National Park Service
U.S. Department of the Interior

Social Science Program

Expedited Approval for NPS-Sponsored Public Surveys

1.	**Project Title**	Assessing the Visitor Experience at Chaco Culture National Historical Park	April 7, 2008
	Submission Date:		

2. **Abstract:**

Recent proposals to provide paved access to the Chaco Culture National Historical Park (CHCU) have the potential to result in several changes to the current system of visitor use and management. If the park were to receive visitor flows similar to more accessible sites like Mesa Verde National Park, visitor experiences may change and demands on management may increase. To address this potential for increased demand, CHCU management is completing an amendment to its general management plan (GMP) to more specifically address visitor management issues. This project will inform the plan by assessing what type of visitors currently visit the park and evaluating their perceptions of current and potential management actions. Park visitors will be sampled during the months of April-September 2009. Two instruments will be used. Both instruments will share a core set of questions, but one will elaborate on the visitor experience, while the other will focus on opinions of management alternatives. The results of this study will be one of many sources of information (e.g. public and stakeholder comments, staff recommendations, other research, etc.) that management will use in evaluating alternatives for managing increased visitation.

(not to exceed 150 words)

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Project Information

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

6. **Survey Dates:** 04/01/2009 (mm/dd/yyyy) to 9/30/2009 (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.

Recent action by San Juan County to provide paved access to the Chaco Culture National Historical Park (CHCU) in northwest New Mexico has the potential to result in several changes to the current system of visitor use and management within the park. Currently, access to the park and its outstanding concentration of pre-Columbian ruins is only by long drives over gravel roads. If the park were to receive visitor flows similar to more accessible sites like the nearby Mesa Verde National Park, visitor experiences may change, fragile cultural resources could be threatened, and demands on management may increase.

A 2005 analysis by NPS Transportation Scholar Jonathon Unchurch analyzed six comparable parks in the region (Capitol Reef National Park, Canyon de Chelly National Monument, Navajo National Monument, Canyonlands National Park, Natural Bridges National Monument, Hovenweep National Monument) to assess the potential for increased visitation relative to alterations to park access. His conclusion suggested that visitation will increase and the distribution of vehicle types will change. While he could not be certain of the amount of increase, the most comparable and recent park to have a change in access was Hovenweep. That park experienced a 32 percent increase. Upchurch anticipated a larger increase at Chaco due to the higher population in the area, closer proximity to major roads and World Heritage Status. To address this potential for increased demand associated with the county paving of the primary access road, park management is completing an amendment to its general management plan to more specifically address visitor management issues. That amendment will comply with the National Environmental Policy Act and assess a range of alternative visitor management strategies. The information gathered in this project will inform those alternatives by assessing what type of visitors currently visit the park and evaluating their perceptions of the current and potential management actions in response to increased visitation. The results of this study will be one of many sources of information (e.g., public and stakeholder comments, staff recommendations, other research, etc.) that management will use in evaluating alternatives.

The purpose of this study is to examine peak and shoulder season visitor perspectives of the park as it is currently managed. Another purpose is to

investigate how visitors would prefer CHCU to be managed under a scenario of increased visitor demand. The specific objectives include:

1. *Documentation of the current users and use patterns*. This element of the study will provide park managers with documentation of the current visitor characteristics and use patterns within and outside of the park. This documentation and survey question wording will be consistent with the approach taken in a similar study (Lee 1995) and will be able to illustrate changes to the visiting clientele that have occurred over the past 14 years.

2. *Description of the desired visitor experience*. Visitor expectations, motives for the visit and evaluations of existing conditions will be assessed. The importance of experience features such as access, personal freedom, desired services, etc. will be assessed.

3. *Visitor perceptions of park values*. The park is protected as a World Heritage Site for *universal outstanding values*. This element of the study will evaluate visitor perceptions of the park's purpose. These value orientations will be used to compare visitor perceptions of the park's purpose to those stated in the area's protection and managerial policies. It will also allow segmentation of visitors when assessing desired conditions and support for potential management actions.

4. *Visitor perceptions of management actions given existing and increased demand scenarios*. This component of the study will assess visitor opinion on a range of management policies that are currently in place and actions that could be implemented if visitation increased significantly.

Literature Review

Previous Visitor Studies at Chaco Culture National Historical Park.

Three types of visitor research have been reported at Chaco Culture National Historical Park. The first is an annual Visitor Survey Card that has been conducted since 1998 as part of the NPS response to the Government Performance and Results Act. Conducted by the NPS Visitor Service Project at the University of Idaho, these survey cards look at a limited number of issues and general visitor satisfaction levels. Over the past ten years, the average satisfaction rate has been 95.8%. While visitors have generally been quite satisfied with the outdoor recreation setting at CHCU (upper 80^{th} percentiles), they have been more satisfied with the abilities to learn about nature, culture and history (mid 90^{th} percentiles).

The second type of research is a detailed visitor study completed in 1992 and 1993 (Lee and Stephens, 1995). That study assessed visitors at Chaco Culture National Historical Park, Mesa Verde National Park, and Wupatki National Monument. Similar to the Visitor Survey Card data reported above, the opportunity "to learn and see how people lived back then" was the most important reason for visiting (Lee and Stephens, 1995, p. 23). Mobility and access within the park were highly rated, while potential features such as gift shops, picnic areas or restaurants, etc. that would offer more amenities were rated low in importance. Finally, road access affected 36 percent of the visitors in a positive way, 15 percent in a negative way and had no effect on 49 percent of the visitors. The results of that study found the visitors to CHCU preferred the rustic setting and social freedom provided by the management regime much more than visitors to Mesa Verde who were less interested in those experience attributes. The authors conclude that a regional approach to the management of cultural sites in the area was necessary to protect the range of desired experiences that the visitor population demanded. This recommendation is consistent with the literature cited earlier.

The third study of CHCU is a case study of the park prepared for the Getty

Conservation Institute in 2005 by de la Torre and others. The purpose of this study was to assess the degree to which the park's heritage values evolved, were articulated, and protected in the current management regime. This study concluded that CHCU has successfully protected the values of the area, in large part due to the local policy to keep the park somewhat isolated but accessible. By contrasting Mesa Verde, de la Torre and others point out that the undeveloped nature of the area allows broad access, rather than the developed but limited access of a design developed for a higher level of visitation. Although many of the characteristics that make the visitor experience unique at CHCU were identified in the case study, it was noted that no official plan for the park documents these characteristics in detail. This study will aid the general management amendment by providing a better understanding of these characteristics so they can be documented and evaluated in light of proposed changes to visitor access opportunities.

This research focuses on how perceptions of park values are related to visitor support of park management policies designed to maintain desired social settings as visitation increases. While several studies have addressed the role of perceived park values in affecting visitors' support for management alternatives, none have directly examined the role of perceived values in cultural parks. By investigating how different visitors value CHCU as a social, cultural, and natural setting, the information developed in this survey will allow park managers to more precisely understand visitors' experiences in the park and the visitor population as a whole. Specifically, question 10 in the management alternatives survey is designed to build understanding on what visitors perceive the primary purpose of CHCU to be. This type of understanding has been instrumental in predicting management trade –offs (Borrie et al, 2002 and comparing the perceptions of the purpose of various parks 9Tanner et al, in press).

In addition, CHCU managers are specifically interested in visitors' degree of acceptance of a group size limitation in certain areas of the park, such as prehistoric ruins. This will become an important issue if paved access leads to greater visitation. Previous research found that 68% of NPS wilderness areas employ some form of group size limitation and that these limitations are widely supported by visitors (Monz et al., 2000). Across 201 wilderness areas examined by Monz et al., the median group size limitation was 12 and the mode was 10 people per party. While CHCU is not a wilderness area, it is managed to provide opportunities for solitude, an intimate relationship among visitors and the prehistoric cultural sites, and minimal ecological impact. Thus, we have used a group size of 12 in this survey as the basis for inquiry about support for group size limitations.

References

Borrie, W. T., Freimund, W. A., & Davenport, M. A. (2002). Winter visitors to Yellowstone National Park: Their value orientations and support for management actions. *Human Ecology Review* 9(2):41-48

De la Torre, M. Maclean, M.G.H., & D. Myers. 2003. Chaco Culture National Historical Park: U.S. National Park Service. The Getty Conservation Institute. Los Angeles.

Lee, M. E. and D. Stephens. 1995. Anasazi cultural parks study: assessment of visitor experiences at three cultural parks. Technical Report NPS/NAUCPRS/NRTR-95/07. NPS Colorado Plateau Research Station at Northern Arizona University.

Monz, C., Roggenbuck, J.W., Cole, D.N., Brame, R & A. Yoder. 2000. Wilderness party size regulations: implications for management and a decisionmaking framework. In: Cole, David N.; McCool, Stephen F.; Borrie, William T.; O'Loughlin, Jennifer, comps. 2000. Wilderness science in a time of change conference—Volume 4: Wilderness visitors, experiences, and visitor management; 1999 May 23–27; Missoula, MT. Proceedings RMRS-P-15-VOL-4. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. p. 265-273

Tanner, R.J., Freimund, W.A., Borrie, W.T. & R. N. Moisey. (2009). A Meta Study of the Values of Visitors to Four Protected Areas in Western United States. Leisure Sciences 30: 1-14.
Upchurch, J. 2005. Potential Impacts Associated with Improvements to County Road 7950. Draft. Prepared for Chaco Culture National Historical Park. 16 pages.

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

(a) Respondent universe:
All adults, 18 years of age or older, visiting the Pueblo Bonito ruin and the Pueblo del Arroyo ruin in the park from 04/01/09 to 9/30/09.

(b) Sampling plan/procedures:
Parking lots adjacent to the Pueblo Bonito and Pueblo del Arroyo ruins, the two most popular sites in the park (receiving 96% of the park visitors), were selected for administering on-site surveys. Study areas will be sampled during the primary daylight hours of operation—approximately 8 AM until 8 PM in six-hour sampling periods. An open tent will be set up to provide shade to respondents, and cold water will be offered to assist visitors with hot temperatures. Sampling will be conducted by two people who will administer a questionnaire to one person per group of visitors. The member of the group with the closest birthday to the sampling day will be asked to complete the questionnaire. Information will be collected through two survey instruments to reduce burden on individual respondents. Each group will randomly be assigned one of the two questionnaires used in the study. Completed surveys will be collected from each visitor before he/she leaves the survey site.

During the two sampling period (spring and summer) there are a total of 12 weeks, or 60 days, of potential sampling. The crew is limited to a five-day workweek and thus, after time subtracted for training and data management, can sample a total of 48 sampling periods (resulting in 24 sampling periods per season). We expect interviewers to average approximately 30 completed questionnaires per day.

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.

Contacts will occur based upon a pre-designed systematic schedule starting with the first available group during the sample time. Average visitation for the months of April – September 2007 was 4,279 visitors per month (NPS Public Use Statistics Office). This equates to approximately 142 visitors or 57 parties per day. Thus, within a sampling period, we should be able to contact approximately 30 parties per sampling period. To achieve our desired sample size, we will attempt to contact all of these parties. The probability of contacting all parties is high. In each sampling location, there is only one access portal to the site (which is where our surveyors will be stationed). Visitation in this park is generally low and in the vast majority of cases, both surveyors will be able to contact visitors and distribute the questionnaires to them. Based on our observations, having two surveyors present during peak times will enable one person to distribute questionnaires while the other contacts visitor groups to ask for their participation in the study.

(c) Instrument administration:
Two surveys will be administered in this study: a Management Alternatives Survey and a Visitor Experience Survey. Respondents will be asked to complete only one of the surveys. The surveys will be administered based upon a pre-designed systematic schedule starting with the first available group during the sampling period. The sampling script the surveyors will use is included with the survey instrument below.

(d) Expected response rate/confidence levels:
For each questionnaire, we will contact approximately 720 individuals stratified by season, weekend and weekday periods and expect 500 or 84 percent, to agree to respond (White and Virden, 2004). With these anticipated sample sizes, we will be 90 percent confident that the true proportion in the population is +/- 4 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.

Although we anticipate a very high response rate, even a 75 percent response rate will leave us with over 450 completed questionnaires for each instrument. 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:

A survey log of non-respondents will be used to monitor observable group characteristics, such as group size, presence of children, and, primary language.

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

In order to estimate burden and get feedback on questions, a draft of the survey instruments was pre-tested on nine visitors at CHCU. The majority of questions in the Visitor Experience instrument were used in a survey at CHCU by Lee (1995). Whenever possible we chose to use the same wording to enable a comparison of results from the two studies. We are also using a similar sampling frame and approach. Additionally, the wording in Question 18 of the visitor survey is identical to that used in the Lee 1995 survey. We would like to keep that wording since it was slightly different than the type of wording often used for this type of question.

10.	**Total Number of Initial Contacts | Expected Respondents:**	720 720	600 600	11	**Estimated Time to Complete Initial Contact | Instrument (mins.):**	1 1	15 15	12	**Total Burden Hours:**	300

13. **Reporting Plan:**

A technical report will be submitted to CHCU. We will also hold a workshop with CHCU employees and NPS regional planners in January, 2009. Finally, we will submit a copy of the technical report to the NPS Social Science Program for inclusion in the Social Science Studies Collection.

Analysis will include descriptive statistics on all measures. Values scales will be tested for reliability and unidimensionality. Logit and probit analysis will be used to assess the relationship between preferred management alternatives and perceived park values. Specifically, we will employ an ordered probit approach to analyze respondents' choices among the three visitor management alternatives being considered by the park. Choices between alternatives will be analyzed as a function of people's perceptions of what the attributes of each alternative mean to their park experiences. This approach relates changes in visitors' preferred management action to the likely impacts it will have on key components of the visitor experience at Chaco Culture National Historical Park.