

**National Park Service
U.S. Department of the Interior**



**Glen Canyon National Recreation Area
Utah**

**FINDING OF NO SIGNIFICANT IMPACT
DEEPEN CASTLE ROCK CUT**

BACKGROUND

In compliance with the National Environmental Policy Act (NEPA) of 1969, the National Park Service (NPS) prepared an Environmental Assessment (EA) to examine various alternatives and environmental impacts associated with the proposal to deepen Castle Rock Cut at Glen Canyon National Recreation Area (NRA). Castle Rock Cut was originally excavated to an elevation of 3,622 feet in the 1970s to allow boats to traverse the cut at a lake level of 3,627 feet or higher. Additional excavation in 1993 deepened the cut to its current elevation of 3,615 feet.

Currently, the southwestern United States is experiencing a multi-year drought that has contributed to declining lake levels at many reservoirs, including Lake Powell. With the exception of 2005, inflows to Lake Powell have been below average since 2000. In 2007, the lake reached a maximum level of 3,612 feet in June and a minimum level of 3,598 feet in March. The existing Castle Rock Cut is open to boaters only when the elevation of Lake Powell is at 3,620 feet or higher. As a result, during occasional low lake levels prior to 2003 and continuously since 2003, the closure of Castle Rock Cut has required boaters to detour via Antelope Canyon (the Channel) to reach Warm Creek Bay and other uplake destinations. This detour has resulted in longer travel times, additional user costs, and reduced safety. Boat travel via the Channel is approximately 12 miles longer and requires an hour or more of additional travel time in each direction.

The EA has been prepared and distributed for agency and public comment, pursuant to the requirements of NEPA, to address the potential impacts associated with the excavation of Castle Rock Cut and subsequent disposal of materials. The current NEPA document assesses the potential social, economic, and environmental impacts associated with one Action Alternative (deepening Castle Rock Cut to 3,580 feet, the Preferred Alternative) and the No Action Alternative. In addition, this document summarizes the alternatives development process, explains the rationale for eliminating specific alternatives, and summarizes the public participation process.

SELECTION OF THE PREFERRED ALTERNATIVE

Two alternatives were evaluated in the EA: Alternative 1—No Action Alternative and Alternative 2—Preferred Alternative. Alternative 2 is the NPS preferred alternative because it best meets the purpose and need for the project as well as the project objectives to (1) decrease visitor and staff safety risk factors associated with concentrated use of the Channel, (2) provide more direct access for visitors and staff to uplake locations, thereby decreasing transit time, which may provide a savings on fuel consumption, (3) improve emergency response time to uplake locations, and (4) minimize impacts to the Glen Canyon NRA natural and cultural resources, including the wilderness area on Antelope Island.

The preferred alternative consists of deepening the channel depth of Castle Rock Cut to the 3,580-foot elevation and making the cut available to boats drafting 4 feet or less when the lake level is above the 3,585-foot level. The cut will have a maximum bottom width of 80 feet. The southern side of the existing cut will act as the southern boundary of the proposed cut and will be excavated vertically to the 3,580-foot elevation. All work will extend north, with the northern bank being sloped from the bottom at an approximate 1.5:1 slope, resulting in a top channel width of approximately 150 feet. This alternative will result in the excavation of 8 acres along an approximately 3,200-foot length in the existing Castle Rock Cut. The disposal area for excavated materials will be located entirely below the ordinary high water mark between 3,610 and 3,640 feet in elevation. The excavated materials will consist of approximately 400,000 cubic yards of native Navajo sandstone and will be disposed of in a 50-acre area immediately north of the enlarged cut, resulting in an average depth of fill of 5 feet. The total area of disturbance in Waters of the United States will be 58 acres.

Work will be completed within 5 years, depending on reservoir levels and available funding. Excavation in any one year will not go below the lake level at the time of construction. First-year activities will include the drilling and blasting of sandstone bedrock to the target elevation of 3,580 feet and the excavation of materials to the lake level at that time, anticipated to be approximately 3,600 feet. The remainder of the blasted bedrock will remain in place as fractured material. Within the 5-year period, additional material will be excavated down to the 3,580-foot elevation, if available funding and the lake level at the time of construction allow. Construction will occur only between December 15 and June 15.

ALTERNATIVES CONSIDERED

A total of three alternatives were considered for this project, including two that are analyzed in the EA and one that was dismissed prior to analyzing it in the EA. The two alternatives that are evaluated in the EA include Alternative 1—No Action Alternative, in which Castle Rock Cut would not be excavated, and Alternative 2—Preferred Alternative, as discussed in the previous section.

The alternative that was dismissed prior to being analyzed in the EA was Alternative 3—Deeper Cut Alternative (pages 14-15 in the EA), which would have resulted in the excavation of Castle Rock Cut to a depth of 3,560 feet, providing access to boats drafting 4 feet or less at lake levels of 3,565 feet. This alternative was dismissed because it would require the disposal of more than twice the amount of excavated material than required under the preferred alternative and would create a deeper mark on the landscape. In addition, this alternative would have created a substantially greater visual impact when not filled with water on the landscape and would have a substantially higher construction cost than the preferred alternative.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is determined by applying the six criteria suggested in § 101 of NEPA. According to these criteria, the environmentally preferred alternative should (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations, (2) assure for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings, (3) attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences, (4) preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice, (5) achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities, and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The preferred alternative is the environmentally preferred alternative because it best addresses these six criteria. The preferred alternative will result in lowering the cut by approximately 35 feet, in a previously-disturbed area, with negligible impacts to topography, geology, and soils. This negligible adverse impact will be balanced out by a number of beneficial impacts. The preferred alternative maximizes safety on Lake Powell by increasing the time Castle Rock Cut is open and minimizing the amount of time when boaters would need to travel through the Channel. Increasing the amount of time that Castle Rock Cut is usable will also reduce boaters' fuel consumption, which will result in fewer adverse impacts to air and water quality compared with Alternative 1. The preferred alternative allows visitors to more conveniently access Lake Powell's most popular uplake features, which will enhance visitors' enjoyment of the park. This opportunity will increase their ability to access the natural environment, thus attaining "the widest range of beneficial uses of the environment without degradation." Finally, the preferred alternative will have no unacceptable impacts on park resources or values, preserving "important historic, cultural, and natural aspects of our national heritage."

WHY THE PREFERRED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

As defined in 40 CFR § 1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse

The preferred alternative will provide some negligible or minor adverse impacts that will be balanced out by a number of minor to moderate beneficial impacts. The preferred alternative will result in minor adverse impacts to wildlife and wildlife habitat (removal of invasive vegetation and interruption of the migration route between Castle Rock and Antelope Island), but at the same time will provide a minor beneficial impact to wildlife habitat on Antelope Island, as cattle will be prevented from traveling to the island. The preferred alternative will provide for short-term minor adverse noise impacts, but a long-term minor beneficial impact of noise reduction by dispersing boats across the lake. The preferred alternative will potentially have a minor adverse economic impact on the operators of Antelope Point Marina, but this impact will likely be offset with increased revenue for all concessioners resulting from increased visitation expected from the opening of Castle Rock Cut. And, the preferred alternative will provide a short-term negligible adverse increase in energy consumption during construction, but a long-term beneficial impact on energy consumption by resulting in less fuel needed for boats to reach uplake destinations.

Degree of effect on public health or safety

The preferred alternative will have an overall beneficial effect on public health and safety. This alternative will open Castle Rock Cut a projected 100 days, or 82 percent, of the peak boating season recreational period over the next 20 years. When open, Castle Rock Cut will likely be used by the majority of boaters traveling uplake because it provides a shorter route. Emergency response vessels will have a shorter route to uplake destinations, which will decrease the time lapse between an emergency call and the arrival of NPS emergency vessels. By decreasing traffic through the Channel, there will be a decrease in the danger for boaters traveling through the Channel. Potential high wake and rough water conditions in the deepened Castle Rock Cut will be minimized by establishing a posted no-wake zone, strict speed limits, and a slope of 1.5:1 on the north face of the cut.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas

The preferred alternative will not impact unique characteristics of the area, including park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas because these resources do not exist in the project area. The preferred alternative will have "no adverse effect"

on unknown shore-side archaeological sites, the Rainbow Bridge National Monument, or any areas associated with Rainbow Bridge or the Colorado River which interested tribes may consider to be a traditional cultural property, as discussed previously and later in this document.

Degree to which effects on the quality of the human environment are likely to be highly controversial

The overall effect of the preferred alternative on the human environment will be beneficial as a result of increased safety, increased ease of access to uplake destinations, and lower fuel consumption to travel to uplake destinations. No issues or concerns raised during the NEPA process were identified as controversial issues. 301 individuals, Native American tribes, and special interest groups submitted comments during the 30-day comment period, with the majority of comments (i.e., 294, or 97%) expressing support for the project.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks

Because the NPS has measures in place to deal with shoreline cultural resource sites, the level of uncertainty on possible effects to these sites is low. The environmental analysis in the EA has not identified any effects that may involve highly unique or unknown risks to the resources analyzed.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration

Castle Rock Cut was originally excavated to an elevation of 3,622 feet in the 1970s to allow boats to traverse the cut at a lake level of 3,627 feet or higher. Additional excavation in 1993 deepened the cut to its current elevation of 3,615 feet. It is anticipated that if further future excavations are deemed necessary or desirable, they would likely take place in the same site. Any future excavation proposals would be subject to environmental analysis under NEPA. The preferred alternative does not set a precedent for future actions with significant effects and does not represent a decision in principle about a future consideration.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts

Cumulative effects were analyzed in the EA, and no significant cumulative impacts were identified.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources

No adverse effect will occur to unknown archaeological sites along the exposed shoreline of Lake Powell, to Rainbow Bridge National Monument, or to any areas associated with Rainbow Bridge or the Colorado River which interested tribes may consider to be a traditional cultural property. Potential effects will be minimized by implementing current protective measures as archaeological sites are identified, by continuing to adhere to the terms of the 1995 Programmatic Agreement governing visitation at Rainbow Bridge National Monument, and by undertaking ethnographic studies related to the Rainbow Bridge, the Colorado River and other areas within Glen Canyon NRA. On September 29, 2008, the Utah State Historic Preservation Office (SHPO) concurred with the NPS determination of "no adverse effect."

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat

As a result of the lack of suitable habitat, no federally listed threatened or endangered species are known or expected to occur in the project area. No portion of the site lies in or near designated critical habitat for any listed species. Informal telephone and e-mail consultation between NPS biologists and U.S. Fish and Wildlife Service biologists from the Arizona

Ecological Services Field Office determined that the project would not impact any of the basin fish species because they are seldom found in the impoundment area of Lake Powell. In addition, it was determined that the California condor mitigation measures included in the EA are sufficient to protect this species from any project-related impacts. No further consultation under § 7 of the Endangered Species Act is necessary.

Whether the action threatens a violation of federal, state, or local environmental protection law

The action will not violate any federal, state, or local environmental protection laws.

Impairment

The NPS has determined that implementation of the proposal will not constitute an impairment to the resources and values at Glen Canyon NRA. This conclusion is based on a thorough analysis of the environmental impacts described in the EA, the public comments received, relevant scientific studies, and the professional judgment of the decision-maker guided by the direction in the 2006 NPS *Management Policies*. Although the plan/project has some negative impacts, in all cases these adverse impacts are the result of actions taken to restore park resources and values. Overall, implementation of the plan would benefit park resources and values, would provide opportunities for their enjoyment, and would not result in their impairment.

Unacceptable impacts

The impact threshold at which impairment occurs is not always readily apparent. Therefore, the NPS applies a standard that offers greater assurance that impairment will not occur. The NPS will do this by avoiding impacts that it determines to be unacceptable. These are impacts that fall short of impairment but are still not acceptable in a particular park's environment. Park managers must not allow use that would cause unacceptable impacts; they must evaluate existing or proposed uses and determine whether the associated impacts on park resources and values are acceptable. The implementation of the plan would not result in unacceptable impacts to park resources and values.

Appropriate use

Section 1.5 of *Management Policies* (2006), *Appropriate Use of the Parks*, directs that the NPS must ensure that park uses that are allowed would not cause impairment of, or unacceptable impacts on, park resources and values. A new form of park use may be allowed in a park only after a determination has been made in the professional judgment of the park manager that it will not result in unacceptable impacts.

Castle Rock Cut is an existing channel used by boats when lake levels are above 3,620 feet. Excavating in the existing cut and selecting the alternative with a minimal amount of disposal materials while still meeting the project purpose and need will ensure that unacceptable impacts to park resources and values will not occur. The proposed deepening of Castle Rock Cut is consistent with the park's general management plan and other related park plans. With this in mind, the NPS finds that deepening Castle Rock Cut is an acceptable use at Glen Canyon NRA.

PUBLIC INVOLVEMENT

The EA was made available for public review and comment during a 30-day period ending March 20, 2008. To notify the public of this review period, a press release was mailed to stakeholders, affiliated Native American tribes, interested parties, and newspapers. Copies of the document were sent to certain agencies and interested parties, made available in local repositories, and posted on the Internet. Most comments expressed support for the project, stating that proceeding with the project would improve boater safety, particularly when passing through the Channel; reduce fuel costs; reduce emissions; reduce water and air pollution caused by boats traveling uplake via the longer route through the Channel; reduce travel time to

uplake destinations; and benefit the local economy. A few responses were in opposition to the project, in general stating that the purpose and need are not sufficient to justify the project; the project favors one small special interest group (boaters); the data used for the project do not include climate change or drought; the cost should not be borne by taxpayers; the project would harm the cultural properties of Rainbow Bridge and the Colorado River; and the project would harm natural resources. Responses to substantive comments received during the public comment period are presented in the attached Errata Sheet.

Glen Canyon NRA consulted with the Utah and Arizona SHPOs (the latter declined to participate), as well as with 11 Native American tribes (including the Navajo Tribal Historic Preservation Office) that have identified an interest in the Glen Canyon region. Tribal consultation was initiated during the preliminary planning and scoping phase of the proposed project. Letters outlining the proposed project and requesting comments were sent to the Native American tribes that had identified an interest in the Glen Canyon region during the tribal and public scoping period for the proposed Castle Rock Cut project. In response, Glen Canyon NRA received two letters from tribal authorities: one from the Cultural Resources Manager of the Hopi Tribe and one from the Program Manager of the Navajo Nation Historic Preservation Department-Traditional Cultural Program (HPD-TCP). The Hopi Tribe expressed concerns about completing a project that "seems to only serve as a convenience to the boating public." The letter sent by the Navajo Nation stated that the "HPD-TCP had concluded the proposed undertaking/project area will not impact any Navajo traditional cultural properties or historical properties."

In addition to the scoping notice and letters received, Glen Canyon's Native American Liaison attended council meetings held by non-Navajo tribes and individual Navajo Nation chapters. The information, comments, and concerns gathered during these consultation meetings, if substantive and related to the project, have been incorporated into the EA.

The EA was sent to members of the Rainbow Bridge Native American Consultation Committee for its review and comment. The park also consulted with a subset of Native American tribes at the annual Rainbow Bridge Native American Consultation Committee meeting in October 2007 and again in February 2008. The consensus feedback given to the NPS at the close of the February 2008 meeting indicated that the tribes did not oppose the project, with the understanding that the provisions of the 1993 Rainbow Bridge National Monument General Management Plan and the 1995 Programmatic Agreement would continue to be met by all parties. The February 2008 meeting was not attended by all interested tribes.

In response to the EA, a letter was received on March 3, 2008 from the Hopi Tribe expressing several concerns with the project, including the concern that the preferred alternative would adversely affect cultural resources significant to the Hopi Tribe. Responses to the substantive comments about issues other than cultural resources which were raised in the letters from the Hopi Tribe are presented in the Errata Sheet.

Since the Hopi Tribe did not participate in the February 2008 meeting, Glen Canyon NRA staff (including the American Indian Liaison) participated in administrative meetings with the Hopi Tribe in April and August 2008. In a letter to the park, dated August 25, 2008, the Hopi Tribe remained concerned about possible adverse effects from this project, but acknowledged that an ethnographic study would mitigate them. The park sent a letter to the Utah SHPO on September 22, 2008 with a "no adverse effect" determination and received concurrence from the SHPO on October 8, 2008.

CONCLUSION

As described above, the preferred alternative does not constitute an action meeting the criteria that normally require preparation of an Environmental Impact Statement (EIS). The Preferred Alternative will not have a significant effect on the human environment. Environmental impacts that could occur are limited in context and intensity, with generally adverse impacts that range from localized to widespread, short- to long-term, and negligible to moderate. There are no unmitigated adverse effects on public health, public safety, threatened or endangered species, sites or districts listed on or eligible for listing on the National Register of Historic Places, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, major cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection law.

Based on the foregoing, the NPS has determined that an EIS is not required for this project and thus will not be prepared.

Recommended: Brian Carney 10/30/08
for Stan Austin, Superintendent Date
Glen Canyon National Recreation Area

Approved: Michael D. Snyder 11/3/00
Michael D. Snyder Date
Director, Intermountain Region
National Park Service

**National Park Service
U.S. Department of the Interior**

**Glen Canyon National Recreation Area
Utah**



**ERRATA SHEET
ENVIRONMENTAL ASSESSMENT
DEEPEN CASTLE ROCK CUT**

Subsequent to the 30-day comment period, the Glen Canyon National Recreation Area received Utah State Historic Preservation Office concurrence (dated September 29, 2008) with the National Park Service (NPS) determination that the Preferred Alternative will have "no adverse effect" on known historic properties. The U.S. Army Corps of Engineers (Corps) indicated on July 18, 2008, that the proposed action is authorized under an individual Section 404 permit, pursuant to Section 404 of the Clean Water Act. On April 2, 2008, the Utah Department of Environmental Quality (UDEQ) issued its water quality certification for the project pursuant to Section 401 of the Clean Water Act. The Corps also stated the project must comply with the general terms and conditions associated with the Section 404 permit and those associated with the UDEQ Section 401 certification. This correspondence has been incorporated into the administrative record for this project.

During the 30-day comment period, 301 individuals, Native American tribes, and special interest groups submitted comments, with the majority of comments (i.e., 294, or 97%) coming from individuals expressing support for the project. The other commenters provided the following substantive comments wherein specific questions were asked or comments were made regarding the purpose, need, and impacts of the project.

Comment: In the proposal document, it states that one side of the deepened Cut will be sloped, and the other side will be a vertical wall. Shouldn't both sides be sloped, to allow for wave dissipation? There are vertical walls in the Narrows, and waves tend to reverberate all day long, making boating very treacherous.

Response: To avoid intrusion into the wilderness area immediately adjacent to the project area, the south side of Castle Rock Cut will be cut vertically. The need to allow for adequate wave dissipation has been factored into the project design and will occur across the cut slope on the north side of the deepened channel. In addition, the 150-foot-wide channel and strict no wake zone, in conjunction with the slope on the north side of the cut, should inhibit the reproduction of conditions experienced by vehicles traveling through the Channel while avoiding impacts to the proposed wilderness area.

Comment: From the 400,000 cubic yards of excavated materials, is the best place of disposal really below the high-water line of 3,700 feet, within Lake Powell's area? Sandstone sediment moves quickly and I'm worried it would fill the Cut back in.

Response: The disposal site for excavated materials is currently above the lake level and dry; therefore, placement of excavated materials at the disposal site should not have an immediate impact on water quality. Turbidity levels in the immediate vicinity of the disposal site will

increase if lake waters unexpectedly inundate Castle Rock Cut during active excavation or before the dredged material has become stabilized. However, this effect will be short-term, and such an increase in turbidity will have only a minor impact to local water quality. Excavated material will be deposited in existing topographic depressions and compacted and shaped in a manner that will permit storm runoff with a minimum of erosion. A berm will be constructed between the disposal area and the newly excavated channel to prevent sediment from reentering the newly excavated channel and the lake during post-construction rainfall events. After the dredged material has become stabilized, fluctuations in reservoir water levels will continue to generate small amounts of turbidity periodically, but this is consistent with the usual overall pattern of turbidity in Lake Powell.

Comment: The proposed channel cut at the Castle Rock would divert traffic away from the Antelope Marina; therefore, the socioeconomic impact is obvious and would be damaging to the established Navajo marina and its future developments.

Response: The project will have a beneficial impact to the local community, including the neighboring Navajo Nation and other nearby tribal communities. During Native American consultation, the manager of the Antelope Point Marina, LLC, reported that most of the revenue at Antelope Point Marina is from the rental of houseboats, slips, and speedboats. Very little is gained from those passing through the Channel in front of the marina. Marina management has speculated that easing the rough water in the Channel by rerouting traffic through the cut, as well as an expected increase in general visitation to the lake due to the cut being opened, will have the effect of increasing revenue, which will increase the amount the western chapters of the Navajo Nation receive.

Comment: On page 1, Summary on the third paragraph the statement eludes to "detour has resulted in longer travel time, additional user costs, and reduced safety". As to create a deeper cut in the land to reduce safety for boaters does not hold water either because no statistical data is provided (daily, weekly, monthly and yearly), which would show the number of incidents and/or accidents that occurred on the lake by using the channel route.

Response: Statistical data on safety incidents are not available for the Channel specifically. Information on lakewide incidents is available but does not reflect the specific conditions associated with boat traffic through the Channel. However, NPS Law Enforcement has verified that boat traffic and resulting wake conditions in the Channel have created a high level of danger for boaters, especially those with smaller vessels. In addition, the scoping notice and the Environmental Assessment (EA) elicited many comments showing a high level of perceived danger from the boating public, identifying it as a key concern. The project will improve the safety of boaters traveling between Wahweap Bay and Warm Creek Bay by reducing the amount of traffic traveling through the Channel and thus reducing the high wake conditions and congestion within the vertical-walled Channel. The deepened Castle Rock Cut will have a top width of 150 feet, with a slope of 1.5:1 on the north side of the cut. This design will allow the wake from boats to more easily dissipate compared with the vertical walls of the Channel. A posted no wake zone, strict speed limits, and the absence of a marina in Castle Rock Cut will also contribute to greater safety in Castle Rock Cut over the current congested conditions in the Channel.

Comment: The Castle Rock Cut will be tight and narrow, too. Indeed, it is possible the cut will increase the danger of boating at Lake Powell. It is possible that the risk to non-motorized boaters will actually be higher at the cut than The Narrows. Our organizations are compelled to suggest that the problems of boat safety have not been properly addressed at all in this Environmental Assessment.

Response: The project will improve the safety of boaters traveling between Wahweap Bay and Warm Creek Bay by reducing the amount of traffic traveling through the Channel and thus reducing the high wake conditions and congestion within the vertical-walled Channel. The deepened Castle Rock Cut will have a top width of 150 feet, with a slope of 1.5:1 on the north side of the cut. This design will allow the wake from boats to more easily dissipate compared with the vertical walls of the Channel. A posted no wake zone, strict speed limits, and the absence of a marina in Castle Rock Cut will also contribute to greater safety in Castle Rock Cut over the current congested conditions in the Channel.

Comment: Does the Park Service intend to continue deepening Castle Rock Cut until the reservoir reaches the level of the penstocks at Glen Canyon Dam (3490 feet), or the level of the bypass tubes (3375 feet)?

Response: At this time, the NPS does not plan to deepen the cut past 3,580 feet in elevation. According to the forecast from the Bureau of Reclamation (Reclamation), at the 3,580-foot elevation, Castle Rock Cut should be open approximately 82 percent of the peak boating season over the next 20 years. It is possible that, in the future, a combination of circumstances may make creation of a passage between Wahweap Bay and Warm Creek Bay at a lower elevation desirable. If this occurs, it is extremely probable that such a passage would be created by deepening Castle Rock Cut further because it has already been disturbed previously and, therefore, will result in fewer environmental impacts. However, we do not foresee any such action at this time.

Comment: Since submitting our scoping comments in December, scientists from the Scripps Institute provided further evidence that Lakes Mead and Powell will naturally drain due to the effects of over-consumption and increased overall evaporation due to atmospheric warming. Their report has forecasted that the reservoirs have a 50/50 chance of going empty by 2021.

Response: The February 12, 2008, news release issued by Scripps Institute indicated there is a 50 percent chance that Lake Mead, not Lake Powell, could be dry by 2021. The news release did include the prediction that there is a 50 percent chance the levels of Lake Powell will become too low to permit hydroelectric power generation by 2017. The Reclamation forecast was used because, as the manager of Glen Canyon Dam and water levels of Lake Powell, Reclamation is familiar with Lake Powell, the management of water releases from the Dam, and is better equipped to predict future lake elevations. We acknowledge, however, that the forecast does not take into account the effects of long-term climate change that could result in lower lake levels than referenced in the forecast. We believe that the forecast provided by Reclamation is valid and that, even if lake levels are lower than those referenced in the forecast, the deepened Castle Rock Cut will still provide the same percent advantage (or a proportionate increase in the percent of time the cut will be open to the public) over the existing cut.

Comment: We wondered what the cost of this proposal is in relation to the number of boaters that will enjoy the convenient short-cut, and how long the NPS expects this proposal to provide this convenience before another deepening is necessary. We stated that we believed this proposal lacks a compelling government interest and that its purpose and need does not serve the public interest, but instead serves the convenience of a small local interest group. We noted that the NPS had identified a preliminary range of alternatives that includes a No-Action Alternative and the Proposed Action, and that the National Environmental Policy Act requires a range of alternatives. We have now reviewed the enclosed Environmental Assessment. This Environmental Assessment includes no serious alternatives, only a deeper cut and not other cut alternatives, dismissed from further analysis.

Response: At this time, the NPS does not plan to deepen the cut past 3,580 feet in elevation. According to the forecast from the Bureau of Reclamation (Reclamation), at the 3,580-foot

elevation, Castle Rock Cut should be open approximately 82 percent of the peak boating season over the next 20 years. It is possible that in the future, a combination of circumstances may make creation of a passage between Wahweap Bay and Warm Creek Bay at a lower elevation desirable. If this occurs, it is extremely probable that such a passage would be created by deepening Castle Rock Cut further because it has already been disturbed previously and, therefore, would result in fewer environmental impacts. However, we do not foresee any such action at this time.

It is true that this project provides a convenience to boaters. However, this project will also provide a number of other benefits, such as reducing the emergency response time to accidents in uplake areas, lowering noise levels in Wahweap Bay, Antelope Canyon, and the Channel by dispersing traffic, enhancing the local economy (including that of the Navajo Nation) as a result of increased lake visitation, increasing the health of the recreational fishery, and reducing the amount of fuel consumed (and pollutants generated) by shortening the distance boats have to travel between Wahweap Bay and Warm Creek Bay.

The alternatives analyzed in the EA (pages 13-16 in the EA, pages 1-2 in the FONSI), represented the widest practicable range within the scope of NPS responsibilities, the purpose and need of the project, and the surrounding land formations. Pursuant to the National Environmental Policy Act, a no-build alternative and several build alternatives were considered and evaluated. As stated in the EA, no other cuts exist that could be modified to allow boating traffic to travel from Wahweap Bay to Warm Creek Bay and other uplake areas. Based on the impact assessment, the least environmentally damaging practicable alternative was identified.

Comment: In our November 13th letter, we stated the NPS must address the reality of continuing long-term drought, as well as existing and increasing water usage from Lake Powell. The Environmental Assessment includes a table provided by the Bureau of Reclamation that "does not include influences from climate change, which are expected to reduce inflows to Lake Powell," and uses statistics from 1906-2005. Therefore, we conclude these estimates are as intentionally blind to the acknowledged reality of climate change and continuing long-term drought as the Preferred Alternative they are employed to justify. Alternative 2, the Preferred Alternative acknowledges but intentionally dismisses from analysis the realities of continuing long-term drought, the influences of climate change, including global warming, and increasing water usage.

Response: The Reclamation forecast was used because, as the manager of Glen Canyon Dam and water levels of Lake Powell, Reclamation is familiar with Lake Powell and the management of water releases from the Dam and is better equipped to predict future lake elevations. We acknowledge, however, that the forecast does not take into account the effects of long-term climate change that could result in lower lake levels than referenced in the forecast. We believe that the forecast provided by Reclamation is valid and that, even if lake levels are lower than those referenced in the forecast, the deepened Castle Rock Cut will still provide the same percent advantage (or a proportionate increase in the percent of time the cut will be open to the public) over the existing cut.

Comment: In our November 13th letter, we stated that at a minimum, this proposal would likely adversely affect water resources and fish and wildlife. We also noted the project area and 50 acre disposal area are directly adjacent to a proposed wilderness area. Furthermore, this Environmental Assessment identifies Alternative 2, the Preferred Alternative as the environmentally preferred alternative in spite its statement that Alternative 1, the No Action Alternative, "meets the objective for minimizing impacts to park resources because no construction would occur."

Response: Alternative 2 will have the potential for minor adverse impacts to water quality due to increases in fuel and fecal matter discharges into the water during and following construction activities. However, no violations of water quality standards are expected. A short-term adverse impact to water quality from increased suspended sediment in the immediate construction area is expected. The conditions of the UDEQ Section 401 water quality certification have been included as special conditions in the Corps' Section 404 permit, which was issued on July 18, 2008, to ensure that the project meets state water quality standards.

This alternative will inundate, at least seasonally, approximately 8 acres of altered Russian thistle and tamarisk vegetation and will impact approximately 50 acres of tamarisk and Russian thistle north of the channel in the disposal area. This will have a minor impact on wildlife. However, due to a lack of suitable habitat, no federally listed threatened or endangered species are known or expected to occur in the project area. No portion of the site lies in or near designated critical habitat for any listed species.

Alternative 2 will have a beneficial impact on the sport fish population by increasing angler pressure and dispersing anglers across the lake. Native desert fish once ranged in perennial stretches of Wahweap Bay and Warm Creek Bay drainages. However, habitat for native desert fish has never existed in the project vicinity. Therefore, no adverse impacts to native fish are expected and, if anything, the seasonal creation of an additional 8 acres of aquatic habitat will have a beneficial impact on native fishes.

While the project area is directly adjacent to a proposed wilderness area, the south side of Castle Rock Cut is being deepened vertically, and the disposal area for excavated materials will be located north of the cut to avoid the 3,620-foot elevation boundary of the proposed wilderness area. The disposal area will be visible from the wilderness area, but all excavated materials will consist of native Navajo sandstone and, when not inundated by water from Lake Powell, is expected to revegetate over time in a similar manner to the surrounding area.

The NPS considers several criteria to determine the environmentally preferred alternative. Although Alternative 1 minimizes impacts to park resources because no construction would occur, it does not satisfy the project's purpose and need for improving navigation and visitors' experiences at Lake Powell or meet other criteria. Alternative 2 better achieves "a balance between population and resource use," "the widest range of beneficial uses of the environment without degradation," and, because Alternative 2 has no unacceptable impacts on park resources or values, it preserves "important historic, cultural, and natural aspects of our national heritage." Because Alternative 2 better meets the purpose and need of the project and the criteria of the environmentally preferred alternative, it was selected as the environmentally preferred alternative.

Comment: Rainbow Bridge and the Colorado River are Traditional Cultural Properties of the Hopi Tribe. We believe Alternative 2, the Preferred Alternative will result in additional adverse effects to Rainbow Bridge and the Colorado River. Therefore, we have determined that Alternative 2, the Preferred Alternative will adversely affect cultural resources significant to the Hopi Tribe.

Response: While visitation numbers to Rainbow Bridge are expected to increase following the opening of Castle Rock Cut, these numbers are not expected to exceed past levels. Actual visitation will be limited in accordance with the 1993 Rainbow Bridge General Management Plan and the 1995 Programmatic Agreement. Therefore, this project should have no impacts that are outside the constraints of these documents. On February 6, 2008, a meeting was held between the NPS and the Rainbow Bridge Native American Consultation Committee to discuss the possible impacts of the proposed Castle Rock Cut project. The consensus feedback given to the NPS at the close of the meeting indicated that the tribes did not oppose the project, with the understanding that

the provisions of the 1993 Rainbow Bridge National Monument General Management Plan and the associated 1995 Rainbow Bridge National Monument Programmatic Agreement will continue to be met by all parties. The February 2008 meeting was not attended by all interested tribes.

In response to the EA, a letter was received on March 3, 2008 from the Hopi Tribe expressing several concerns with the project, including the concern that the preferred alternative would adversely affect cultural resources significant to the Hopi Tribe. In response to the March 2008 letter, meetings were held with the Hopi Tribe in April and August 2008. At the April 2008 meeting the tribe recognized that the project would affect the inundated main channel of the Colorado River, which they consider to be a traditional cultural property. In a July 7, 2008 letter, however, the Hopi Tribe reiterated their belief that the project would have adverse effects on cultural resources. After an additional meeting on August 20, 2008, an additional letter was received on September 2, 2008. In that letter, dated August 25, 2008, the Hopi Tribe remained concerned about possible adverse effects from this project, but acknowledged that an ethnographic study of the Colorado River as a Traditional Cultural Property would mitigate these possible effects.

On September 17, 2008 the park responded to the Hopi Tribe acknowledging their interest in the designation of the Colorado River and Rainbow Bridge as Traditional Cultural Properties and informing them of the status of current funding proposals for the necessary ethnographic studies. On September 22, the park submitted to the Utah SHPO a summary of the tribal consultation efforts related to this EA, the status of a funding proposal for ethnographic studies, and a description of the procedure to develop a Memorandum of Agreement to guide these future investigations. On September 29, 2008, the Utah SHPO concurred with the NPS determination of "no adverse effect" and concurred with our finding that the concerns of the Hopi Tribe had been satisfied.