



Expedited Approval for NPS-Sponsored Public Surveys

1. Project Title Submission Date:	Transportation Study: Colonial National Historical Park	April 22, 2008
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2. Abstract:	In 2004 Colonial National Historical Park initiated a demonstration shuttle service that linked key visitor attractions in the area, including the Colonial Williamsburg Visitor Center, Historic Jamestowne and Yorktown. The park plans to operate the service through 2010, and over the course of the next two years it will develop a business plan for the type of service that will be sustainable after 2010. As part of the effort to develop a business plan, a multi-year operations evaluation will be conducted, including the administration of a visitor survey among users of the shuttle service. In order to make informed decisions regarding the shuttle system, the park needs more information on how visitors are using the service and their level of satisfaction with the service. A visitor survey conducted among users of the shuttle system will provide valuable data for the business plan, in addition to providing feedback that can be used to improve the service.
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(not to exceed 150 words)

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Project Information

5. Park(s) Where Research is to be Conducted: Colonial National Historical Park

6. Survey Dates: 7/10/09 (mm/dd/yyyy) to 7/13/09 (mm/dd/yyyy)

7. Type of Information Collection Instrument (Check ALL that Apply)

- Mail-Back Questionnaire On-Site Questionnaire Face-to-Face Interview Telephone Survey Focus Groups

Other (explain) _____

8. Survey Justification: (Use as much space as needed; if necessary include additional explanation on a separate page.) Social science research in support of park planning and management is mandated in the *NPS Management Policies 2006* (Section 8.11.1, "Social Science Studies"). The NPS pursues a policy that facilitates social science studies in support of the NPS mission to protect resources and enhance the enjoyment of present and future generations (National Park Service Act of 1916, 38 Stat 535, 16 USC 1, et seq.). NPS policy mandates that social science research will be used to provide an understanding of park visitors, the non-visiting public, gateway communities and regions, and human interactions with park resources. Such studies are needed to provide a scientific basis for park planning, development, operations, management, education, and interpretive activities.

This is a survey of users of the shuttle system at Colonial NHP. Colonial NHP began a demonstration shuttle service in 2004 (with service limited to two-hour headways) and expanded the service in 2005 (to hourly headways). Full service operation began in April 2006. NPS management at Colonial NHP wishes to learn how visitors learned about the shuttle system and what motivated them to use it, how they use the shuttle system (e.g., where they park to access the system, how many segments of the system are utilized by an individual user, what attractions are visited by use of the system), and what are users' positive and negative reactions to the service. The user survey will provide critical input to development of an *operations and business plan* which will help guide NPS management to make a decision to sustain the existing shuttle system, modify the shuttle system, or terminate the shuttle system when earmarked money runs out in 2010.

To date, Colonial NHP has not conducted systematic survey research to obtain feedback from shuttle users, and so data does not exist to address the research questions. In developing the survey, the Volpe research staff reviewed the previous studies conducted at Colonial National Historical Park, including a 2001 Visitor Study (The Visitor Services Project, Report #126) and the ATS Feasibility Study (2004).

The 2001 Visitor Study conducted by the NPS Visitor Services Project surveyed visitors at the Jamestown Visitor Center parking lot and the Glasshouse parking lot. Visitors were asked to complete the survey either during or after their visit and to return it by mail. The study provided data on visitor demographics, trip and visit characteristics, individual activities and use of park resources, and evaluations of park services.

As part of its Alternative Transportation System Feasibility Study, a Colonial NHP visitor survey was conducted in 2002 (a mail survey). The purpose of this stated preference survey was to identify the key factors influencing the choice of bus use by visitors to the area and to use that information to estimate potential demand for these services. In the survey, respondents were presented with three scenarios describing various combinations of travel and wait time, user cost, and other service options for travel by auto and shuttle bus and asked to choose auto or transit as the preferred mode of travel. The study found that a Parkway Shuttle was likely to achieve a 15-25 percent visitor capture rate, while a properly designed internal loop road shuttle was likely to attract 40-50 percent of total loop road users. Results of the survey were also used to inform the development of marketing strategies for the service.

Visitor surveys at Colonial NHP have been conducted prior to the start of the shuttle service, but to date there has not been a systematic survey of shuttle users. The current survey is a critical component of an effort to evaluate the overall service and to develop a business plan to determine the type of service that is sustainable beyond 2010.

9. **Survey Methodology:**
(Use as much space as needed; if necessary include additional explanation on a separate page.)

(a) Respondent universe:

Because the main purpose of the survey is to provide feedback on the shuttle service, the respondent universe consists of all visitor groups who used the shuttle system during their visit to Colonial NHP. The shuttle system consists of three separate segments: 1. shuttle service between Colonial Williamsburg and Yorktown battlefield (**Yorktown Historic Triangle Shuttle**); 2. shuttle service between Colonial Williamsburg and Jamestowne (**Jamestown Historic Triangle shuttle**); and 3. shuttle service within the Jamestowne area (**Jamestown Area shuttle**). The respondent universe will include user groups (adults age 18+) of any or all of these three segments during the survey period.

(b) Sampling plan/procedures:

The procedures for sampling will include the selection of a four-day block (including a Saturday and Sunday and two weekdays) during the peak tourist season at the end of June or in July 2009. The timing of the survey will capture different types of visitors, such as one-day weekday visitors, weekend visitors, as well as visitors who are in the area for a longer period of time. Administrative and cost constraints require that the sampled days be a block of contiguous days.

Because of the design of the shuttle system, the survey will be administered at several different venues. Since users could conceivably ride one segment of the system without using the other two segments, it is necessary to sample all three segments – the Jamestown Historic Triangle shuttle (HTS), the Yorktown Historic Triangle Shuttle (HTS) and the Jamestown Area shuttle -- to ensure adequate representation of each segment.

Ideally, sampling frame segments should be non-overlapping to avoid the possibility of sampling the same unit twice. In the case of Colonial NHP this is not possible, as users of one segment of the service may have used other segments of the service. An introductory screening question will be used at all venues to assure that the sample unit is not double-sampled, and the survey form will include a statement indicating that visitor groups should only complete one survey during their visit to Colonial NHP.

At the Jamestown Visitor Center and the Yorktown Visitor Center, interviewers will be located at the boarding site for the Historic Triangle shuttle. Once visitors board the bus for their return visit to Colonial Williamsburg, the interviewer will board the bus and ask visitors to complete the survey during the bus ride. Visitors will be told that will be another interviewer at Colonial Williamsburg who will collect the surveys as they disembark.

Because it is possible to drive to Jamestown and ride the Jamestown Area shuttle, it is necessary to have a separate intercept location for the Jamestown Area shuttle. In this way, the survey will be able to measure the proportion of Jamestown Area shuttle users who drove to Jamestown versus the proportion who took the Historic Triangle shuttle to Jamestown. Visitors will be intercepted as they disembark from the Jamestown Area Shuttle at the visitor center. The interviewers will intercept every other group exiting the shuttle (sampling interval = 2). Groups that refuse to participate will be replaced by the next group.

At all three survey locations, the eligible visitor in the group who has the next birthday will be asked to complete the survey.

Ridership data for 2006 was analyzed in order to determine the peak visitation weeks. The season considered ran from July 1-October 31, consisting of 121 days (excluding the two days in September when the System shut down due to Hurricane Ernesto). (The level and pattern of ridership data for 2007 is considered anomalous because of the 400th anniversary special events and was therefore not used in this analysis.)

The pattern of ridership was bimodal, with peak levels occurring in July and mid-September to mid-October. An analysis of 2008 ridership data also shows higher usage in late June and July, relative to other months of service operation. Therefore, the survey will be administered in July, when user ridership levels are high.

At Colonial Williamsburg the bus operates from 9:00 a.m. to 5:00 p.m. for each of the survey days that will be included in the sampling frame. This includes a total of 13 bus runs each day for the Jamestown HTS and 13 bus runs for the Yorktown HTS. For the Jamestown Area Shuttle, service is provided approximately every 15 minutes, starting at 9:00 am through 5:00 pm, for a total of approximately 32 bus runs.

For each bus run of the Historic Triangle Shuttle, an adult from each visitor group that has boarded the shuttle returning to Colonial Williamsburg will be sampled using the next-birthday selection method.

According to the 2008 ridership numbers, average daily ridership for each leg of the service was as follows:

Jamestown HTS: 256

Yorktown HTS: 125

Jamestown Area Shuttle: 276

Over a four-day survey period in July, the total number of riders on the Jamestown HTS would be approximately 1024 (4 x 256). Assuming an estimate of three people per visitor group, the expected pool of potential survey groups would be 341.

Over a four-day survey period in July, the total number of riders on the Jamestown Area Shuttle is 1104. For each bus run, new riders are counted as they board at each of the four stops, so any given rider will be counted multiple times, depending on how many stops he or she makes. In consultation with park staff, we determined it was fair to assume that each person makes 2.5 stops (out of a possible 4 stops). This results in an estimate of 442 riders. However, based on conversations with park staff and bus drivers, the study team learned that a number of visitors who use the Jamestown Area Shuttle have parked at Jamestown Island (e.g., did not arrive via the HTS). Assuming that half parked at Jamestown Island (and therefore represent unique riders who could not be intercepted on the HTS), this would result in 221 visitors. Assuming 3 persons per group, the expected pool of unique visitor groups who use the Jamestown Area Shuttle is 74.

There are no data to indicate how many riders of the Yorktown HTS also ride the Jamestown HTS (and vice versa). Of the 125 average daily riders of the Yorktown HTS, we conservatively estimate that only one-third are unique riders who will not ride the

the Jamestown HTS, resulting in 42 potential survey respondents. Assuming 3 persons per group, the total number of estimated visitor groups using the Yorktown Shuttle (who will not be intercepted on the Jamestown HTS) is 14. If the separate visitor groups using each leg of the service are combined, the total estimated respondent pool is 429 (341+ 74+14).

(c) Instrument administration:

Staff from the Volpe National Transportation System Center (Volpe Center) will act as surveyors throughout the survey period. At each of the three intercept sites, surveyors will distribute surveys to a randomly selected adult from each visitor group contacted.

For Jamestown Area Shuttle Users, interviewers will intercept riders as they are disembarking from the shuttle. Drivers will provide a quick advance communication informing passengers on the bus of the purpose of the survey. This will be provided prior to the bus arriving at the Jamestown Visitor Center.

To capture riders of the Historic Triangle Shuttle, interviewers will be stationed at the HTS shuttle stops at the Jamestown Visitor Center and the Yorktown Visitor Center. The interviewers will intercept riders once they have boarded the bus for their return trip to Colonial Williamsburg. Interviewers will explain to all bus riders:

"Good morning/afternoon. The National Park Service is conducting a brief survey regarding your experience on the shuttle service today. The survey is voluntary, and is being conducted to help improve transportation services at Colonial National Historical Park. You can complete the survey on the bus ride back to the Colonial Williamsburg Visitor Center. The survey takes just a few minutes, and all responses are anonymous. When you get off the bus at Williamsburg, an interviewer will be waiting to collect your surveys and to answer any questions you may have. As I hand out the surveys, please let me know if you have already taken a survey at another time this weekend.

[INTERVIEWER WALKS DOWN BUS AISLE ASKING VISITORS IF THEY WOULD BE WILLING TO PARTICPATE AND HANDING OUT SURVEYS]

"When you disembark, please leave the clipboard and pencils in the basket at the front of the bus. Thank you."

The intercept location for the Jamestown Area Shuttle will have clipboards and pencils for accommodating respondents who fill out the survey. Likewise, there will be clipboards and pencils available on the buses. Limited financial resources preclude the use of a business reply mail-back option for the survey, but as the time needed to complete the survey is approximately 5 minutes, lack of a mail-back option is not expected to affect the response rate.

(d) Expected response rate/confidence levels:

Based on prior experience at Colonial NHP with the 2001 Colonial National Historical Park-Jamestown Island Visitor Study (OMB #1024-0224 NPS #01-011) the expected response rate is 75% percent. The expected number of potential respondents over the four survey days is approximately 322 (75 percent of the expected 429 visitor groups on the bus runs). This number will permit the survey to provide estimates of proportions with precision of +/- 4.3 percentage points with 95 percent confidence.

(e) Strategies for dealing with potential non-response bias: Non-response will be tested by comparing characteristics of the sample population with selected observable characteristics of non-respondents. The date, time, and group characteristics of passengers refusing the survey will be recorded and reported on a survey log. The results of the check for non-response bias will be reported, and the implications of non-response bias (if any) for park planning will be discussed.

(f) Description of any pre-testing and peer review of the methods and/or instrument (recommended):

NPS staff conducted a small pre-test on April 13, 2008. The surveyors asked four visitors to participate and obtained completed surveys for all four respondents. The average survey length for the four respondents was 5 minutes. In the debriefing, respondents reported they had no questions or problems completing the questionnaire.

A site visit was conducted to Colonial NHP on October 9-11, 2008 to observe the shuttle system in operation and to assess the appropriateness of the planned survey methodology. Based on findings from the site visit, the research team made a slight adjustment to the methodology. Originally, interviewers were going to intercept shuttle users at the Colonial Williamsburg Visitor Center, upon their return from either Jamestown or Yorktown. However, the space at the Colonial Williamsburg shuttle stop is rather tight and is not conducive to administering a survey, so the study team decided that respondents could complete the survey during their return trip to the Colonial Williamsburg Visitor Center (a 15-18 minute shuttle ride). In addition, a few adjustments were made to the survey instrument.

10.	Total Number of Initial Contacts Expected Respondents:	429	322	1 1 .	Estimated Time to Complete Initial Contact Instrument (mins.):	0.25	5	12 .	Total Burden Hours:	29
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13. **Reporting Plan:**

The survey results will be analyzed and a formal final technical report will be prepared for Colonial NHP. In particular, Colonial NHP is interested in learning the sites that shuttle users access, how they learned about the shuttle service, what motivated them to ride the shuttle, and their satisfaction with different aspects of the service. Subgroup analysis will be performed on these key questions to assess differences by type and size of personal group, and by first time versus previous visitors. A copy of the formal technical report will be archived with the NPS Social Science Program. The results of the survey will be used to inform the business operations plan.

Daigle, John J. and Byung-kyu Lee, "Passenger Characteristics and Experiences with the Island Explorer Bus," University of Maine Parks, Recreation and Tourism Program, 2000.

National Park Service and PriceWaterhouseCoopers, "Washington D.C. Visitor Transportation Survey," 2003.

Simmons, Todd and Margaret Littlejohn, "Colonial National Historical Park- Jamestown Island Visitor Study," Visitor Services Project, Report 126 (March 2002).

URS Corporation and Cambridge Systematics, "Alternative Transportation System Study, Phase Two Final Report, Colonial National Historical Park," Prepared for the National Park Service (March 2004).

