITS components actually used the traveler information. However, only a slight majority of visitors contacted at other locations who reported being aware of one or more of the ITS components actually used the traveler information. For example, over half of the visitors (55%) reported being aware of the information on parking availability, but 30% of the visitors reported planning to use the information for their travels. As noted in Section 4.2 on "Awareness and Usage of ITS Components" the parking availability reflected the designated parking lots at Sand Beach and the Jordan Pond House. The status of parking lots being full did not necessarily restrict visitors from gaining access to these attractions. Some visitors may have realized these areas were still accessible by privately owned vehicles and despite knowing the condition of the parking lots did not plan to use the information. However, if a more strict parking policy was to be implemented to regulate cars not parked in designated lanes in parking lots, especially at the Jordan Pond House, visitors may be more likely to use the

parking availability information. Moreover, heavier promotion of the parking information and encouraging visitors to act on alternatives might result in greater usage than observed.

ITS contributed to visitors' perception of mobility at Acadia National Park and Mount Desert Island. Nearly three out of four users (74%) agreed that the real time parking information made it easier for them to get around despite having lower agreement ratings for the parking information helping to avoid parking problems (66%), traffic congestion (57%), and large crowds (47%). A higher proportion of bus users agreed that the real time departure sign of the next bus and the on-board bus announcements made it easier for them to get around (90% and 84%, respectively). However, further investigation may be warranted to gauge the visitor experience at certain desired destinations, especially the influence of large crowds. It should be noted that the ITS technologies had limited success in changing the time of day or changing the visitor's mind on what attractions to visit (43% and 38%, respectively). Finally, it was hypothesized that ITS users would generally report increased ability to access desired destinations and activities as compared to ITS non-users. Despite ITS users' perception of benefits from ITS technologies and information, no difference was detected among ITS users and non-users in terms of access to desired destinations and activities. It should be noted that ITS non-users generally reported fewer problems related to travel on Mount Desert Island and in Acadia National Park. In particular, the ITS non-users reported less problems finding parking and had less worry about driving and parking along busy roads. Clearly, the ITS technologies have many benefits to users but may not be sought or utilized by certain visitors if there is no perceived need for the traveler information.

An expected benefit of the ITS technologies is that it will contribute to the productivity and economic vitality in the region. Specifically, the enhanced experience and increased access will contribute to longer visitor stays and attract a new car-less tourist segment. Indeed, the survey data revealed a positive correlation that should be encouraging to the local business community. A significant difference was detected in the length of stay among visitors based upon whether they reported using one or more of the ITS components and the Island Explorer bus. ITS users who used the bus or the bus and parking availability information reported longer stays than the ITS users of only parking information and ITS non-users. Fifty-eight percent of the ITS bus users and 50% of ITS users of the bus and parking reported staying 5 or more days. In contrast, less than half of ITS users of parking information and ITS non-users reported staying for more than 4 days (44% and 43%, respectively). Similarly, a significant difference was detected in money spent during their visit with higher amounts reported for the ITS bus users who used the bus or the bus and parking information. Fifty-eight percent of the ITS bus users and 55% of ITS users of the bus and parking reported spending $301 or more during their visit. In contrast, less than half of the ITS users of parking information and ITS non-users reported spending $301 or more during their visit (44% and 46%, respectively). Thus, there is support for the hypothesis that the ITS technologies, particularly those associated with the Island Explorer bus, increased visitors' length of stay and economic contribution to the region.

In Section 4.6 of this report on "Productivity and Economic Vitality" a note of caution was raised about drawing conclusions about the use of traveler information such as the real time bus departure signs and the on-board announcements with reported increased lengths of stay, money spent, and diverse mode of travel used to reach Mount Desert Island. On one hand, answers may have reflected to some degree visitor's use of the Island Explorer bus independent of the traveler information. Previous research has shown longer lengths of stay for Island Explorer bus passengers as compared to other Park visitor studies (Daigle and Lee 1999; Littlejohn 1998). Similarly, previous research of bus passengers has shown more diverse visitor types including a car-less segment of tourists as compared to other Park visitor studies (Daigle and Lee 1999; Littlejohn 1998). On the other hand, results from this study clearly support to some degree

visitor's use of the Island Explorer bus related to the traveler information. More than three quarters of the visitors (80%) who reported using the bus and traveler information also reported the real time bus departure sign helped them decide to use the Island Explorer bus. Similarly, more than two-thirds of the visitors (67%) who reported using the bus and traveler information also reported the bus on-board announcements helped them decide to use the Island Explorer bus. These findings help support the hypothesized relations to length of stay and economic contribution to the region as well as increasing the car-less tourist segment.

An important outcome associated with the ITS technologies and a visitor deciding to use a propane-powered Island Explorer bus are fewer trips being made with their private vehicle and a consequent improvement in air quality. Results of this evaluation suggest there is visitor concern about air quality around Acadia National Park. Twenty-eight percent of visitors rated this a "moderate" or "big" problem. As reported in Section 4.7 on "Energy and Environment" visitor concern about "too many autos having a negative impact on air quality" ranked among the top five problems in terms of importance. It should be noted the issue of air quality ranked higher as a problem than "too many people in the Park" for all the ITS users groups, but not the ITS non-user group. Also, this issue ranked higher than access to recreation opportunities inside the Park and access to desired attractions outside of the Park for all visitor groups. The ITS users who used the bus and parking traveler information actually ranked this item second in terms of problems related to travel on Mount Desert Island and in Acadia National Park. Further investigation is needed in terms of the prevalence of this issue influencing the choice of using the less polluting propane-powered Island Explorer buses. It may be an attractive incentive for visitors and future users of the Island Explorer bus especially with the current level of awareness of autos and air quality. Air quality concerns in a pristine setting such as Acadia National Park may persuade visitors that previously did not perceive the need for traveler information and alternatives to using their own vehicles.

Finally, this document reports the results for one aspect of the overall evaluation: Visitor Surveys. It is important that these results be viewed together with those from other aspects of the evaluation, such as the results of the Business Survey and other data about visitors and their impact that were collected for the evaluation. There are many similarities of what businesses and visitors believe are benefits from use of the traveler information such as ease of travel, less tension and stress related to travel, and increased likelihood of using the Island Explorer bus. However, there are important disparities in beliefs about certain benefits of the traveler information. For example, businesses generally believed that the traveler information would be helpful to visitors in avoiding large crowds. In contrast, visitors generally reported that the traveler information was not helpful in avoiding large crowds. This has important implications to future advertising of the benefits of using the traveler information because congruence between expectations and outcomes is seen to ultimately define satisfaction. More synthesis of different aspects of the overall evaluation is reported in the summary report.

Appendix A

On-site Interview

(Front of card filled out by interviewer)

1) Date: _____ 2) Sample Location: _____

3) What is your next travel destination? _____

4) What kind of group are you with? (Please circle only one)
ALONE FAMILY FRIENDS FAMILY AND FRIENDS TOUR GROUP
OTHER (_____)

5) How many people are in your group? _____ PEOPLE

6) Are you aware of the following travel information sources? Have you used these on this trip?

AWARE		USED
_____	Parking availability (Park staff/signs)	_____
_____	Park traveler information (telephone system)	_____
_____	Acadia National Park Website	_____
_____	Island Explorer Website	_____
_____	Electronic Island Explorer Arrival Signs	_____
_____	Island Explorer Automated Annunciator	_____

7) Have you visited Acadia National Park before? ___ YES ___ NO

8) Are you a Year-round or Summer resident of Mount Desert Island?

___ YES ___ NO → If no, how many days do you plan to stay in the Mount Desert Island Area? ____

DISPOSITION: ____

THANK YOU!

(Back of card filled out by interviewee)

THANK YOU!

10) To participate in the mail survey please provide

NAME: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

Acadia National Park Travel Study

Your participation in this survey is voluntary. Since each interviewed person will represent many others who will not be surveyed, your cooperation is extremely important. The answers you provide will be confidential. An identification label used on mail-out questionnaires is for mailing purposes only. Our results will be summarized so that the answers you provide cannot be associated with you or anyone in your group or household. Your name and address will not be given to any other group or used by us beyond the purposes of this study.

University of Maine
Parks, Recreation and Tourism Program
5755 Nutting Hall
Orono, ME 04469-5755

Appendix B

Mail-back Questionnaire

(Note: final version formatted slightly different for booklet)

ACADIA NATIONAL PARK
TRAVELER SURVEY

University of Maine
Parks, Recreation and Tourism Program
5755 Nutting Hall
Orono, Maine

This survey is voluntary. However, your cooperation is requested to make the survey results comprehensive, accurate, and timely. You may be assured that in the analysis and reporting of results, you will not be identified.

A. In the first part of the survey, we would like to learn if you used the following travel and traffic information sources during your recent visit.

1. Did you obtain any parking availability or traffic conditions information provided at National Park Service visitor centers or campgrounds? (For example, parking availability information provided by staff and signs).

[ ] NO. If no, please go to **Question 2.**

[ ] YES If yes, please continue.

A. How often did you obtain this information?_____ times.

B. Where did you receive the parking availability and traffic conditions information? (Please check as many as apply)

____ Acadia National Park visitor center near Bar Harbor

____ Acadia National Park's Blackwoods Campground

____ Acadia National Park's Seawall Campground

____ Village Green visitor information center in Bar Harbor (near Island Explorer bus stop)

____ Other (Please specify: _____)

2. Did you use the Park's Interactive Telephone Information Service ((207) 288-3338) to obtain travel and traffic information?

[ ] NO If no, please go to **Question 3.**

[ ] YES If yes, please **continue.**

A. How often did you use the telephone?_____times.

B. When did you call this service number? (Please check as many as apply)

____ At home before traveling to Acadia National Park

____ During your travel to Acadia National Park

____ During your visit at Acadia National Park

____ Other (Please specify:_____)

3. If you answered NO to Questions 1 **and** 2, please go to **section B.**

4. The questions below are concerned with your evaluations of the parking availability and traffic conditions information provided at A) the National Park Service visitor centers and campgrounds and/or B) the Interactive Telephone Service ((207) 288-xxxx). Please read each of the following questions carefully and circle the number that best describes your opinion.

How strongly do you agree with the following?
Please circle your response on the scale from 1-5.

a. I found the information to be accurate.....

b. I was able to clearly understand the information .....

c. It was easy for me to use the information .....

d. The information saved me time .....

e. The information helped me avoid parking problems .....

f. The information helped me avoid traffic congestion.....

g. The information helped me avoid large crowds.....

h. It was easier for me to get around the area with the information.....

i. The information helped me to reduce tension and stress related to traveling.....

j. I would plan to use this information if visiting within the next 12 months.....

k. The information helped me change my mind on what attractions to visit.....

l. The information changed the time of day I visited certain destinations within the park .....

m. The information helped me decide to use the Island Explorer Bus .....

n. My traveling companions think I should use this information for planning trips.....

o. Using this source of information in the future would be a pleasant experience .....

Parking Conditions and Traffic Information Provided at the Park Visitor Center, Campgrounds, or website

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

Island Explorer Bus Information with the Park's Telephone Service (207) 288-3338)

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

B. In this part of the survey, we would like to learn if you used the Island Explorer Bus and travel-related information during your recent visit.

1. Did you use the Island Explorer Bus during your recent visit this summer?

   [ ] NO If no, please go to **Question 3**.

   [ ] YES If yes, please **continue**.

2. The questions below are concerned with your evaluations of the travel information provided with the Island Explorer Bus this summer. Please read each of the following questions carefully and circle the number that best describes your opinion.

How strongly do you agree with the following?
Please circle your responses on the scale of 1 to 5.

a. I found the information to be accurate.....

b. Information displayed was easy for me to read.....

c. The information relieved uncertainty about when the bus will get to my bus stop.....

d. The information saved me time .....

e. Using this information in the future would be a pleasant experience.....

f. I would plan to use this information if visiting within the next 12 months.....

g. The information helped me decided to use the Island Explorer Bus.....

h. My traveling companions think that I should use this information for an improved travel experience.....

i. I was able to get around the area easier with the information.....

j. It was easy for me to use the information .....

k. The announcements relieved uncertainty about when to exit the bus.....

l. The announcements were clear and understandable.....

m. The volume of the announcements were loud enough to hear.....

n. Announcements were made early enough for me to exit the bus when needed .....

Real Time Bus Arrival Displays at the Village Green, the Visitor Center, and Jordan Pond					Island Explorer Bus Announcements				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5
		n/a			1	2	3	4	5
		n/a			1	2	3	4	5
		n/a			1	2	3	4	5
		n/a			1	2	3	4	5

3. Did you use the Island Explorer Bus prior to this summer season?

[ ] NO

[ ] YES If yes, during which years? (Please circle all that apply)

1999 2000 2001

C. In this section we would like to know more about your travel experiences during your recent visit.

1. Did you use any of the following sources of travel or traffic information? Please check all that apply.

___ MY PRIOR EXPERIENCE AND KNOWLEDGE

____ PARK BROCHURE/MAP

____ PARK NEWSPAPER (*Beaver Log*)

____ ISLAND EXPLORER INSERT (in *Beaver Log*)

____ HOST OF PRIVATE CAMPGROUND/MOTEL/B&B

____ OTHER VISITORS

____ TRAVELING GUIDE/CAMPING/TOUR BOOK

____ ACADIA NATIONAL PARK WEBSITE

____ ISLAND EXPLORER WEBSITE

____ FRIENDS OR FAMILY

____ CHAMBER OF COMMERCE OR STATE VISITORS BUREAU

____ OTHER (Please specify: _____)

2. Are you a Year-round or Summer resident of Mount Desert Island?

[ ] NO If no, please **continue**.

[ ] YES If yes, please go to **Question 8**.

3. During this trip did you stay overnight on Mount Desert Island?

[ ] NO If no, please go to **Question 6**.

[ ] YES If yes, please **continue**.

4. What type of overnight accommodations did you use during this visit? Please check all that apply.

_____ PRIVATE CAMPGROUND

_____ BLACKWOODS OR SEAWALL CAMPGROUND

_____ BED AND BREAKFAST

_____ MOTEL OR HOTEL

_____ SHORT-TERM HOUSE RENTAL (less than one month stay)

_____ STAYED WITH FRIENDS OR RELATIVES

_____ OTHER (Please describe: _____
_____)

5. During this visit, how many days did you spend visiting the Mount Desert Island area?

___ DAYS

6. Not including hotel or rental car costs, but including restaurants, purchases such as film, souvenirs, tickets, admissions, tours, rentals, and other expenses, how much do you estimate you and your immediate traveling party spent during your visit here? Please check only one.

___ Less than $25

___ $25-$50

___ $51-$75

___ $76-$100

___ $101-$200

___ $201-$300

___ $301-$500

___ More than $500

7. On this visit, what form of transportation did you use to reach Mount Desert Island?

____ CAR OR TRUCK WITHOUT TRAILER

____ CAR OR TRUCK WITH TRAILER

____ MOTOR HOME/RV

____ MOTOR HOME./RV WITH TOWED CAR

____ CAT FERRY WITH AUTOMOBILE

____ CAT FERRY WITHOUT AUTOMOBILE

____ TOUR BUS

____ COMMERCIAL AIRPLANE

____ PRIVATE AIRPLANE

____ BICYCLE

____ PRIVATE BOAT

____ CRUISE SHIP

____ OTHER (Please specify: _____
_____)

8. On this list below, please check all the activities that you and your group participated in during your recent trip.

_____ WALKING ON CARRIAGE ROADS

_____ HIKING ON TRAILS

_____ BIKING ON CARRIAGE ROADS

_____ BIKING ON PARK MOTOR ROADS

_____ HORSE AND CARRIAGE RIDES

_____ GOING OUT TO LUNCH/DINNER OR ENTERTAINMENT IN THE VILLAGE CENTER

_____ ATTEND RANGER-LED PROGRAMS

_____ SIGHTSEEING

_____ JORDAN POND HOUSE FOOD SERVICE

_____ LAKE BOATING/CANOEING

_____ BIRD WATCHING

_____ PICNICKING

_____ SHOPPING IN THE VILLAGE CENTERS

_____ SHOPPING IN THE PARK

_____ SEA KAYAKING

_____ ROCK CLIMBING

_____ GOING TO WORK

_____ OTHER (please describe: _____
_____)

9. Overall, how would you rate your experiences visiting Acadia National Park and surrounding towns on Mount Desert Island? (Please circle one)

VERY GOOD GOOD AVERAGE POOR VERY POOR

10. During your recent visit, how much of a problem do you think the following travel issues are on Mount Desert Island and in Acadia National Park? Please read each question carefully and circle the number that best describes your opinion.

Issue	Not a Problem	Small Problem	Moderate Problem	Big Problem	No Opinion
a. Not enough travel and traffic information to help visitors plan for trips in the Park	1	2	3	4	5
b. Too many autos in the Park that impacts my experience	1	2	3	4	5
c. Ability to fully access desired recreation opportunities and attractions in the Park	1	2	3	4	5
d. Too many Recreational Vehicles in the park that impacts my experience	1	2	3	4	5
e. Too many Tour Buses in the park that impacts my experience	1	2	3	4	5
f. Seeing electronic bus signs in the park	1	2	3	4	5
g. Too many autos having a negative impact on air quality	1	2	3	4	5
h. Too many people in the park that impacts my experience	1	2	3	4	5
i. Vehicles parked along main roads causing unsafe conditions	1	2	3	4	5
j. Too many autos outside the park that impacts my experience	1	2	3	4	5
k. Too many Island Explorer Buses in the Park that impacts my experience	1	2	3	4	5
l. Ability to fully access desired attractions outside of the Park	1	2	3	4	5

m. Other (Please List):

11. Overall, how would you rate your travel experiences during your most recent visit? (Please circle one)

VERY GOOD GOOD AVERAGE POOR VERY POOR

D. In this portion of the survey, we would like to know more about your travel experiences while using your personal vehicle in Acadia National Park.

1. Did you use your personal vehicle to access the Park or local villages during your recent visit?

[ ] NO If no, please go to **Section E.**

[ ] YES If yes, please **continue**

2. The following questions are concerned with travel experiences using your personal vehicle during your recent visit. Please read each of the following questions carefully and circle the number that best describes your opinion.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Travel experiences using your personal vehicle during your recent visit					
a. Travel information would have made it easier for me to get to the attractions I wanted to visit..	1	2	3	4	5
b. It is easy for me to find parking in Acadia National Park.....	1	2	3	4	5
c. It is easy for me to avoid traffic congestion in Acadia National Park.....	1	2	3	4	5
d. It was easy to plan trips inside Acadia National Park using my personal vehicle	1	2	3	4	5
e. I know the area well enough so I don't need travel information	1	2	3	4	5
f. I had some worry about driving and parking along busy roads with my personal vehicle	1	2	3	4	5
g. Overall, I was pleased with travel conditions using my personal vehicle on this trip (such as traffic, parking availability, safe roads)	1	2	3	4	5
h. Overall, I was pleased with travel conditions on a previous trip to this area.....	1	2	3	4	5

3. During your recent visit, did you encounter any parking problems using your personal vehicle while in Acadia National Park?

[ ] NO If no, please go on to **Question 4**.

[ ] YES If yes, please **continue**.

How did you respond? (Please check all that apply)

____WAITED UNTIL A PARKING SPOT OPENED NEAR MY INTENDED DESTINATION

____PARKED SOME DISTANCE AWAY FROM MY INTENDED DESTINATION AND WALKED

____AT LEAST ONCE, WENT TO AN ALTERNATE DESTINATION

Approximately what time of day did you first encounter parking problems? (Please circle one)

9:00 am	10:00 am	11:00 am	12:00 pm
1:00 pm	2:00 pm	3:00 pm	Other_____

4. During your recent visit, did you encounter any traffic congestion while using your personal vehicle in Acadia National Park?

[ ] NO If no, please go to **Section E**.

[ ] YES If yes, please **continue**.

How did you respond? (Please check all that apply)

____WAITED TO GET TO MY INTENDED DESTINATION

____AT LEAST ONCE, WENT TO AN ALTERNATIVE DESTINATION

Approximately what time of day did you first encounter parking problems? (Please circle one)

9:00 am	10:00 am	11:00 am	12:00 pm
1:00 pm	2:00 pm	3:00 pm	Other_____

E. This final section of the survey will give us some background information about you and your family. Please answer each question as accurately as possible.

1. In what type of community do you now live? (Please check one)

_____ IN A SMALL TOWN (Less than 2,500 People)

_____ IN A TOWN OR SMALL CITY (Between 2,500 and 25,000 People)

_____ IN A CITY (Between 25,000 and 100,000 People))

_____ IN A LARGE CITY (100,000 to One Million People)

_____ IN A MAJOR CITY OR METROPOLITAN AREA (Over One Million People)

2. How often do you use any type of local bus transit at home? (Please check one)

_____ NEVER

_____ HARDLY EVER

_____ AT LEASE ONCE A MONTH

_____ ALMOST EVERY DAY

3. In what year were you born? 19____

4. Your sex: _____ male _____female

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

_____ ELEMENTARY

_____ HIGH SCHOOL

_____ 1-3 YEARS OF COLLEGE (Includes 2-year degree)

_____ 4-YEAR COLLEGE DEGREE

_____ GRADUATE DEGREE

6. Do you regularly access the world-wide-web/Internet once a week or more often either at home or at work?

[ ] NO

[ ] YES

7. Please check which of the following you carry with you at least ten times a month, on average.

____ A PORTABLE CELLULAR OR DIGITAL PHONE

____ A PERSONAL PAGER OR A PAGER WATCH

____ A LAPTOP COMPUTER

____ A HANDHELD PERSONAL COMPUTER, PALMTOP, OR DIGITAL ASSISTANT

Are any of the above devices used to get traffic information while traveling?

[ ] NO

[ ] YES

IS THERE INFORMATION YOU DID NOT GET ON YOUR RECENT TRIP THAT WOULD HAVE BEEN HELPFUL IN AVOIDING TRAFFIC/PARKING PROBLEMS OR FINDING YOUR WAY AROUND ACADIA NATIONAL PARK?

YOUR CONTRIBUTION TO THIS EFFORT IS GREATLY APPRECIATED.

PLEASE RETURN YOUR COMPLETED QUESTIONNAIRE IN THE SELF-ADDRESSED STAMPED ENVELOPE AS SOON AS POSSIBLE.

University of Maine
Parks, Recreation, and Tourism Program
5755 Nutting Hall
Orono, ME 04469-5755

Appendix C

Sampling Locations

Sampling Locations of Bus Users

Day and Month	Bus Route	Times
29 July	Eden	11:00-7:00
30	Jordan Pond	12:30-8:30
1 August	Southwest Harbor	3:00-11:00
9	Campground	7:00-11:00 and 7:00-11:00
10	Brown Mountain	11:00-6:00
13	Eden	11:00-7:00
14	Southwest Harbor	7:00-11:00 and 3:00-7:00
15	Sand Beach	8:30-12:30 and 4:30-8:30
16	Sand Beach	8:30-4:30
18	Sand Beach	8:30-4:30
19	Eden	11:00-7:00
21	Jordan Pond	8:30-12:30 and 4:30-8:30
22	Campground	11:00-3:00 and 7:00-11:00
24	Blackwoods	11:00-7:00
25	Blackwoods	3:00-11:00
26	Blackwoods	7:00-11:00 and 3:00-7:00
28	Southwest Harbor	7:00-3:00
29	Southwest Harbor	7:00-11:00 and 7:00-11:00
31	Brown Mountain	7:00-3:00
1 September	Brown Mountain	7:00-3:00

Sampling Locations of End Users and Non-Users of ITS Technologies

Day and Month	Bus Route	Times
29 July	Sand Beach	9:00-5:00
30	Visitor Center	9:00-5:00
1 August	Visitor Center	9:00-5:00
9	Visitor Center	9:00-5:00
10	Village Green	9:00-5:00
13	Village Green	9:00-5:00
14	Visitor Center	9:00-5:00
15	Village Green	9:00-5:00
16	Visitor Center	9:00-5:00
18	Jordan Pond	9:00-5:00
19	Sand Beach	9:00-5:00
21	Visitor Center	9:00-5:00
22	Jordan Pond	9:00-5:00
24	Jordan Pond	9:00-5:00
25	Sand Beach	9:00-5:00
26	Jordan Pond	9:00-5:00
28	Sand Beach	9:00-5:00
29	Visitor Center	9:00-5:00
31	Visitor Center	9:00-5:00
1 September	Visitor Center	9:00-5:00