An Assessment of Visitor Surveys: Research Needs and Recommendations

NATIONAL PARK SERVICE

ALTERNATIVE TRANSPORTATION PROGRAM

U.S. Department of Transportation
Volpe National Transportation Systems Center

An Assessment of Visitor Surveys: Research Needs and Recommendations

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E X E C U T I V E   S U M M A R Y

The National Park Service (NPS) Alternative Transportation Program (ATP) requested that Volpe Center staff assess existing survey research on visitor response to alternative transportation systems (ATS) at the national parks. More specifically, the task was to determine what survey data is being collected in support of ATS deployment decisions and provide recommendations for how NPS can improve its data collection efforts. The review involved gathering and reviewing survey data from NPS sources as well as non-NPS sources.[1]

The main finding is that the existing NPS visitor studies are inadequate for assessing visitor response to ATS. As described in this report, questions are not always asked consistently across visitor studies, making comparisons across parks difficult, and a number of the studies do not include a complete set of questions on demographics, visit characteristics, and mobility.

A number of recommendations to enhance the NPS ATP data collection effort are offered. First, an ATP survey research framework is proposed for organizing the NPS data collection efforts (described more fully in Section III). This framework lays out the objectives for an ATP survey research program, along with the tools needed to meet those objectives. Such a framework will provide the NPS with a systematic approach to conducting studies and will provide reliable, consistent visitor data, thus enabling reasoned, informed decisions regarding the deployment of ATS.

In support of implementing the ATP survey framework, the following set of adjustments is suggested:

1. *Reformat the Visitor Survey Card*, adding demographic and transportation-related questions. This relatively minor revision would result in far more useful data for monitoring visitor satisfaction and assessing potential ATS needs.

2. *Develop a standardized, core set of questions on demographics, visit characteristics, sources of travel information and mobility.* This core set of questions would be employed in all visitor studies conducted at the national parks (as appropriate), thus providing consistent, comparable data across the park units.

3. *Develop a standardized approach to visitor studies that are used to a) develop and test ATS prototypes, and b) evaluate existing ATS at the parks.* Consistent tools and methods should be employed, and to the extent that it is possible, a core set of evaluative questions should be included across all visitor studies that are focusing on the development or the evaluation of ATS.

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[1] Non-NPS sources of data include studies conducted by the Western Transportation Institute and The Institute for Transportation Studies, among others. See Appendix A for a complete listing of sources.

TABLE OF CONTENTS

I.   INTRODUCTION

The National Park Service (NPS) Alternative Transportation Program (ATP) requested that Volpe Center staff assess existing survey research on visitor response to alternative transportation systems (ATS) at the national parks, with the objective of developing a comprehensive ATS survey research program. The assigned task involved gathering and reviewing survey data from NPS sources as well as non-NPS sources.[2]   The review required summarizing the utility of existing information and identifying the types of information (including demographic, visit characteristics, mobility and ATS) that are needed but are missing from existing studies.

This review of survey research ties in with the more comprehensive data collection effort being conducted by the NPS ATP Data Needs Workgroup (namely the *NPS ATP Data Collection and Analysis Plan*). While the Data Needs Workgroup is summarizing and analyzing *all* ATP-related data currently being gathered, this review is more narrowly focused on assessing ATP visitor survey data.

Scope of the Review

For the purposes of this review, a diverse body of survey research was considered in analyzing visitor studies conducted over the last 15 years. With respect to the NPS sources of data, the following studies were reviewed:

> • The National Park Service Comprehensive Survey of the American Public
>
> • Visitor Survey Card, distributed as part of the Visitor Services Project
>
> • ~30 in-depth Visitor Studies (Visitor Services Project)
>
> • ~7 other NPS Visitor Studies[3]

In addition, approximately eight visitor studies sponsored by non-NPS sources were reviewed. The following section presents findings on the quality of the survey research addressing visitor response to ATS at the national parks.

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[2] See Appendix A for a complete listing of sources.
[3] Each year there are approximately 30 to 40 visitor studies conducted at national park units that are OMB-approved. Roughly one-third of these are part of the Visitor Services Project, and in this report I refer to the remaining two-thirds as "other NPS visitor studies." For "other NPS visitor studies," the extent of NPS involvement varies.

II. FINDINGS

A. National Park Service Visitor Studies

1. National Park Service Social Science Program

The objectives of the National Park Service Social Science Program are "to conduct and promote state-of-the-art social science related to the mission of the National Park Service, and deliver usable knowledge to NPS managers and the public."[4] Some of the main activities conducted in support of this mission include:

- Technical assistance to the parks, NPS clusters and regions, the Department of Interior and NPS partners in the form of technical advice on survey design and implementation

- Research to meet national needs

- Visitor Services Project, which is responsible for conducting more than 130 in-depth visitor studies

- Visitor Survey Card, a mail-back customer satisfaction card distributed annually at all Parks as part of the Visitor Services Project

- Social Science Research Review Series

- Urban Recreation Research Center

For the purposes of this report, a number of studies administered by the NPS Social Science Program are reviewed. First, findings are presented on a national study, *" The National Park Service Comprehensive Survey of the American Public,"* followed by findings on visitor studies conducted as part of the NPS Visitor Services Project (VSP), as well as other NPS visitor studies.

NPS Comprehensive Survey of the American Public

NPS conducted its first comprehensive survey of the American public in 2000. Survey data were obtained by interviewing adult members of 3515 households in the U.S. between February and May 2000. Respondents were randomly selected and interviewed by telephone. Through the use of specific questions, NPS categorized respondents as either visitors or non-visitors.

The NPS Comprehensive Survey is a well designed study that poses questions on a broad range of topics relevant to the national parks, including among others, reasons for visiting or not visiting the parks, the collection of fees, use of information sources, and opinions about a number of different park management policies. The survey also includes a fairly

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[4] See http://www.nps.gov/socialscience

complete set of demographic questions. However, it does not include questions on the use of wireless communication devices, which in combination with other demographic questions, gives further insights into the profile of NPS visitors.

The national survey provides a number of interesting insights regarding the importance of transportation and mobility issues in visitor's evaluation of their experience at the national parks. For example, respondents were asked the extent to which they agree or disagree with a list of twelve statements on why people do not visit the national parks more often. The top four reasons cited by visitors included: hotel/food costs too high (48% agree), too crowded (47%), difficult to find parking (42%), and not enough known about NPS units (41%). In an open end question on what is the main problem facing the national parks, visitors stated overcrowding or commercialization (25%) more than any other problem. Among non-visitors, 38% said "no idea or no interest," but 13% mentioned "crowding or commercialization" (this item was mentioned more than any other).

The NPS Comprehensive Survey of the American Public gives a good overview of visitor and non-visitor opinions on a diverse set of issues facing the national parks. As this study highlights, national survey data can shed light on the kind of transportation and mobility problems that the public faces when it visits the national parks, and thus can provide direction on issues that need to be probed further at the park-level. In addition, the demographic data collected in the national survey contributes to an understanding of the NPS visitor base, by providing information on the characteristics of both those who visit and those who do not visit the national parks.

2. Visitor Services Project

VSP Visitor Survey Card

As part of the Visitor Services Project, the NPS Social Science Program implemented a mail-back customer satisfaction card in Fiscal Year 1998. The survey card has a standardized format and is used annually by all the national parks to "systematically measure and report performance related to the Government Performance and Results Act (GPRA) goals …visitor satisfaction and …visitor understanding and appreciation."[5] Using a scale of very good, good, average, poor, and very poor, respondents are asked to rate a variety of facilities (i.e. Visitor center, exhibits), services (i.e. park map or brochure, Ranger programs) and recreational opportunities (i.e. learning about nature, history or culture). In addition, respondents are asked an open-end question on "what is the national significance of the park," and they are provided with space for additional comments on any of the park's facilities, services or recreational opportunities.

The main strength of the Visitor Survey Card is that it provides data for all the parks, and since it is standardized, the data can be aggregated in different ways (including regionally and nationally). Thus, results can be compared across the park units, or across regions and they can be compiled nationally to obtain overall measures of satisfaction with the

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[5] See http://www.nps.gov/socialscience

national parks.[6] To take advantage of this strength, however, NPS needs to ensure, in its methodology, that the Visitor Survey Card is administered at the same time of year at all the parks. In this way, valid conclusions can be drawn when aggregating the data or making comparisons across parks.[7]

In its current form, the Visitor Survey Card does not contribute to an understanding of ATS needs. The Survey Card does not include any demographic questions, and has only one mobility-related item; respondents are asked to rate "walkways, trails, and roads." As with other questions on the Survey Card, it is not clear what this specific item is measuring, for the item "walkways, trails and roads" confounds what could be three separate evaluations. In general, the questions used on the Visitor Survey Card are not very informative. While they provide a general sense of whether or not visitors are satisfied, there are no clues about how services or facilities might be improved.

However, the Visitor Survey Card was never intended as a mechanism for measuring visitor response to ATS, and it is not the appropriate tool for such a task. Due to the small size of the card, it is not possible to probe visitors' opinions in-depth. Nonetheless, the Visitor Survey Card could be turned into a far more effective means for gathering data than is currently the case. With small improvements, such as adding some key demographic and mobility-related questions, the Visitor Survey Card would provide NPS with extremely valuable data on who its visitors are and how they assess mobility within the parks.

VSP In-Depth Visitor Studies

As part of the Visitor Services Project, the NPS Social Science Program also conducts approximately ten in-depth studies per year at different park units. Since 1988, over 130 in-depth studies have been conducted. NPS tries to ensure that a variety of parks are surveyed. The primary purpose of these studies is to provide park managers with accurate data on their visitors – who they are, what they do, and their needs and opinions.

The survey methodology is similar across the in-depth visitor studies. Mail-back surveys are distributed at one or more sites at the park. Visitors are greeted, introduced to the study and asked to participate. If visitors agree to participate, a brief two-minute interview ensues where data is gathered on group size, group type, and age of the respondent. Individuals are given the survey and asked their name, address and telephone number in order to mail them a thank you/reminder postcard. Visitors are asked to complete the survey either during or after their visit and mail it back. In general, response rates are quite high, averaging between 70% and 80%.

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[6] See *Serving the Visitor 2000: A Report on Visitors to the National Park System*, The National Park Service Visitor Services Project.

[7] For example, the *National Park System 2000 Visitor Survey Card Data Report* states that survey cards were distributed during the period February 1 – August 31. It is unclear whether all parks were systematically distributing cards during this entire period, OR whether some parks were distributing cards during their off–peak season in February, while other parks were distributing cards during peak season in July or August. Ideally, visitors at all parks should be sampled during both peak and off-peak seasons.

Volpe Center staff reviewed roughly thirty of the NPS in-depth visitor studies. While these studies are a valuable source of information, this data collection effort could be enhanced to provide a richer, more systematic set of data. In general, the review disclosed gaps in the data collection, as well as inconsistencies in question wording. The following section will discuss the quality of the data collected on four broad topic areas, including:

1. Demographics and other Visitor Profile Items
2. Visit Characteristics
3. Sources of Visitor Information
4. Mobility and ATS

Demographics and other Visitor Profile Items

Having a complete set of demographic questions is critical to an understanding of who the visitors are and the nature of visitor transportation needs at the parks. Many of the in-depth studies conducted as part of the Visitor Services Project do not have complete demographic information. There are a number of basic demographic questions, such as gender, education, income, race, ethnicity, English as a primary language, and any group member with a disability, that are not always included in visitor studies. In the sampling of studies reviewed, other questions related to ATS are not asked, including: Internet access and frequency of use, use of wireless communications, and use of public transit at home. These latter questions would be very useful in developing a visitor profile and providing information on "lead adopters," or visitors who tend to be the first to adopt innovative services. The demographic questions that *are* asked consistently across all studies are group size, group type (family/friends/alone), age, and residence (state/country).

Visit Characteristics

Similar to demographics, it is important to have a complete set of questions on visit characteristics. In order to assess potential ATS needs, NPS has to understand, for example, how visitors are arriving at the parks and what nearby sites (if any) they are visiting as part of their trip. Having a complete picture on visit characteristics is essential to implementing an ATS that accommodates the needs of visitors. Important questions that were found in most studies include: the number of times you have visited the park, the number of days/hours spent at the park, and the sites visited within the park. Apart from these questions, however there are a number of questions that were asked only in some surveys, but not in others. These include:

- Transportation to park
- With a guided tour or not
- Primary reason for trip (business/pleasure)
- Route to the park
- Specific entrances/exits used
- Number of times entered park
- Visit which nearby sites (outside the park); length of time in the area
- Town you started your trip day you arrived/your destination the day you left

To the extent that such questions are omitted, the in-depth visitor studies do not consistently address the topic of visit characteristics.

Sources of Visitor Information

How visitors obtain information about the parks is extremely useful data and can help guide NPS efforts on how to improve the dissemination of information on facilities and services in general (and more specifically, information on ATS). Nearly all the in-depth visitor studies reviewed for this project asked respondents about their pre-trip sources of information regarding the parks, as well as sources of information during their trip. In general, respondents are asked to check which sources of information they used *prior* to their trip, and in a separate list question, they are asked to check the sources of information used *during* the trip. For each source used, they then rate the importance of the source and the quality (on a 1 to 5 scale). While valuable data has been collected, the weakness with these measures is that the list of sources is sometimes incomplete and important items are omitted. In addition, the studies do not address the content of the information; that is, what specific type of information (specifically regarding transportation or mobility) would the visitors find useful? Are they interested in obtaining alternate routes to their destination, or the location of rest stops, for example?

Mobility and ATS

Mobility questions enable the NPS to evaluate the quality of the visitors' experience traveling within the park, and their ability to see and do all they had planned. The in-depth visitor studies, however, do not consistently measure mobility issues. Mobility questions are asked in some surveys, but not others. Examples include:

- Did you have trouble locating the park?
- Did you have trouble finding your way around the park?
- Anything you wanted to do, but were unable to do?
- Did you have to postpone doing anything? Why?
- How crowded did you feel during your visit? (by people and other vehicles)

The in-depth visitor studies also include a three-part question for measuring opinions on the services provided at the park. Respondents are asked whether they use a given service, and if yes, they rate the importance and quality of the service (similar to the question on sources of information used during the trip). Transportation-related items sometimes listed in this question include roads, park signs, trails, parking lots, and shuttle service. However, the items used vary across the studies; there is no consistent set of items that is always asked. Another weakness with this question is that it provides only a general evaluation, with no specific information on why visitors might be dissatisfied with a service. For example, if "park directional signs" receives a low rating, it might be due to a number of different factors, such as the signs are not clear, or there are not enough of them, or the signs are poorly located. As the question is currently asked, the

8

data do not allow one to determine which, if any, of these reasons might be the source of visitors' dissatisfaction with the signs.

There are a number of different ATS questions that are used in the in-depth visitor studies.[8] In one question format, respondents are queried on their preferences for a reservation system vs. a shuttle system vs. a first come, first serve system. Other parks employ questions that ask specifically about willingness to use a shuttle service, and how much they would pay for such a service. Similar to findings described earlier, there is a lack of consistency across the studies in the way in which these ATS questions are asked. From one study to the next, there tends to be slight alterations in wording for the same general question. More problematic, however is the reliability of the data. Given that respondents are asked questions about their potential use of a future service, their responses are speculative. If visitors have not had personal experience with the service, it will be difficult for them to predict future use without being given very specific examples of the service under consideration.

3. Other NPS Visitor Studies

For the purposes of this assignment, approximately eight "other NPS visitor studies" were reviewed. These include a diverse set of special purpose studies assessing visitors' experiences at the national parks. While some studies were general in nature, others had a particular focus, such as visitor crowding.[9] The studies employed a diverse set of survey methodologies, including mail-back surveys, personal interviews and observation.

A number of these studies provided an in-depth evaluation of current ATS at the parks. For example, in the 1999 study, "Passenger Characteristics and Experiences with the Island Explorer Bus," respondents were queried on a range of issues pertaining to their experience with the shuttle bus at Acadia National Park, and they were asked to evaluate the quality of the service on a number of specific dimensions. Some specific measures included in the study are:

- Did the bus routes take you to all the places you wanted to go?
- Was the frequency of buses sufficient to meet your needs?
- Did the bus get you to where you wanted to go on time?
- Were you able to locate the bus stops easily?
- Was there enough storage on the bus for your belongings?

The Island Explorer Bus survey provides a good example of an in-depth evaluative study of ATS. It illustrates how well designed studies can provide NPS with valuable feedback on the quality of its ATS service. In addition, the Acadia study demonstrates the advantages of specific, detailed questions when assessing ATS, beyond simply tacking a few questions on the VSP in-depth visitor studies.

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[8] For the purposes of this paper, I have defined ATS questions as those questions that ask specifically about the use of (or future willingness to use) public transportation within (or to) the Parks, as well as questions that address setting limits on the number of visitors in the park (i.e. through a reservation system).

[9] See Appendix A for complete listing of "other NPS visitor studies" reviewed for this project

9

B. Non-NPS Sources of Data

In order to gain insights on the type of data being collected at the parks from non-NPS sources, approximately eight studies were reviewed, including surveys conducted by the Western Transportation Institute, the Institute of Transportation Studies and the University of Maine, among others. [10] In general, these surveys provide an in-depth look at transportation issues at the parks, and are a valuable resource to NPS. The following section highlights some of the valuable data that is collected by these organizations, but that is not routinely collected by NPS.

Sequoia and Kings Canyon National Parks Transportation and Technology Study, 2002

This study includes a detailed set of questions on transportation and mobility issues within Sequoia and Kings Canyon National Park. With regard to mobility, respondents were asked the general question of how crowded they felt during their visit, a question used in some of the NPS in-depth visitor surveys. This survey went one step further, however, by also asking respondents to rate the level of congestion at specific areas of the park, including roads leading to the park, roads inside the park, the parking lots, and trails. In this way, the study can reveal specific areas where crowding is most problematic.

In addition, the Sequoia and Kings Canyon National Park study contained a number of questions on ownership and use of technology, exploring reasons for the use (or lack of use) of various devices. For example, for a number of communication technologies (including GPS, Highway Advisory Radio, and PDA, among others), respondents were asked if they use these, and then why or why not. Such a measure provides useful data on the best ways to communicate information to visitors, as well as information on different types of visitors – those who are "lead adopters" of innovative services, and those who are less likely to use such services.

Greater Yellowstone Rural Intelligent Transportation System Priority Corridor Project, 1997 (GYRITS)

For this study, data was collected at fourteen different sites in Montana, Wyoming and Idaho. In particular, this study did a thorough job addressing the issue of traveler information needs, both pre-trip and during the trip. While NPS studies include a question on the *ways* in which respondents obtained park information (did they use a tour book, friends/relatives, the Internet, or some other source?), the GYRITS study asked respondents to rate the importance of different *types* of information, including information on the best route to your destination, length of time to destination, location of accidents/incidents etc. Such questions can help assess the types of information that would be most useful to visitors and enhance their mobility during the trip. In addition,

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[10] See Appendix A for complete listing of Non-NPS Studies reviewed for this project.

the study included a question on the ways in which respondents would like to receive this information in the future, thus providing insight on the most effective communication mediums.

Yosemite Area Traveler Information (YATI) System Field Operational Test, 1996
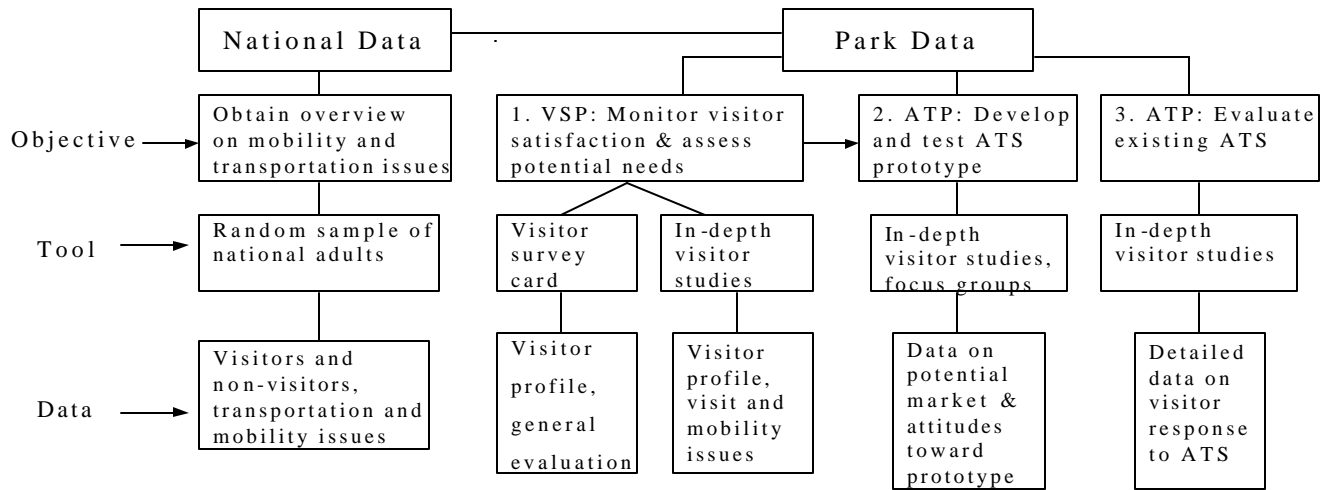
The Yosemite Area Traveler Information System Field Operational test employed a comprehensive approach to studying the deployment of ITS at Yosemite National Park. There were three main components to the study: a user (visitor) evaluation, an institutional evaluation and a systems performance evaluation. The user evaluation included surveys administered to a sample of visitors in their automobiles, as well as to a separate sample of kiosk users and web users (of the Yosemite web site). Through the use of these targeted samples, researchers gained specific insights regarding these different communication mediums.

While there were problems associated with the YATI field test, the surveys included questions that might be useful to future NPS data collection efforts. For example, the visitor survey included a number of valuable questions on visitor mobility, such as opinions about level of traffic congestion, the amount of available parking, the number of tour buses, amount of difficulty getting around the Park, and the management of vehicle traffic. Moreover, for a variety of different communication mediums – kiosks, web site, changeable message signs, and highway advisory radio – respondents were asked about the usefulness of the information, what type of specific information was obtained, and in what ways (if any) did the information cause a change in behavior. In addition, the kiosk and web site user samples were also asked very specific questions regarding the type of information received, as well as the type of information they would like to obtain from these sources in the future.

In sum, these non-NPS sources of data are a valuable resource for NPS and include some important questions that the NPS should consider incorporating into the core set of questions for its in-depth visitor studies. More specifically, the non-NPS studies offer good examples of detailed questions on crowding and mobility, the ownership and use of communication technologies, the importance of different types of traveler information, and the effect of traveler information on visitor behavior.

III CONCLUSIONS

Currently the state of survey research at the National Park Service is inadequate for assessing customer response to ATS. As described in this report, questions are not always asked consistently across studies, making comparisons difficult, and a number of the studies do not include a complete set of questions on demographics, visit characteristics, and mobility. Consequently, it is proposed that NPS adopt a comprehensive ATP survey research framework to organize its ATS data collection efforts. Such a framework would provide NPS with a systematic approach to conducting studies and would provide reliable, consistent visitor data, thus enabling the NPS to make reasoned, informed decisions regarding the deployment of ATS. The framework builds on the foundation laid by the Visitor Services Project (VSP), while strengthening the ATP component of NPS visitor studies.

	National Data		Park Data		
Objective	Obtain overview on mobility and transportation issues	1. VSP: Monitor visitor satisfaction & assess potential needs		2. ATP: Develop and test ATS prototype	3. ATP: Evaluate existing ATS
Tool	Random sample of national adults	Visitor survey card	In-depth visitor studies	In-depth visitor studies, focus groups	In-depth visitor studies
Data	Visitors and non-visitors, transportation and mobility issues	Visitor profile, general evaluation	Visitor profile, visit and mobility issues	Data on potential market & attitudes toward prototype	Detailed data on visitor response to ATS

ATP SURVEY FRAMEWORK

Figure 1

Figure 1 describes the proposed ATP survey framework. It lays out the type of data that needs to be collected and provides a map for how the different components of the data collection effort fit together. This framework outlines the objectives of a comprehensive research program, along with the tools needed, and the data that would result from such an effort.

As Figure 1 illustrates, the two main components of the data collection framework include national data and park data. With respect to national data, surveys of the public should be designed that investigate overall mobility and transportation issues at the parks,

and these surveys should be administered on a regular basis in order to monitor trends. At the park-level there are three distinct data collection efforts:

1. Visitor Services Project (VSP) and other in-depth visitor studies: Monitor visitor satisfaction and assess potential ATS needs
2. ATP: Develop and test ATS
3. ATP: Evaluate existing ATS at parks

The VSP Visitor Survey Card and in-depth visitor studies are the tools for monitoring visitor satisfaction (element 1 above). Data collected from these sources are also useful in determining whether or not a park needs ATS and can provide preliminary data on the type of ATS appropriate to the park (hence the arrow in the diagram, from "Monitor Visitor Satisfaction…" to "Develop and test ATS"). However, to refine and test a new ATS (element 2), focus groups or additional in-depth studies may be necessary. In addition, to evaluate existing ATS (element 3), specific in-depth visitor studies are needed to probe visitor response to all aspects of the ATS.

A. National Data

National survey data provide an understanding of the demographic profile of visitors, as well as a broad overview of how mobility and transportation issues factor into the visitors' trip to the national parks. In addition, one of the strongest assets of national-level data is that it provides information from both visitors and **non**-visitors, so that the NPS can gain insights into the types of people who are NOT visiting the parks, as well as those who are. As described earlier in this report, the NPS study, "*Comprehensive Survey of the American Public*," is a valuable first step in the collection of national data, and the NPS needs to continue with a program of national studies. By conducting national surveys on a regular basis (every-3-5 years), the NPS can monitor trends on a wide range of transportation and mobility issues pertaining to the parks, along with addressing new issues that may arise.

While national level data provides important contextual information, there are limitations to its value. Clearly, different parks have different ATS needs, and so it is impossible to use national level data to determine the specific needs of individual parks. Visitor surveys administered at the national parks, however, can be tailored to address the specific issues relevant to individual parks or groups of parks.

B. Park Data

Monitoring Visitor Satisfaction

In the proposed ATP survey framework, there are three components to the data collection at the parks. First, there is a systematic, ongoing effort to monitor visitor satisfaction and assess potential ATS needs. Using well-designed surveys administered at the parks, NPS can better understand the demographic profile of visitors and their transportation needs.

The Visitor Services Project (including the Visitor Survey Card and the in-depth visitor studies) is an example of such an effort.[11] However, as noted earlier in this report, the VSP in-depth visitor studies do not consistently ask the same questions, and these studies are often missing questions of interest. For the purposes of monitoring visitor satisfaction, it is recommended that a core set of questions be used across all the parks being surveyed, thus maximizing the ability to make comparisons across the parks. The "core" would include a complete set of questions on demographics, visit characteristics, sources of information, and mobility, as well as other topic areas. Such surveys would provide the NPS with a more comprehensive set of data in which to evaluate visitor satisfaction with the facilities and services at the parks.

In addition to this ongoing research effort, there are two components to the park-level data collection that are specifically tailored to the individual parks: the development and testing of ATS prototype and the evaluation of existing ATS.

Development and Testing of ATS Prototype

When there is a need for a park unit to develop and deploy ATS, a park would initiate a sequence of research steps that would enable it to develop and promote an ATS product appropriate to specific park needs. The following list highlights critical steps in this process[12]:

- ATS Service Planning Development: Conduct focus groups with visitors, as well as surveys of visitors to assess the specific needs of the parks and to develop a service that would best meet those needs. If in-depth studies have already been conducted at the park, such data may serve as an important first step in the research process. Moreover, if funds are limited, it may be necessary to forego focus groups and rely on the detailed input of the NPS staff at the parks.

- ATS Prototype Testing: During this stage, a prototype service is introduced and visitors' use of the service is assessed. It is during this testing that the "bugs" are identified and worked out, and visitor feedback is obtained through in-depth surveys or focus groups. Depending on these evaluations, the service prototype will be further refined and tested.

The objective is to provide the NPS with a systematic approach, using standardized survey procedures, to develop ATS at the parks. To the extent that it is possible, it is recommended that certain core elements of the survey content be made comparable across park studies. However, it is clear that different parks have different ATS needs, and so the survey content will have to be tailored to reflect those specific needs.

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[11] However, as described in this report, there are a number of weaknesses with this current survey research program. In the Recommendations section, a number of suggestions are offered for ways in which this ongoing data collection can be enhanced.

[12] Lappin Jane E., Paula Figoni, and Suzanne M. Sloan, "A Primer on Consumer Marketing Research: Procedures, Methods and Tools," U.S. DOT Volpe Center, March 1994. Prepared for Office of Policy Development, FHWA.

Developing a uniform procedure with rigorous standards for data collection will result in the collection of high quality data across all park units, and will enable the NPS to make reliable predictions regarding visitor response to the ATS service.

Evaluation of Existing ATS

Park units that have implemented ATS will want to measure visitor satisfaction with the service. Such surveys need to be specifically tailored to assess the service being evaluated, but to the extent that it is possible, a core set of evaluative questions would be developed. The data collected from such an effort will provide valuable information on who is (and consequently who is not) using the service, as well as an evaluation of all aspects of the service. Using in-depth surveys, NPS would gain insights on potential improvements or alterations in service. In addition, the findings would be of assistance to similar parks that are in the process of developing ATS.

This current review of survey data suggests that the NPS does not consistently evaluate all aspects of satisfaction with ATS implemented at the parks. While the VSP in-depth visitor studies contain a few questions assessing satisfaction with ATS, the questions used are very general and so are inadequate for obtaining an in-depth understanding of visitor response to the service. One example of a well-designed NPS survey evaluating ATS is the Island Explorer Bus Passenger Study (1999). Likewise, the University of Maine recently conducted a study (Acadia National Park Traveler Survey, 2002) that provides a good example for the type of in-depth evaluative questions needed when assessing an ATS service. This type of in-depth survey needs to be conducted routinely at all parks with ATS.

In sum, the ATP survey framework provides a road map for data collection efforts. As the framework illustrates, it is important to conduct research through sampling at both the national and the park-level. Moreover, within the parks, the need to distinguish among three separate survey research agendas – monitoring visitor satisfaction, ATS product development, and ATS evaluation – is critical, for each of these requires specific, tailored, research instruments.

IV RECOMMENDATIONS

The following are recommendations for specific steps that to enhance the ATP survey data collection effort, enabling NPS to make reasoned, informed decisions regarding the deployment of ATS. This set of recommendations pertains to survey specific adjustments suggested in support of aligning the NPS visitor studies according to a standard approach with consistent tools.

National Data

1. Continue to conduct national surveys. Continued periodic surveys would contribute to a repository of national data that NPS could then use to monitor trends on visitor satisfaction at the national level. Moreover, NPS could use national surveys as an opportunity to address topics that were not covered in the 2000 survey.

- **Further probe the issue of crowding and parking.** Respondents raised these as concerns in the 2000 survey, so future surveys should explore these issues in more detail.

Park Data

A. Visitor Services Project (VSP) and Other In-depth Visitor Studies

1. Reformat the Visitor Survey Card. To accommodate new questions, the card could be made slightly larger (use a bi-fold or a tri-fold), and/or one of the open-end questions could be dropped.

- **Add demographic questions**. At a minimum, gather data on visitor age, group type, group size, and education.

- **Add questions regarding mobility**. Examples of such questions include mode of transportation to the park and levels of traffic congestion or crowding experienced at the Park.

With respect to the ATP survey framework, this would provide important data on who the NPS visitors are, and how easily they are able to get around the park. Currently, NPS only learns about the demographic profile of its customers through in-depth surveys conducted at a selection of parks, so adding demographics to the Visitor Survey Card would provide NPS with a more comprehensive understanding of its visitor base (since this card is distributed annually to all parks). In addition, it would enable NPS to determine whether demographic factors are related to how customers rate the park services and facilities. By providing a general "read" on issues of mobility at the national park units, the Visitor Survey Card would also signal the potential need for ATS at a park or improvement on existing service. In such circumstances, NPS would pursue a specific research agenda tailored to the park (either for ATS product development or ATS evaluation).

2. Create a core set of questions on demographics, visit characteristics, sources of information and mobility that can be employed across all in-depth visitor studies (as appropriate). This involves compiling questions that are currently employed by the in-depth visitor studies, as well as adding new questions to fill in the gaps in data collection. As a result, complete, consistent data will be collected for each park surveyed, allowing the NPS to better monitor visitor satisfaction and assess potential ATS needs at the parks. Moreover, by employing a core set of questions, the NPS will be able to make comparisons across parks and to aggregate data nationally. While certain questions will be appropriate for some parks and not others, the parks should use the complete core set of questions whenever possible.

3. Avoid speculative questions on ATS. If respondents are asked speculative questions about their future use of a service (i.e. shuttle) with which they have had no previous personal experience, the data will be highly unreliable. Instead, we suggest using stated preference questions, where respondents are presented with specific examples of different types of services and costs.[13] The results will be more reliable when respondents can react to a specific, detailed service.

4. Ensure that the Visitor Survey Card is administered at the same time of year across all the parks. Ideally, each park should sample visitors at various points during the year in order to obtain a random sample of visitors during both peak and off-peak seasons.

5. To the extent that the NPS has influence over survey research conducted by other organizations and institutions with NPS visitors, it should use these studies to further the goals in the proposed ATP survey framework. NPS needs to consider the ways in which it can work with other organizations to further the aims of the research agenda presented in the ATP survey framework. For general visitor studies conducted by outside sources, for example, NPS should ensure that the core set of questions developed for the Visitor Services Project is also employed in these surveys whenever possible.

B. ATP

1. Develop a standard approach to studies that are used to a) develop and test ATS prototypes, and b) evaluate existing ATS at the parks. A standardized approach will ensure that all park units are using the same methodology when conducting studies, resulting in the collection of high quality data that can then be used to make reliable predictions about visitor response to ATS across the park units. Ideally the parks would collect both qualitative (i.e. focus groups) and quantitative (surveys) data, and similar procedures would be instituted across parks for collecting the data. When possible, a common set of core questions would be used, thus enabling comparisons to be made across parks.

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[13] Examples of trade-off questions are found in the Colonial National Historical Park Alternative Transportation System Study (Summer 2002). For each proposed ATP service under study, respondents were asked three different experiments using stated preference questions. In each experiment, features such as the level of service and cost were varied. Through this method, it is possible to ascertain the level of service and cost that is most attractive to potential users of the service.

V   NEXT STEPS

The purpose of this section is to propose five new NPS projects in support of the development of improved customer information for support of the national ATS program. These projects are presented in order of their importance to ATS.

1. Develop a standard set of core questions to be used in all visitor studies. In this way, there is complete, consistent data for all parks surveyed, allowing NPS to better monitor visitor satisfaction and assess potential ATS needs. Moreover, by employing a core set of questions, NPS will be able to make comparisons across parks and to aggregate data nationally.

2. Revise the Visitor Survey Card. By simply adding a few demographic and transportation-related questions, the Visitor Survey Card will become a much more valuable tool in assessing visitor satisfaction and potential ATS needs.

3. Develop a standardized approach to testing ATS prototypes at the parks. A standardized approach (with consistent tools and methods) will provide the NPS with reliable data on which to base decisions regarding the deployment of ATS. To the extent that it is possible, develop a core set of questions that can be used across parks.

4. Develop a standardized approach to evaluating existing ATS at the parks. Likewise, when evaluating existing ATS, a standardized approach results in high quality data on visitor response to all aspects of the ATS service. The NPS can then make confident decisions regarding ways to improve or modify the service.

5. Develop a standard set of core questions to be used in the next national survey. Continued periodic surveys employing a standardized set of core questions would contribute to a repository of national data that NPS could then use to monitor trends on visitor satisfaction at the national level.

The following is the list of detailed activities associated with each of the five projects. The projects are ordered with respect to importance as well as cost-efficiency.

1. In-Depth Visitor Studies and all other Studies

- <u>Review NPS in-depth visitor studies</u>.   A review of visitor studies is necessary in order to assemble the standard set of core questions. More specifically, a complete set of standardized questions on demographics, visit characteristics, sources of visitor information, and mobility issues will be developed. New questions will be designed to fill in gaps in the data.

- Develop protocol for pre-testing the new instrument. In consultation with the appropriate NPS staff, determine the number of pre-tests, which parks will conduct the pre-tests, and the overall survey methodology.

- Meet with appropriate NPS staff to review proposed set of core questions and to discuss the pre-test. Revise core set of questions as necessary, and work with NPS staff to prepare for pre-test.

- Analyze Pre-test data. Review findings from the pre-test and revise the core set of questions as necessary (in consultation with the appropriate NPS staff).

2. VSP Visitor Survey Card (VSC)

- Identify standard set of demographic questions and transportation-related questions to be incorporated on VSC.

- Develop alternative format(s) for VSC, incorporating new, standardized demographic and transportation-related questions.

- Develop protocol for pre-testing the new instrument (how many pre-tests, which parks, survey methodology).

- Meet with appropriate NPS staff to review alternative format(s) for VSC and to discuss pre-test.

- Revise VSC; work with appropriate NPS staff to prepare for pre-test, and pre-test VSC.

- Analyze Pre-test data. Review findings from the pre-test and revise the VSC as necessary (in consultation with the appropriate NPS staff).

3. ATP: Developing and testing ATS prototypes

- Review existing NPS approaches to developing and deploying ATS prototypes. A review of existing studies and their methodologies is necessary in order to determine the best approach for future studies. Determine the extent to which it is possible to create a core set of questions that can be used across park units in the process of developing similar ATS.

- Develop a standardized approach to conducting studies on the testing and deployment of ATS prototypes.

- Meet with appropriate NPS staff to discuss proposed approach to conducting studies on the testing and deployment of ATS.

4. ATP: Evaluating existing ATS at the parks

- Review existing NPS approaches to evaluating ATS at the parks. A review of studies and their methodologies is necessary in order to determine the best approach for all future studies. In addition, to the extent that it is possible (that is, to the extent that similar ATS are being deployed at the parks), develop a core set of questions evaluating ATS that can be used across park units. The Island Explorer Bus Passenger Study and the Acadia National Park Traveler Survey can serve as models for the types of evaluative questions to be included in a core set.

- Develop a standardized approach to conducting studies that evaluate existing ATS.

- Meet with appropriate NPS staff to discuss proposed approach to conducting studies that evaluate existing ATS at the parks.

5. National Survey

- Review "NPS Comprehensive Survey of the American Public," assembling a standard set of questions to be used in all future national surveys and identifying new content for topics not addressed in the 2000 survey and topics that require further probing.

- Kick-Off meeting with appropriate NPS staff to discuss:
  - a standard set of questions to be included in future national surveys.
  - topics / issues NPS would like to see addressed in the next national survey.

- Design survey instrument, incorporating standard set of questions and new content and meet with appropriate NPS staff to review draft of questionnaire.

- Revise questionnaire.

20

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