



**Expedited Approval for NPS-Sponsored Public Surveys**

1. **Project Title | Submission Date:** Social Research in Support of Impact Mitigation on Restoration of the Going to the Sun Road in Glacier National Park (Phase 4) | October 21, 2008

2. **Abstract:** The proposed study will query individuals stopping at one of two high-use areas along the Going to the Sun Road (GTTSR) to assess the primary reasons for stopping there; the influence of the shuttle on visitors' activity choices; and to assess the use of and perceived utility of shuttle-related information sources. The primary objectives of these surveys will be to assess the possible role of the shuttle system in increasing backcountry hiking use and to develop recommendations for improving shuttle-related communications. The number, group type, length of stay and activity participation of groups stopping during the sampling times will be observed. These factors were already observed at several locations during the summers of 2005-2008.  
(not to exceed 150 words)

3. **Principal Investigator Contact Information**

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**Project Information**

5. **Park(s) For Which Research is to be Conducted:** Glacier National Park

6. **Survey Dates:** 07/01/2009 (mm/dd/yyyy) to 08/31/2009 (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.

The reconstruction of the Going to the Sun Road (GTTSR) in Glacier National Park (GNP) poses important questions about impacts on visitor behavior, use levels and patterns of use within the Park, both during and following the construction activity. As now scheduled, the construction will take place over a seven-to-eight year period, and while the road will not be completely closed during this time, visitors may experience significant time delays and changes in access to popular trailheads and scenic overlooks. The Record of Decision for the Reconstruction Environmental Impact Statement indicates that maintaining visitor access is a key issue.

A goal of the reconstruction process is to minimize disruptions to visitors in the short run, while reducing impacts on park values in the long run. These goals will be achieved through changes in road design, improved parking, restoration practices, development of a shuttle bus system and other actions. The effectiveness of these actions in achieving these goals is an open question, however. Visitors to GNP make heavy use of the GTTSR, with about 80% of the visitors traveling some part of the road. And while the road tends to be a destination experience itself, it also provides access to several trails and overlooks, particularly for subalpine areas, such as Logan Pass and the Highline Trail. The effects of the proposed construction activity on visitor behavior and levels and patterns of use are unknown, both during and following the activity. The initial goal of this project was to develop an information base to identify the consequences of the reconstruction process so that appropriate mitigation actions can be implemented.

Literature Review

This project has been divided into four phases. In Phases One and Two, completed in the summers of 2005 and 2006, visitors were observed and interviewed at 17 pullouts on the Going to the Sun Road. Based on 7000+ observations and 1280+ surveys, this research provided a detailed baseline understanding of visitor use of the GTTSR and pullouts before the beginning of road construction and the

implementation of the shuttle system (Freimund et al., 2006a; Freimund et al., 2006b). Phase Three was completed in the summer of 2007, the first summer of shuttle operation. Based on 376 completed surveys, this research provided an assessment of the decision processes, motivations, activity choices, and experience of the shuttle riders vs. non shuttle riders. It also provided an assessment of the quality of the shuttle experience and recommendations for improvement (Baker and Freimund, 2007).

Phase Three uncovered some interesting trends in the motivations and activity choices of shuttle riders that deserve further investigation. Phase Four will follow up on this information by investigating the role of the shuttle in increased backcountry and point-to-point hiking activity and visitor use and obtaining a greater understanding of how visitors use park-provided shuttle information sources.

The specific goals of this proposed research are to:

- Identify differences in roadside use as a result of the transit system including:
  - If shuttle riding impacts decisions on where to stop
  - If shuttle riding impacts what visitors choose to do at particular stops
- Understand the relationship between shuttle use and choice to take extended day hikes including:
  - If hikers are using the shuttle to facilitate a longer / point-to-point hike
  - If hikers who take the shuttle are leaving a car parked for an extended period in high-use parking lots
  - If more visitors who would not otherwise have done a long hike are engaging in longer day hikes due to the shuttle
- Help managers refine a more effective communication with visitors about the shuttle at GNP including:
  - What information sources shuttle riders and non-riders used and which they found useful
  - What information sources visitors would prefer and when they would prefer to receive information about the shuttle

#### **References**

Baker, Melissa and Freimund, Wayne. 2007. Initial Season of the Going-to-the-Sun Road Shuttle System at Glacier National Park: Visitor Use Study. Missoula, MT: University of Montana Department of Society and Conservation.

Freimund, Wayne; Mccool, Stephen F; and Adams, John C. 2006a. Recreational Use of Selected Viewpoints on Going-to-the-Sun Road, 2005. Missoula, MT: University of Montana Department of Society and Conservation.

Freimund, Wayne; Baker, Melissa L.; McCool, Stephen F. 2006b. Recreational Use of Selected Viewpointson the Going-to-the-Sun Road, 2006. Missoula, MT: University of Montana Department of Society and Conservation.

Walsh, Susan and John Comer, 2006. Quantitative Methods for Public Administration: Techniques and Applications. Waveland Pr Inc; 3 edition.

9. **Survey Methodology:**  
(Use as much space  
as needed; if  
necessary include

**(a) Respondent universe:**

All adults, between 18 and 100 years of age, stopping at two high-use areas (Logan Pass and The Loop) during the daylight hours from 07/01/09 to 09/08/09 along the Going to the Sun Road

additional  
explanation on a  
separate page.)

**(b) Sampling plan/procedures:**

Surveys will be implemented in two areas: Logan Pass and The Loop. Logan Pass will provide access to a broad cross-section of park visitors, including shuttle users, non-shuttle users and backcountry hikers. Logan Pass will be sampled during the primary daylight hours of operation—basically from 8 a.m. until 6 p.m. in six-hour sampling periods: a morning sampling period from 8 a.m. to 2 p.m. and an afternoon sampling period from 12 p.m. to 6 p.m..

The Loop will provide both a cross-section of park users and a concentrated opportunity to survey backcountry hikers who may be using the shuttle to facilitate a point-to-point hike. The Loop will be sampled from 12 p.m. to 6 p.m. to maximize the likelihood of surveying long distance/backcountry hikers as they come off the Highline Trail. We will also observe group type, group origin, activity type, and parking lot usage at the Loop, because this area was not observed in the summer of 2008. The crew is limited to one six-hour sampling period per day (because of travel times and data-entry needs).

During the period July 1, 2009 to September 8, 2009, there are a total of 10 weeks or 50 days of potential sampling. The crew is limited to a five-day workweek and some time must be allocated to training and data management. Thus, they can sample a total of 42 sampling periods (resulting in 21 sampling periods per location) during the study.

Employees' days off must be accounted for. During the first half of the study, Monday and Tuesday will be the days off. Then, during the second half of the study days off will be changed to Friday and Saturday.

The sampling procedure will use a systematic random sampling process in which the initial study areas and period will be randomly selected. Following the initial day of sampling, sampling periods (AM/PM) and study areas will be rotated systematically to ensure that over the study period each study area is sampled equally.

Surveyors will follow OMB-recommended protocol for visitor contact. Contact will occur based upon a pre-designed systematic schedule starting with the first available group during the sample time. The eligible adult member of each group with the next closest birthday to the sampling day will be asked to participate. Hikers will be approached as they exit the trailheads at The Loop and as they enter or exit trailheads at Logan Pass. Shuttle riders will be approached at the shuttle stops at Logan Pass and the Loop. Non-shuttle riders will be approached in the parking lots of Logan Pass and the Loop.

**(c) Instrument administration:**

There are four components to the study: three survey components and an observational component at the Loop. The survey instruments will consist of self-administered paper surveys (approximately 10 minutes in length) and will be distributed based upon a pre-designed systematic schedule starting with the first available group during the sampling period.

**(d) Expected response rate/confidence levels:**

For each questionnaire, we will contact 440 individuals stratified by weekend and weekday periods and expect 400, or 90 percent, to agree to respond. We believe this response rate is realistic based on the response rate for surveys undertaken in earlier stages of this project in 2005 and 2007 and based on generally high response rates for surveys undertaken in National Parks and other protected areas. With these anticipated sample sizes, we will be 90 percent confident that the true proportion in

the population is +/- 5 percentage points of the sample statistic. A confidence interval of five percentage points is a standard level of precision for social science surveys of this type (Walsh and Comer, 2006).

The goal of these surveys is to provide an inventory and descriptive analysis of visitor's perceptions regarding various aspects of the park setting. Analyses will also include comparisons across broad groupings of user types (e.g., shuttle riders, Non-shuttle riders) to assess perceptions about the role of the shuttle in the park.

An 80 percent power level for a two tailed t-test at the .05 alpha level, assuming a difference in the true mean of .5, would require an "n" of 64 in each cell. Thus, the proposed sample size will certainly be adequate for bivariate comparisons and will also allow for more sophisticated multivariate analysis if deemed necessary.

**(e) Strategies for dealing with potential non-response bias:**

We will maintain a log of observable demographics, including group size and type, gender, age, and likely activity type of the visitors who refuse to take the survey and compare this to the demographic data obtained for survey respondents. This comparison will be used to assess if non-respondents are significantly different from respondents. We will also compare respondent demographic and group data to observational data (e.g., group type and size, arrival and departure time, activities such as viewing scenery, snowplay, hiking, facility use), for all groups.

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

Many of the questions were used in previous phases of data collection at Glacier National Park. Measures new to this questionnaire have considerable history in survey research.

10.	<b>Total Number of Initial Contacts   Expected Respondents:</b>	1320	1200	11	<b>Estimated Time to Complete Initial Contact   Instrument (mins.):</b>	1	10	12	<b>Total Burden Hours:</b>	222
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13.	<b>Reporting Plan:</b>	<p>The survey data will be analyzed using descriptive statistics and chi-squared tests for differences between user groups on key dependent variables such as differences in usage of roadside stops and hiking behavior between shuttle riders and non-shuttle riders. A technical completion report will be submitted to Glacier National Park. We will also hold a workshop in the fall, which is a component of the overall study. Finally, we will submit a copy of the technical completion report to the NPS Social Science Program for inclusion in the Social Science Studies Collection.</p>								
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