

National Park Service  
U.S. Department of the Interior



Social Science Program

OMB Control Number 1024-0224  
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Programmatic Approval for NPS-Sponsored Public Surveys

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1.	<b>Project Title:</b> Going to the Sun Road Corridor Planning in Glacier National Park	<b>Submission Date</b> 4-23-2012
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2.	<b>Abstract:</b> The proposed study will query individuals stopping at one of four 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.
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(not to exceed 150 words)

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3. Principal Investigator Contact Information

<b>First Name:</b> Wayne	<b>Last Name:</b> Freimund
<b>Title:</b> Professor	
<b>Affiliation:</b> Department of Society and Conservation, College of Forestry and Conservation	
<b>Street Address:</b> The University of Montana	
<b>City:</b> Missoula	<b>State:</b> MT
<b>Phone:</b> 406 243-5184	<b>Fax:</b> 406 243-6656
<b>Email:</b> Wayne.freimund@umontana.edu	

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4. Park or Program Liaison Contact Information

<b>First Name:</b> Phil	<b>Last Name:</b> Wilson
<b>Title:</b> Chief, Division of Science and Resources Management	
<b>Park:</b> Glacier National Park	
<b>Park</b> Headquarters	
<b>Office/Division:</b>	
<b>Street Address:</b> P.O. Box 128	
<b>City:</b> West Glacier	<b>State:</b> MT
<b>Phone:</b> 406-888-7821	<b>Fax:</b> 406-888-7808
<b>Email:</b> Phil_Wilson@nps.gov	

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**Project Information**

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

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6. **Survey Dates:** 6/1/2012 TO 9/30/2012

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

Mail-Back  
Questionnaire  
Other (explain)

☒ On-Site  
Questionnaire

Face-to-Face  
Interview

Telephone  
Survey

Focus Groups

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

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, during and following the construction activity. The scheduled construction will take place over a seven-to-eight year period. During this time, while the road will not be completely closed, 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 indicated that maintaining visitor access is a key GNP management issue.

About 80% of GNP visitors traveling some part of the GTTSR. And while the road is a destination experience itself, it also provides access to, subalpine areas, trails and overlooks (such as Logan Pass and the Highline Trail). The effects of the proposed reconstruction on visitor behavior and use are unknown.

This information was requested by GNP managers because 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 goal of these surveys is to provide an inventory and descriptive analysis of visitor's perceptions regarding management practices and visitor services in the park. Analyses will also include comparisons across broad groupings of user types (e.g., shuttle riders, Nonshuttle riders) to assess perceptions about the

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role of the shuttle in the park. The data from this collection will be used to provide information that will help park managers identify the consequences of the reconstruction process so that appropriate management actions can be implemented.

## **Background**

This project is Phase 4 of a long-term study of visitor behavior on the GTTSR. 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 deserved further investigation. Phase Four follows 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 collection are to:

- 1) 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
- 2) 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
- 3) 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

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- 4) Understand behavioral coping strategies used by visitors when experiences fail to meet expectations.
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**Survey Methodology: (Use as much space as needed; if necessary include additional explanation on a separate page.)**

**(a) Respondent Universe:**

All adults, (18 and older), hiking at two popular high use areas (Logan Pass and The Loop) during daylight hours from 06/01/12 to 09/30/12 along the Going to the Sun Road.

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**(b) Sampling Plan/Procedures:**

Surveys will be implemented in several areas: in parking lots and on shuttles running between these locations listed below:

- Avalanche
- The Loop
- Sunrift Gorge
- Logan Pass

Avalanche and Logan Pass will provide access to a broad cross-section of park visitors, including shuttle users, non-shuttle users and backcountry hikers. Sunrift and the Loop will provide opportunities to see the relationship between longer hikes and shuttle use.

Visitors will be sampled during the primary daylight hours of operation—from 8 a.m. until 6 p.m.

- The crew is limited to one six-hour sampling period per day (because of travel times and data-entry needs).
- There will be two sampling periods: 8 a.m. to 2 p.m. (AM) and 12 p.m. to 6 p.m.(PM)
- The Loop and Sunrift areas sample period will be from 1 p.m. to 7 p.m.; this will help to maximize the response rate in this area (long distance and backcountry hikers return later in the day as they come off the Highline Trail).

We will develop a systematic random schedule based upon 50 potential sampling days during the sampling period (June 1, 2012 to September 30, 2012). On the first day of the study, the initial study areas and sampling period will be randomly selected. Following that day the study areas and sampling periods (AM/PM) will be rotated systematically to ensure that each study area is sampled equally over the study period.

Contact will occur based upon the pre-designed systematic schedule described above. Visitors will be contacted 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. When a visitor is either finished or able to complete the remainder of the questionnaire on their own the interviewer will approach the next available group and repeat the process. We will seek approximately 40 completed surveys per sampling period ensuring that we have 400 at each site. Do to the variable use levels at the different sites; this will result in slightly different sampling intervals. For example, at Avalanche which receives approximately

1750 visitors per day, we will likely be sampling about every 10<sup>th</sup> visitor group that meets the sampling criteria. Whereas at the Loop, which receives approximately 300 visitors per day, we will be sampling about every 3<sup>rd</sup> or 4<sup>th</sup> group meets the sampling criteria. We will attempt to keep track of number of people that pass by between samples. We will certainly ensure that the sampling is conducted through the entire sampling period. If we end up with more than 40 samples within a day, we will reduce the number of sample days at that site. It may be necessary to increase the number of sample days at Sunrift which receives only 85 visitors per day. If the person refuses to participate, we will attempt to ask three quick questions to assess non response bias and move onto the next available visitor.

Three visitor groups will be contacted: 1) Hikers, 2) Shuttle Riders, and 3) Non-shuttle rider/Non-hiker. Hikers will be approached as they enter or exit the trailheads at The Loop and Sunrift. Shuttle riders will be approached at the shuttle stops at Logan Pass, the Loop and Sunrift. Non-shuttle riders will be approached in the parking lots of Logan Pass and the Loop.

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**(c) Instrument Administration:**

Visitors will be approached by trained crew members associated with the study. The instruments will consist of self-administered paper questionnaires (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. Questionnaires will be filled out on site and handed to the administrator when the visitor is finished.

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**(d) Expected Response Rate/Confidence Levels:**

For each questionnaire, we will contact 500 individuals stratified by weekend and weekday periods and expect 450, or 90 percent, to agree to respond. These 400 will be distributed across the four sites. 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).

	Number of Initial Contacts*	Expected Response Rate	Expected Number of Responses	Margin of Error +/- %
Logan Pass	500	90%	450	5%
The Loop	500	90%	450	5%
Sunrift	500	90%	450	5%
Avalanche	500	90%	450	5%
<b>TOTAL</b>	<b>2,000</b>		<b>1,800</b>	

\*We will collect 150 of each of the three questionnaires at each place.

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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.

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**(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 and group size and activity type data to observational data (e.g., group size, activities such as viewing scenery, snowplay, hiking, facility use), and shuttle use for all groups.

During the initial contact, the interviewer will ask each visitor 3 questions taken from the survey. These questions will be used in a non-response bias analysis.

- 1) On this visit, how many people are in your group?*
- 2) What is your home state?*
- 3) Did/ are you planning to use the shuttle service?*

Responses will be recorded on a log for every survey contact. Visitors may decline to give this basic information as well. If so, their refusal to participate will be recorded on the log sheet (addendum A). The results of the non-response bias check will be described in a report and the implications for park planning and management will be discussed.

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

The majority of the questions were used in previous phases of data collection at Glacier National Park. These were pretested, peer reviewed and reviewed by OMB. Measures regarding coping behaviors new to this questionnaire have considerable history in survey research and peer reviewed publication. Given the season, it is impossible to pretest the instrument with the intended population.

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- 10      **Burden Estimates:** We plan to approach at least 2000 individuals during the sampling period ( $n=2000$ ). With an anticipated response rate of 90%, we expect to receive 1800 total responses for this collection.

We expect that the initial contact time will be at least one minute per person ( $2000 \times 1 \text{ minute} = 33 \text{ hours}$ ). We expect that 200 (10%) visitors will refuse to participate during the initial on-site contact, for those individuals we will record their reason for refusal and ask them to answer the three questions that will be used for the non-response check. This is estimated to take no more than 2 minutes ( $200 \times 2 = 7 \text{ hours}$ ) to complete each session.

For those who agree to participate ( $n= 1800$ ) we expect that 1800 will complete the survey, with that, an additional 10 minutes will be required to complete the follow through ( $1800 \text{ response} \times 10 \text{ minutes} = 300 \text{ hours}$ ). The burden for this collection is estimated to be 340 hours.

Estimated Number of Contacts		Estimation of Time		Estimation of Respondent Burden	
Total Number of Initial Contacts	2000	Estimated Time (mins.) to Complete Initial Contact	1	Estimated Burden Hours	33
Estimated number of on-site refusals	200	On-site Refusal/ nonresponse	2	Estimated Burden Hours	7
Total Number of Expected Responses	1800	Estimated Time (mins.) to complete and return surveys	10	Estimated Burden Hours	300
					<b>Total Burden</b> 340

11.      **Reporting Plan:** 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 following the completion of the data collection, which is a component of the overall study plan. Finally, we will submit a copy of the technical completion report, as required, to the NPS Social Science Program for inclusion in the Social Science Studies Collection.

## 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 Viewpoints on the Going-to-the-Sun Road, 2006. Missoula, MT: University of Montana Department of Society and Conservation.

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