

## Consultation and Coordination

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## **CONSULTATION AND COORDINATION**

During the planning process for the 2008 Uplake DCP/EA, formal and informal efforts were made by the National Park Service to involve the public and federal, state and local agencies in the planning process. The project was launched by requesting comments, through the scoping process, to determine the range of issues that affect the study areas and the issues the public has interest in through the planning process.

Native American tribes with interest in the park were contacted by letter with request for scoping comments. Response letters were received from the Navajo Nation and the Pueblo of Isleta. Both tribes determined that the projects included in the 2008 Uplake DCP would have no impact on religious or cultural sites affiliated with each of the tribes.

## **AGENCY CONSULTATION**

### **Endangered and Special-Status Species**

The Endangered Species Act of 1973, as amended (16 USC 1531 *et seq.*), requires that all federal agencies to consult with the USFWS to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. The National Park Service obtained a list of federally endangered, threatened, proposed and candidate species that may occur in the Bullfrog, Halls Crossing and Hite developed areas from the USFWS (see appendix D).

The USFWS is engaged in formal consultation with the National Park Service as part of the endangered and special-status species analysis in the 2006 Uplake DCP/EA. The USFWS concurred with the park staff's finding of "may affect, no likely to adversely affect" the Southwestern Willow Flycatcher. A copy of their response can be found in the appendices. After careful consideration, park biologists have determined that the changes incorporated into the 2008 Uplake DCP/EA would have no additional impacts to species covered by the Endangered Species Act and further consultation with the USFWS was not required.

### **Cultural Resources**

The NPS cultural resource management program operates in accordance with Section 106 of the National Historic Preservation Act and 36 CFR Part 800 and other laws, regulations and policies. In accordance with the National Historic Preservation Act, efforts were made to identify and consider traditional cultural places. Traditional cultural places are ethnographic resources that are eligible for inclusion in the NRHP because of their association with cultural practices or beliefs of a living community that are (1) rooted in that community's history and (2) important in maintaining the continuing cultural identity of the community. Construction activities would avoid impacting known cultural resources in compliance with Section 106 of the National Historic Preservation Act and NPS policy. Cultural resource surveys would also occur for any areas not previously covered prior to any construction activities contemplated by this 2008 Uplake DCP. A copy of this DCP/EA would be sent to the Utah SHPO for concurrence on the proposed project activities and historic resource protection. Should unknown archeological resources be uncovered during construction, work would be halted in the

discovery area, the site secured and Glen Canyon NRA would consult according to 36 CFR 800.13 and, as appropriate, provisions of NAGPRA.

A scoping letter was sent to the Utah State Historic Society on June 2008. No comments have been received to date. To continue coordination, this 2008 DCP/EA will be submitted to the Utah State Historic Society for comment during the public comment period.

## **PUBLIC INVOLVEMENT**

The purpose of the scoping process is to identify issues and concerns related to the project and to identify the range of issues to be addressed in the environmental assessment. In preparation for scoping, a mailing list of approximately 100 individuals was established. A scoping notice was prepared in May 2008 and mailed to those on the list. The scoping notice included a brief description of the issues and opportunities for public participation. The notice referenced the Web site where readers could obtain more information and send comments. A press release was issued by the National Park Service, Glen Canyon NRA, in May announcing the initiation of the scoping process.

## **INDIVIDUALS INVOLVED IN PREPARATION AND REVIEW OF THE DOCUMENT**

### **List of Preparers**

The 2008 Uplake DCP/EA was prepared by park staff and incorporated much of the 2006 Uplake DCP/EA written by engineering-environmental Management, Inc. (e<sup>2</sup>M), under the direction of the National Park Service. Glen Canyon NRA park staff provided critical and valuable assistance in the development and technical review of this document.

### **National Park Service**

Stan Austin – Superintendent  
Dan Bishop – Chief, Facilities and Maintenance  
Julie Drugatz – Concessions Management Specialist  
Jacki Blais - Concessions Management Specialist  
Thann Baker – Archeologist  
Lex Newcomb – GIS Specialist  
Lou Good – Chief, Business Management  
Barbara Wilson – Environmental Specialist/ Planner  
Pauline Wilson - American Indian Liaison

### **List of Agencies and Organizations**

Organizations and agencies contacted for information, or that assisted in identifying important issues, developing alternatives, or analyzing impacts; or that will be invited to review and comment on the DCP/EA are listed below.

### **Federal Agencies**

U.S. Army Corps of Engineers

U.S. Bureau of Reclamation  
U.S. Fish and Wildlife Service

### **State Agencies**

Utah Department of Environmental Quality  
Utah Department of Natural Resources  
Utah Division of Wildlife Resources  
Utah State Historic Society

### **Local Governments / Organizations**

ARAMARK Sports and Entertainment Services, Inc.

The preparation of the 2008 Uplake DCP/EA is considered one of the nonNAGPRA-related projects. Since Glen Canyon NRA has routinely used the list of 13 tribes to consult on other non-NAGPRA-related work such as planning, management and visitor education activities, it would be consistent to use this shorter list for consultation on the DCP/EA including:

Hopi Tribal Council, Arizona  
Havasupai Tribal Council, Arizona  
Hualapai Indian Tribal Council, Arizona  
Kaibab Paiute Tribal Council (This Tribal Band  
is included/Paiute Indian Tribe of Utah)  
Navajo Nation, Arizona, New Mexico & Utah  
Pueblo of Acoma, New Mexico  
Pueblo of Nambe, New Mexico  
Pueblo of San Juan, New Mexico  
Pueblo of Zuni, New Mexico  
Pueblo of Isleta, New Mexico  
Paiute Indian Tribe of Utah Council (Kanosh,  
Koosharem, Shivwits Bands)  
San Juan Southern Paiute Council, Arizona  
Ute Mountain Ute Tribal Council (White Mesa  
Ute Band), Colorado & Utah

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## Appendix A – Class C Costs

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Building cost estimate

Number	Item	Unit	Unit Cost	Quantity	Extended cost	Notes and/or assumptions
Employee, Concessioner, and Partner Housing						
Alternative A		Total			\$0.00	
No cost associated with Alternative A						
Alternative B		Total			\$2,654,586.00	
Site Development - Demolition	LS	\$311,220.00	1	\$311,220.00	Includes clearing and grubbing 27.3 acres of land. Housing includes: 1) 4 NPS 3-bedroom houses that are 1,300 square feet. 2) One concessioner dormitory that is 3,000 square feet. 3) 8 partner 3-bedroom houses that are 1,300 square feet.	
Site Development - New Housing	LS	\$1,871,000.00	1	\$1,871,000.00	Cost of upgrade is 50% the cost of a new RV site.	
Site Development - Upgrade RV Park	LS	\$272,400.00	1	\$272,400.00	Landscaping is 10% the cost of each housing unit. Includes earthwork, seeding, and	
Site Rehabilitation - Landscaping	LS	\$187,100.00	1	\$187,100.00	planting shrubs and small trees.	
Site Rehabilitation - Reclaim concessioner RV park	LS	\$12,666.00	1	\$12,666.00	Reclaim the land using native plants.	
Alternative C		Total			\$2,654,586.00	
Same as Alternative B						
Visitor Overnight Accommodations						
Alternative A		Total			\$0.00	
No cost associated with Alternative A						
Alternative B		Total			\$5,129,256.00	
Site Development - Demolition	LS	\$75,800.00	1	\$75,800.00	Assume that medium grubbing is required for site preparation. 6.6 acres is for family rental units and 0.4 acres is for the lodge.	
Site Removal - Removal of existing family rental units	LS	\$40,000.00	1	\$40,000.00	Assume that it costs \$5,000 to remove each of the 8 modular homes. Expansion includes 60 rooms. Assume that each room is 400 square feet and	
Site Development - Expand Lodge	LS	\$1,920,000.00	1	\$1,920,000.00	Each modular house is 800 square feet. Includes the replacement of the existing 8	
Site Development - Add Family Rental Units	LS	\$2,724,960.00	1	\$2,724,960.00	family rental units and 34 additional family rental units. Landscaping is 10% the cost of each housing unit. Includes earthwork, seeding, and	
Site Rehabilitation - Landscaping	LS	\$464,496.00	1	\$464,496.00	planting shrubs and small trees.	
Alternative C		Total			\$5,129,256.00	
Same as Alternative B						
Visitor Camping						
Alternative A		Total			\$0.00	
No cost associated with Alternative A						
Alternative B		Total			\$2,513,631.00	
Site Development - Demolition	LS	\$4,560.00	1	\$4,560.00	Assume that medium grubbing is required for site preparation. 0.4 acres will need to be prepared for the RV park.	
Site Development - Camp sites	LS	\$260,110.00	1	\$260,110.00	The plan calls for 128 additional sites for the campground. Assume that 85 will be with hookups and 57 will not include RV hookups. 8 sites will be a pod of group campsites, each site accommodating 15 people. Price includes additional restroom facilities, roads, and other improvements.	
Site Development - RV sites	LS	\$1,929,500.00	1	\$1,929,500.00	The plan calls for 128 additional sites for the campground. Assume that 85 will be with hookups and 57 will not include RV hookups. 6 sites will be a pod of group campsites, each site accommodating 15 people. Price includes additional restroom facilities, roads, and other improvements.	
Site Development - Group Campsites	LS	\$41,100.00	1	\$41,100.00	Class C estimating guide provides a cost per group site accommodating 25 people.	
Site Development - Amphitheater	LS	\$54,000.00	1	\$54,000.00	Estimate cost for 6 sites accommodating 15 at 4 sites accommodating 25.	
Site Rehabilitation - Landscaping	LS	\$224,381.00	1	\$224,381.00	Amphitheater holds 50 visitors and costs \$1080 per seat. Landscaping costs are 10% of the building costs for all structures and camp sites.	
Alternative C		Total			\$2,513,631.00	
Same as Alternative B						
Shower and Laundry Facilities						
Alternative A		Total			\$0.00	
No cost associated with Alternative A						

#### Building cost estimate

<b>Alternative B</b>	<b>Total</b>	<b>\$249,150.00</b>
Site Development - Shower and laundry facility	LS	\$226,600.00 1
Site Rehabilitation - Landscaping	LS	\$22,600.00 1
<b>Alternative C</b>	<b>Total</b>	<b>\$249,150.00</b>
Same as Alternative B		

#### Land based stores

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A		
<b>Alternative B</b>	<b>Total</b>	<b>\$328,000.00</b>
Site Preparation	LS	\$21,600.00 1
Site Development - Expand Village Center store	LS	\$150,000.00 1
Site Development - Construct general store at the campground	LS	\$119,000.00 1
Site Rehabilitation	LS	\$37,400.00 1
<b>Alternative C</b>	<b>Total</b>	<b>\$328,000.00</b>
Same as Alternative B		

#### Land-Based Food Service

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A		
<b>Alternative B</b>	<b>Total</b>	<b>\$105,000.00</b>
Site Development - Expand Anasazi Restaurant	LS	\$105,000.00 1
<b>Alternative C</b>	<b>Total</b>	<b>\$105,000.00</b>
Same as Alternative B		

#### Day use Facilities

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A		
<b>Alternative B</b>	<b>Total</b>	<b>\$0.00</b>
Same as Alternative A		
<b>Alternative C</b>	<b>Total</b>	<b>\$0.00</b>
Same as Alternative A		

#### Ranger Station/Visitor Contact Station and Emergent Facilities

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A		
<b>Alternative B</b>	<b>Total</b>	<b>\$0.00</b>
Same as Alternative A		
<b>Alternative C</b>	<b>Total</b>	<b>\$0.00</b>
Same as Alternative A		

#### Concessioner Boat Maintenance and Repair, and Proper Maintenance Facilities

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A		

#### Building cost estimate

<b>Alternative B</b>				
<b>Total</b>				<b>\$106,433.00</b>
Site Demolition - Relocation of concessioner facilities	LS	\$100,000.00	1	\$100,000.00 Assume the cost is \$100,000 to move the all structures and clean up the site.
Site reclamation - Reclamation of land where concessioner maintenance facilities were located.	LS	\$6,433.00	1	\$6,433.00 Reclaim the land using native plants.
<b>Alternative C</b>				
<b>Total</b>				<b>\$106,433.00</b>
Same as Alternative B				
<b>National Park Service Maintenance Facilities</b>				
<b>Alternative A</b>				
<b>Total</b>				<b>\$0.00</b>
No cost associated with Alternative A				
<b>Alternative B</b>				
<b>Total</b>				<b>\$0.00</b>
Same as Alternative A				
<b>Alternative C</b>				
<b>Total</b>				<b>\$153,534.00</b>
Site Demolition - Relocation of NPS facilities	LS	\$100,000.00	1	\$100,000.00 Assume the cost is \$100,000 to move the all structures and clean up the site.
Site Demolition - Cleaning and grubbing	LS	\$29,640.00	1	\$29,640.00 Assume that medium grubbing is required for site preparation. Assume that one acre needs to be reclaimed.
Site reclamation - Reclamation of land where NPS maintenance facilities were located.	LS	\$23,894.00	1	\$23,894.00 Reclaim the land using native plants. Assume one acre needs to be reclaimed.
<b>Secured Storage</b>				
<b>Alternative A</b>				
<b>Total</b>				<b>\$0.00</b>
No cost associated with Alternative A				
<b>Alternative B</b>				
<b>Total</b>				<b>\$1,705,900.00</b>
Site Demolition - Cleaning and grubbing	LS	\$66,400.00	1	\$66,400.00 Assume that medium grubbing is required for site preparation.
Site Development - Secured spaces	LS	\$200,000.00	1	\$200,000.00 Assume it costs \$1000 per space and that the expansion includes 200 additional spaces. This includes paving, lighting, and other utilities that are required.
Site Development - Enclosed storage	LS	\$1,237,500.00	1	\$1,237,500.00 Assume 750 square feet per space for 35 space. Used vehicle storage building rate from estimating guide at \$33 per square foot.
Site Development - Perimeter screening	LS	\$200,000.00	1	\$200,000.00 Includes costs for 60 high screen wall around secured storage and concessioner maintenance facilities at \$100 per linear foot.
<b>Alternative C</b>				
<b>Total</b>				<b>\$1,705,900.00</b>
Same as Alternative B				
<b>Utility Systems</b>				
<b>Alternative A</b>				
<b>Total</b>				<b>\$0.00</b>
No cost associated with Alternative A				
<b>Alternative B</b>				
<b>Total</b>				<b>\$500,000.00</b>
Site Development - Expand energy system	LS	\$500,000.00	1	\$500,000.00 Assume it will cost \$500,000 to expand utility needs to the additional structures.
<b>Alternative C</b>				
<b>Total</b>				<b>\$1,600,000.00</b>
Site Development - Expand energy system	LS	\$500,000.00	1	\$500,000.00 Assume it will cost \$500,000 to expand utility needs to the additional structures.
Site Development - Utilize solar and fuel cell technology	LS	\$500,000.00	1	\$500,000.00 Assume it will cost \$500,000 to include solar and fuel cell technology.
<b>Roads and Parking</b>				
<b>Alternative A</b>				
<b>Total</b>				<b>\$0.00</b>
No cost associated with Alternative A				
<b>Alternative B</b>				
<b>Total</b>				<b>\$0.00</b>
Same as Alternative A				
<b>Alternative C</b>				
<b>Total</b>				<b>\$0.00</b>
Same as Alternative A				
<b>Fee Collection</b>				
<b>Alternative A</b>				
<b>Total</b>				<b>\$0.00</b>



#### Building cost estimate

No cost associated with Alternative A.					
<b>Alternative B</b>	<b>Total</b>			<b>\$130,900.00</b>	
Site Development - Upgrade Fee collection booth	LS	\$119,000.00	1	\$119,000.00	Assume fee collection booth expansion is 1000 square feet and the cost is similar to the building of a ranger station (\$119.00 per square foot).
Site Rehabilitation - Landscaping	LS	\$11,900.00	1	\$11,900.00	Landscaping costs are 10% of the building costs for all structures.
<b>Alternative C</b>	<b>Total</b>			<b>\$130,900.00</b>	
Same as Alternative B					
<b>School</b>					
No cost associated with Alternative A.					
<b>Alternative B</b>	<b>Total</b>			<b>\$500,000.00</b>	
Site Development - Install library in existing school	LS	\$500,000.00	1	\$500,000.00	Assume that the library expansion will be 2000 square feet and cost \$250 per square foot including the price of books.
<b>Alternative C</b>	<b>Total</b>			<b>\$500,000.00</b>	
Same as Alternative B					
<b>Airstrip</b>					
No cost associated with Alternative A.					
<b>Alternative B</b>	<b>Total</b>			<b>\$0.00</b>	
Same as Alternative A.					
<b>Alternative C</b>	<b>Total</b>			<b>\$0.00</b>	
Same as Alternative A.					
<b>Boat Wash-Down Area</b>					
No cost associated with Alternative A.					
<b>Alternative B</b>	<b>Total</b>			<b>\$60,000.00</b>	
Site Development - Expansion of boat wash-down facility	LS	\$60,000.00	1	\$60,000.00	Assume that it will cost \$60,000 to expand the facilities including additional water sources, structures, and other costs.
<b>Alternative C</b>	<b>Total</b>			<b>\$60,000.00</b>	
Same as Alternative B					
<b>Marina facilities</b>					
No cost associated with Alternative A.					
<b>Alternative B</b>	<b>Total</b>			<b>\$55,000.00</b>	
Site Development - Installation of buoy-field moorings	LS	\$55,000.00	1	\$55,000.00	Assume that it will cost \$1,000 per additional space for 55 extra spaces. These spaces are split with Halfa Crossing Marina but will be included here for cost purposes.
<b>Alternative C</b>	<b>Total</b>			<b>\$223,000.00</b>	
Site Development - Installation of buoy-field moorings	LS	\$55,000.00	1	\$55,000.00	Assume that it will cost \$1,000 per additional space for 55 extra spaces. These spaces are split with Halfa Crossing Marina but will be included here for cost purposes.
Site Development - Installation of wet slips	LS	\$168,000.00	1	\$168,000.00	Assume that it will cost \$3,000 per additional slip for 56 additional spaces. These spaces are split with Halfa Crossing Marina but will be included here for cost purposes.
<b>Water-Based Store</b>					
No cost associated with Alternative A.					
<b>Alternative B</b>	<b>Total</b>			<b>\$0.00</b>	

Building cost estimate

Alternative B					
Same as Alternative A				Total	\$0.00
Alternative C					
Same as Alternative A				Total	\$0.00
Water-Based Food Service					
Alternative A					
No cost associated with Alternative A				Total	\$0.00
Alternative B					
Site Development - Installation of 80-seat restaurant		LS	\$240,000.00	1	\$240,000.00 Assume that the restaurant expansion will cost \$3,000 per seat.
Alternative C				Total	\$240,000.00
Same as Alternative B					
Launch Ramps					
Alternative A					
No cost associated with Alternative A				Total	\$0.00
Alternative B					
Site Development - Extension of boat launch to water level		LS	\$86,136.00	1	\$86,136.00 Assume that the ramp will need to be extended 100 feet over the next ten years at a minimum width of 80 feet.
Alternative C				Total	\$161,505.00
Site Development - Extension of boat launch ramp to the water level at maximum width of 150 ft		LS	\$161,505.00	1	\$161,505.00 Assume that the ramp will need to be extended 100 feet over the next ten years at the maximum width of 150 feet.
Launch Ramp Support					
Alternative A					
No cost associated with Alternative A				Total	\$0.00
Alternative B					
Same as Alternative A				Total	\$0.00
Alternative C					
Same as Alternative A				Total	\$0.00
Ferry Service					
Alternative A					
No cost associated with Alternative A				Total	\$0.00
Alternative B					
Same as Alternative A				Total	\$0.00
Alternative C					
Same as Alternative A				Total	\$0.00
River Runner Takeout					
Alternative A					
No cost associated with Alternative A				Total	\$0.00
Alternative B					
Same as Alternative A				Total	\$0.00
Alternative C					
Same as Alternative A				Total	\$0.00
Grand Total					
Alternative A					
				Total	\$0.00
Alternative B					
Concept Plan Contingency			25%		\$14,463,992.00
					\$3,615,998.00

Building cost estimate

Contractors, General Conditions, Profit, Bonds, and Overhead	12%	\$1,735,675.04
<b>Subtotal</b>		<b>\$19,615,668.04 Allowance for Planning and Design Fees</b>
Architecture and Engineering Fees Allowance	20%	\$3,463,133.81
Owners Construction Contingency	5%	\$960,793.45
<b>Total</b>		<b>\$24,769,586.30</b>
<b>Alternative C</b>		
Concept Plan Contingency	25%	\$3,840,223.75
Contractors, General Conditions, Profit, Bonds, and Overhead	12%	\$1,843,307.40
<b>Subtotal</b>		<b>\$21,044,626.15 Allowance for Planning and Design Fees</b>
Architecture and Engineering Fees Allowance	20%	\$4,208,035.23
Owners Construction Contingency	5%	\$1,052,221.31
<b>Total</b>		<b>\$26,305,532.69</b>

# Hill Crossing Cost estimates

Number	Item	Unit	Unit Cost	Quantity	Extended cost	Notes and/or assumptions
<b>Employee, Concessioner, and Partner Housing</b>						
<b>Alternative A</b>					<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A						
<b>Alternative B</b>					<b>Total</b>	<b>\$4,837,872.00</b>
	Site Demolition - Clearing and grubbing	LS	\$39,900.00	1	\$39,900.00	Assume that medium grubbing is required for site preparation.
	Site Removal - Removal of existing NPS and concessioner housing units	LS	\$260,000.00	1	\$260,000.00	Assume that it costs \$5,000 to remove one modular home. Housing includes: 1) 3 NPS 3-bedroom houses that are 1,300 square feet. 2) 4 partner 3-bedroom houses that are 1,300 square feet. 3) 50,800 square-foot modular homes to replace those that were removed.
	Site Development - Housing	LS	\$3,134,120.00	1	\$3,134,120.00	Includes the installation of 12 RV sites at \$22,700 per site.
	Site Development - RV sites	LS	\$272,400.00	1	\$272,400.00	Landscaping is 10% the cost of each housing unit. Includes earthwork, seeding, and planting shrubs and small trees.
	Site Rehabilitation - Landscaping	LS	\$340,662.00	1	\$340,662.00	
<b>Alternative C</b>					<b>Total</b>	<b>\$4,837,872.00</b>
Same as Alternative B						
<b>Overnight Visitor Accommodations</b>						
<b>Alternative A</b>					<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A						
<b>Alternative B</b>					<b>Total</b>	<b>\$4,446,200.00</b>
	Site Demolition - Clearing and grubbing	LS	\$66,120.00	1	\$66,120.00	Assume that medium grubbing is required for site preparation.
	Site Removal - Removal of existing family rental units	LS	\$100,000.00	1	\$100,000.00	Assume that it costs \$5,000 to remove one modular home. Each modular house is 800 square feet. Includes the replacement of the existing 20 family rental units and 40 new family rental units.
	Site Development - Add family rental units	LS	\$3,882,800.00	1	\$3,882,800.00	Landscaping costs are 10% of the building cost.
	Site Rehabilitation - Landscaping	LS	\$309,280.00	1	\$309,280.00	
<b>Alternative C</b>					<b>Total</b>	<b>\$4,446,200.00</b>
Same as Alternative B						
<b>Visitor Camping</b>						
<b>Alternative A</b>					<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A						
<b>Alternative B</b>					<b>Total</b>	<b>\$887,241.00</b>
	Site Demolition - Clearing and grubbing	LS	\$9,120.00	1	\$9,120.00	Assume that medium grubbing is required for site preparation.
	Site Development - RV sites	LS	\$181,600.00	1	\$181,600.00	Price is for an additional 8 RV sites at \$22,700 per site. Assume that the upgrade costs 50% the cost of a new campsite for 64 sites.
	Site Development - Upgrade campsites	LS	\$224,960.00	1	\$224,960.00	Assume that the upgrade costs 50% the cost of a RV site for 32 sites.
	Site Development - Upgrade RV sites	LS	\$363,200.00	1	\$363,200.00	Assume that the campground has four standard vault toilets and that the upgrade will cost 50% of the cost of a new toilet. Assume that an upgrade costs 50% of the cost of a new waste station.
	Site Development - Upgrade restrooms	LS	\$30,200.00	1	\$30,200.00	
	Site Development - Upgrade RV waste disposal station	LS	\$31,350.00	1	\$31,350.00	
	Site Development - Landscaping	LS	\$46,811.00	1	\$46,811.00	
<b>Alternative C</b>					<b>Total</b>	<b>\$946,130.00</b>
	Site Demolition - Clearing and grubbing	LS	\$66,120.00	1	\$66,120.00	Assume that medium grubbing is required for site preparation.
	Site Development - Upgrade campsites	LS	\$224,960.00	1	\$224,960.00	Assume that the upgrade costs 50% the cost of a new campsite for 64 sites.
	Site Development - Upgrade RV sites	LS	\$363,200.00	1	\$363,200.00	Assume that the upgrade costs 50% the cost of a RV site for 32 sites. The plan calls for 16 additional sites for the campground. Assume that 10 will be without hookups and 6 will include RV hookups. Price includes additional restroom facilities, roads, and other improvements.
	Site Development - Camp sites	LS	\$70,300.00	1	\$70,300.00	The plan calls for 16 additional sites for the campground. Assume that 10 will be without hookups and 6 will include RV hookups. Price includes additional restroom facilities, roads, and other improvements.
	Site Development - RV sites	LS	\$126,200.00	1	\$126,200.00	Assume that an upgrade costs 50% of the cost of a new waste station.
	Site Development - Upgrade RV waste disposal station	LS	\$31,350.00	1	\$31,350.00	

# Hall Crossing Cost estimates

	Site Development - Amphitheater	LS	\$54,000.00	1	\$54,000.00 Amphitheater holds 50 visitors and costs \$1080 per seat.
	Site Development - Landscaping	LS	\$22,650.00	1	\$22,650.00 Landscaping costs are 10% of the building cost.
Shower and Laundry Facilities					
	Alternative A		Total	\$0.00	
	No cost associated with Alternative A.				
	Alternative B		Total	\$50,000.00	
	Laundry and shower facilities found in the expanded Village Center general store.				
	Site Demolition - Removal of shower/laundry facilities	LS	\$50,000.00	1	Assume that it will cost \$50,000 to remove the shower/laundry building and prepare the ground for reclamation.
	Alternative C		Total	\$259,150.00	
	Site Demolition - Removal of shower/laundry facilities	LS	\$50,000.00	1	Assume that it will cost \$50,000 to remove the shower/laundry building and prepare the ground for reclamation.
	Site Development - Shower and laundry facility	LS	\$226,500.00	1	Assume the building is 1500 square feet and the cost is \$150 per square foot.
	Site Rehabilitation - Landscaping	LS	\$22,650.00	1	\$22,650.00 Landscaping costs are 10% of the building cost.
Land-based Stores					
	Alternative A		Total	\$0.00	
	No cost associated with Alternative A.				
	Alternative B		Total	\$470,475.00	
	Site Demolition - Clearing and grubbing	LS	\$4,560.00	1	\$4,560.00 Assume that medium grubbing is required for site preparation.
	Site Demolition - Removal of existing Village Center store	LS	\$50,000.00	1	Assume that it will cost \$50,000 to remove the general store and prepare the ground for construction of the new store.
	Site Demolition - Minor regrading of the fuel station area	LS	\$13,068.00	1	\$13,068.00 Assume that 0.5 acres will need minor regrading (top 2-3 inches). Assume that the price will be equal to the price for the building of a new shower/laundry facility (\$151.00 per square foot) and the size will be 2000 square feet.
	Site Development - Construction of new general store	LS	\$302,000.00	1	\$302,000.00 Assume the size to be replaced is 0.5 acres.
	Site Development - Repave the fuel station area	LS	\$78,850.00	1	\$78,850.00 Assume the size to be replaced is 0.5 acres.
	Site Rehabilitation - Landscaping	LS	\$30,200.00	1	\$30,200.00 Landscaping costs are 10% of the building cost.
	Alternative C		Total	\$444,675.00	
	Site Demolition - Clearing and grubbing	LS	\$4,560.00	1	\$4,560.00 Assume that medium grubbing is required for site preparation.
	Site Demolition - Removal of existing Village Center store	LS	\$50,000.00	1	Assume that it will cost \$50,000 to remove the general store and prepare the ground for construction of the new store.
	Site Demolition - Minor regrading of the fuel station area	LS	\$13,068.00	1	\$13,068.00 Assume that 0.5 acres will need minor regrading (top 2-3 inches). Assume that the price will be equal to the price for the building of a new shower/laundry facility (\$151.00 per square foot) and the size will be 3000 square feet. The building will be larger than the one in Alternative B and includes room for a small snack bar.
	Site Development - Construction of new general store	LS	\$453,000.00	1	\$453,000.00 Assume the size to be replaced is 0.5 acres.
	Site Development - Repave the fuel station area	LS	\$78,850.00	1	\$78,850.00 Assume the size to be replaced is 0.5 acres.
	Site Rehabilitation - Landscaping	LS	\$45,300.00	1	\$45,300.00 Landscaping costs are 10% of the building cost.
Land-based Food Service					
	Alternative A		Total	\$0.00	
	No cost associated with Alternative A.				
	Alternative B		Total	\$0.00	
	Food service facilities are included in the Village Center Store.				
	Alternative C		Total	\$0.00	
	Same as Alternative B.				
Day-Use Facilities					
	Alternative A		Total	\$0.00	
	No cost associated with Alternative A.				
	Alternative B		Total	\$118,573.00	
	Site Demolition - Clearing and grubbing	LS	\$4,560.00	1	\$4,560.00 Assume that medium grubbing is required for site preparation.
	Site Development - Shade shelters	LS	\$36,760.00	1	\$36,760.00 Build four shade shelters at 100 square feet for each one.

#### Hill Crossing Cost estimates

Site Development - Picnic tables	LS	\$9,488.00	1	\$9,488.00	Install 8 picnic tables.
Site Development - Restroom facilities	LS	\$90,400.00	1	\$90,400.00	Install 4 regular vault toilets.
Site Rehabilitation - Landscaping	LS	\$10,364.80	1	\$10,364.80	Landscaping costs are 10% of the building cost.

<b>Alternative C</b>	<b>Total</b>	<b>\$110,253.00</b>
Same as Alternative B		

#### Ranger Station/Visitor Contact Station and Emergency Facilities

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A		

Alternative B	Total	\$431,133	Same as Alternative A
Site Development - Establishment of a permanent helipad	\$431,133	1	\$431,133 Assume the helipad is

Alternative C	Total		\$669,133
Site Development - Establishment of a permanent helipad	\$431,133	1	\$431,133

Site Development - Construction of a visitor services/ranger station building	LS	\$238,000.00	1	\$238,000.00	The building will serve as a visitor center, fire station, provide storage for emergency services and search and rescue equipment, and several ranger offices. Price is the same as a ranger station at \$119 per square foot and the building is 2000 square feet.
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#### Concessioner Boat Maintenance and Repair, and Property Maintenance Facilities

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A		

Alternative B	Total	\$100,000.00
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<b>Alternative C</b>	<b>Total</b>	<b>\$100,000.00</b>
Same as Alternative B		

#### National Park Service Maintenance Facilities

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A		

<b>Alternative B</b>	<b>Total</b>	<b>\$0.00</b>
Same as Alternative A		

<b>Alternative C</b>	<b>Total</b>	<b>\$0.00</b>
Same as Alternative A		

#### Secured Storage

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A		

<b>Alternative B</b>	<b>Total</b>	<b>\$1,564,583.00</b>			
Site Demolition - Clearing and grubbing	LS	\$285,000.00	1	\$285,000.00	Assume that medium grubbing is required for site preparation.

Site Development - Installation of additional secured storage sites	LS	\$135,000.00	1	\$135,000.00	Assume it costs \$1000 per space for 135 additional spaces. This includes paving, lighting, and other utilities that are required.
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Site Development - Installation of enclosed storage	LS	\$866,250.00	1	\$866,250.00	Assume 750 square feet per space for 35 spaces. Used vehicle storage building rate from estimating guide at \$33 per square foot.
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Site Development - Boros facilities from the public	LS	\$200,000.00	1	\$200,000.00	Includes costs for 8ft high screen wall around secured storage and concessioner maintenance facilities at \$100 per linear foot.
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Site reclamation - Reclaim land with native plants	LS	\$88,333.00	1	\$88,333.00	Reclaim the land using native plants.
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<b>Alternative C</b>	<b>Total</b>	<b>\$1,564,583.00</b>
Same as Alternative B		

# Hull Crossing Cost estimates

Utility Systems						
Alternative A		Total		\$0.00		
No cost associated with Alternative A						
Alternative B		Total		\$750,000.00		
Site Development - Expand energy system	LS	\$750,000.00	1	\$750,000.00	Assume it will cost \$750,000 to expand utility needs to the additional structures.	
Alternative C		Total		\$1,250,000.00		
Site Development - Expand energy system	LS	\$750,000.00	1	\$750,000.00	Assume it will cost \$750,000 to expand utility needs to the additional structures.	
Site Development - Utilize solar and fuel cell technology.	LS	\$500,000.00	1	\$500,000.00	Assume it will cost \$500,000 to include solar and fuel cell technology	
Roads and Parking						
Alternative A		Total		\$0.00		
No cost associated with Alternative A						
Alternative B		Total		\$243,500.00		
Site Development - Gravel access road	LS	\$243,500.00	1	\$243,500.00	Assume that the road is 0.5 miles long and will be gravel.	
Alternative C		Total		\$243,500.00		
Same as Alternative B						
Fee Collection						
Alternative A		Total		\$0.00		
No cost associated with Alternative A						
Alternative B		Total		\$0.00		
Same as Alternative A						
Alternative C		Total		\$0.00		
Same as Alternative A						
School						
Alternative A		Total		\$0.00		
No cost associated with Alternative A						
Alternative B		Total		\$0.00		
Same as Alternative A						
Alternative C		Total		\$0.00		
Same as Alternative A						
Airstrip						
Alternative A		Total		\$0.00		
No cost associated with Alternative A						
Alternative B		Total		\$0.00		
Same as Alternative A						
Alternative C		Total		\$0.00		
Same as Alternative A						
Boat Wash-Down Area						
Alternative A		Total		\$0.00		
No cost associated with Alternative A						
Alternative B		Total		\$80,000.00		
Site Development - Construct a boat wash-down facility	LS	\$80,000.00	1	\$80,000.00	Assume it costs \$80,000 to build a boat wash-down area with water hook-ups and other necessary utilities.	
Alternative C		Total		\$80,000.00		
Same as Alternative B						
Marina Facilities						

# Hull Crossing Cost estimates

<b>Alternative A</b>					<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A						
<b>Alternative B</b>					<b>Total</b>	<b>\$0.00</b>
The cost for the new marina buoy field spaces is included in the estimate for Bullfrog Marina						
<b>Alternative C</b>					<b>Total</b>	<b>\$0.00</b>
The cost of the new marina buoy field spaces and wet slips is included in the estimate for Bullfrog Marina						
Site Development - Chip sealed roads down to the marina facilities	LS	\$0.00	1		\$0.00	Assume that 0.5 miles will be chip sealed
<b>Water-Based Store</b>						
<b>Alternative A</b>					<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A						
<b>Alternative B</b>					<b>Total</b>	<b>\$0.00</b>
Same as Alternative A						
<b>Alternative C</b>					<b>Total</b>	<b>\$0.00</b>
Same as Alternative A						
<b>Water-Based Food Service</b>						
<b>Alternative A</b>					<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A						
<b>Alternative B</b>					<b>Total</b>	<b>\$300,000.00</b>
Site Development - Construct a water-based food service facility	LS	\$300,000.00	1		\$300,000.00	Assume the building is 2000 square feet and costs \$100 per square foot to build
<b>Alternative C</b>					<b>Total</b>	<b>\$300,000.00</b>
Same as Alternative B						
<b>Launch Ramps</b>						
<b>Alternative A</b>					<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A						
<b>Alternative B</b>					<b>Total</b>	<b>\$86,136.00</b>
Site Development - Extend the boat launch ramp to the water level	LS	\$86,136.00	1		\$86,136.00	Assume that the ramp will need to be extended 100 feet over the next ten years at a minimum width of 80 feet
<b>Alternative C</b>					<b>Total</b>	<b>\$118,437.00</b>
Site Development - Extension of boat launch ramp to the water level at maximum width of 110 ft	LS	\$118,437.00	1		\$118,437.00	Assume that the ramp will need to be extended 100 feet over the next ten years at the maximum width of 110 feet
<b>Launch Ramp Support</b>						
<b>Alternative A</b>					<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A						
<b>Alternative B</b>					<b>Total</b>	<b>\$0.00</b>
Same as Alternative A						
<b>Alternative C</b>					<b>Total</b>	<b>\$0.00</b>
Same as Alternative A						
<b>Ferry Service</b>						
<b>Alternative A</b>					<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A						
<b>Alternative B</b>					<b>Total</b>	<b>\$50,000.00</b>
Site Development - Locate new ferry launch locations	LS	\$50,000.00	1		\$50,000.00	Assume it will cost \$50,000 to locate and establish new ferry launch locations as the lake levels drop
<b>Alternative C</b>					<b>Total</b>	<b>\$50,000.00</b>
Same as Alternative B						



Hill Crossing Cost estimates

<b>River Runner Takeout</b>			
<b>Alternative A</b>	<b>Total</b>		<b>\$0.00</b>
No cost associated with Alternative A			
<b>Alternative B</b>	<b>Total</b>		<b>\$0.00</b>
Same as Alternative A			
<b>Alternative C</b>	<b>Total</b>		<b>\$0.00</b>
Same as Alternative A			
<b>Grand Total</b>			
<b>Alternative A</b>	<b>Total</b>		<b>\$0.00</b>
<b>Alternative B</b>	<b>Total</b>		<b>\$13,884,816.99</b>
Concept Plan Contingency	25%	\$3,413,729.00	
Contractors, General Conditions, Profit, Bonds, and Overhead	12%	\$1,638,569.92	Allowance for Planning and Design Fees
<b>Subtotal</b>		<b>\$16,707,234.91</b>	
Architecture and Engineering Fees Allowance	20%	\$3,741,446.96	
Owners Construction Contingency	5%	\$835,361.75	
<b>Total</b>		<b>\$23,284,043.63</b>	
<b>Alternative C</b>	<b>Total</b>		<b>\$14,899,386.99</b>
Concept Plan Contingency	25%	\$3,724,639.00	
Contractors, General Conditions, Profit, Bonds, and Overhead	12%	\$1,787,922.72	Allowance for Planning and Design Fees
<b>Subtotal</b>		<b>\$20,412,117.71</b>	
Architecture and Engineering Fees Allowance	20%	\$4,082,423.54	
Owners Construction Contingency	5%	\$1,020,606.89	
<b>Total</b>		<b>\$25,515,147.13</b>	

Hile cost estimates

Number	Item	Unit	Unit Cost	Quantity	Extended cost	Notes and/or assumptions
Employee Housing						
Alternative A		Total		\$0.00		
No cost associated with Alternative A						
Alternative B		Total		\$1,244,688.00		
Site Demolition - Clearing and grubbing	LS	\$22,800.00	1	\$22,800.00	Assume that medium grubbing is required for site preparation.	
Site Removal - Removal of existing NPS and concessioner housing units	LS	\$80,000.00	1	\$80,000.00	Assume that it costs \$5,000 to remove each of the 16 modular homes.	
Site Development - Housing	LS	\$1,038,080.00	1	\$1,038,080.00	Housing includes the replacement of 6 NPS modular NPS homes and 10 modular concessioner homes. Each modular house is 800 square feet at a price of \$81.10 per square foot.	
Site Rehabilitation - Landscaping	LS	\$103,808.00	1	\$103,808.00	Landscaping is 10% the cost of each housing unit. Includes earthwork seeding, and planting shrubs and small trees.	
Alternative C		Total		\$1,244,688.00		
Same as Alternative B						
Visitor Overnight Accomodations						
Alternative A		Total		\$0.00		
No cost associated with Alternative A						
Alternative B		Total		\$1,472,880.00		
Site Demolition - Clearing and grubbing	LS	\$20,520.00	1	\$20,520.00	Assume that medium grubbing is required for site preparation.	
Site Removal - Removal of existing family rental units	LS	\$25,000.00	1	\$25,000.00	Assume that it costs \$5,000 to remove each of the 5 modular homes.	
Site Development - Add family rental units	LS	\$1,297,600.00	1	\$1,297,600.00	Each modular house is 800 square feet at a price of \$81.10 per square foot. Includes the replacement of the existing 5 family rental units and 15 additional family rental units.	
Site Rehabilitation - Landscaping	LS	\$129,760.00	1	\$129,760.00	Landscaping costs are 10% of the building cost.	
Alternative C		Total		\$1,472,880.00		
Same as Alternative B						
Visitor Camping						
Alternative A		Total		\$0.00		
No cost associated with Alternative A						
Alternative B		Total		\$74,750.00		
Site Development - Develop 25 Sites	LS	\$39,250.00	1	\$39,250.00		
Site Development - Install restrooms	LS	\$30,200.00	1	\$30,200.00	Assume that four standard vault toilets would be installed.	
Site Development - Landscaping	LS	\$5,300.00	1	\$5,300.00	Landscaping costs are 10% of the building cost.	
Alternative C		Total		\$74,750.00		
Same as Alternative B						
Shower and Laundry Facilities						
Alternative A		Total		\$0.00		
No cost associated with Alternative A						
Alternative B		Total		\$0.00		

File cost estimates

General store will include laundry and shower facilities.

<b>Alternative C</b>	<b>Total</b>	<b>\$0.00</b>
Same as Alternative B		

**Land-based Stores**

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A		

<b>Alternative B</b>	<b>Total</b>	<b>\$435,654.00</b>
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Site Development - Expand Village Center store	LS	\$150,000.00	1	\$150,000.00	Expansion will include a seasonal snack bar, laundry/shower facilities, and other family entertainment. Price is based upon an expansion of 1000 square feet with a price of \$150.00 per square foot.
Site Development - Install shade shelter	LS	\$55,140.00	1	\$55,140.00	Assume the shade shelter is 800 square feet and costs \$91.90 per square foot.
Site Development - Repave the fuel station area	LS	\$78,650.00	1	\$78,650.00	Assume the area to be repaved is 0.5 acres.
Site Development - Screen general store from fuel station	LS	\$100,000.00	1	\$100,000.00	Includes a 8ft high screen wall screening the general store from the fuel area that costs \$100.00 per linear foot.
Site Development - Upgrade RV waste disposal station	LS	\$31,350.00	1	\$31,350.00	Assume that an upgrade costs 50% of the cost of a new waste station.
Site Rehabilitation - Landscaping	LS	\$20,514.00	1	\$20,514.00	Landscaping costs are 10% of the building cost.

<b>Alternative C</b>	<b>Total</b>	<b>\$435,654.00</b>
Same as Alternative B		

**Land-Based Food Service**

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A		

<b>Alternative B</b>	<b>Total</b>	<b>\$0.00</b>
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General store will include a seasonal snack bar

<b>Alternative C</b>	<b>Total</b>	<b>\$0.00</b>
Same as Alternative B		

**Day-Use Facilities**

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
No cost associated with Alternative A		

Alternative B	Total			\$118,573.00
Site Demolition - Clearing and grubbing	LS	\$4,560.00	1	\$4,560.00 Assume that medium grubbing is required for site preparation.
Site Development - Shade shelters	LS	\$36,760.00	1	\$36,760.00 Build four shade shelters at 100 square feet for each one.
Site Development - Picnic tables	LS	\$8,488.00	1	\$8,488.00 Install 8 picnic tables
Site Development - Restroom facilities	LS	\$60,400.00	1	\$60,400.00 Install 4 regular vault toilets
Site Rehabilitation - Landscaping	LS	\$10,365.00	1	\$10,365.00 Landscaping costs are 10% of the building cost.

<b>Alternative C</b>	<b>Total</b>	<b>\$118,573.00</b>
Same as Alternative B		

**Ranger Station/Visitor Contact Station and Emergency Facilities**

<b>Alternative A</b>	<b>Total</b>	<b>\$0.00</b>
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Hile cost estimates

No cost associated with Alternative A

Alternative B	Total	\$0.00
Same as Alternative A		

Alternative C	Total	\$0.00
Same as Alternative A		

Concessioner Boat Maintenance and Repair, and Property Maintenance Facilities

Alternative A	Total	\$0.00
No cost associated with Alternative A		

Alternative B	Total	\$0.00
Same as Alternative A		

Alternative C	Total	\$0.00
Same as Alternative A		

National Park Service Maintenance Facilities

Alternative A	Total	\$0.00
No cost associated with Alternative A		

Alternative B	Total	\$0.00
Same as Alternative A		

Alternative C	Total	\$0.00
Same as Alternative A		

Secured Storage

Alternative A	Total	\$0.00
No cost associated with Alternative A		

Alternative B	Total	\$72,380.00			
Site Demolition - Clearing and grubbing	LS	\$19,380.00	1	\$19,380.00	Assume that medium grubbing is required for site preparation. Assume it costs \$1000 per space for 53 additional spaces. This includes paving, lighting, and other utilities that are required.
Site Development - Add secured storage sites	LS	\$53,000.00	1	\$53,000.00	

Alternative C	Total	\$72,380.00
Same as Alternative B		

Utility Systems

Alternative A	Total	\$0.00
No cost associated with Alternative A		

Alternative B	Total	\$1,108,188.00			
Site Development - Expand energy system	LS	\$250,000.00	1	\$250,000.00	Assume it will cost \$250,000 to expand utility needs to the additional structures.
Site Development - Drill and Blast	LS	\$134,568.00	1	\$134,568.00	Assume an area 2,242 square feet by 15 feet deep required for 100,000-gallon underground potable water storage tank.
Site Development - Rubble Removal	LS	\$17,568.60	1	\$17,568.60	Assume 1 CY per ton
Site Development - Expand water storage capacity	LS	\$206,500.00	1	\$206,500.00	Assume a 100,000-gallon underground tank will be installed.

Site cost estimates

Site Development - Utilize solar and fuel cell technology	LS	\$500,000.00	1	\$500,000.00	Assume it will cost \$500,000 to include solar and fuel cell technology
<b>Alternative C</b>	<b>Total</b>			<b>\$1,108,188.00</b>	
Site Development - Expand energy system	LS	\$250,000.00	1	\$250,000.00	Assume it will cost \$250,000 to expand utility needs to the additional structures.
Site Development - Drill and Blast	LS	\$134,568.00	1	\$134,568.00	Assume an area 2,242 square feet by 15 feet deep required for 100,000-gallon underground potable water storage tank.
Site Development - Rubble Removal	LS	\$17,568.60	1	\$17,568.60	Assume 1 CY per ton
Site Development - Expand water storage capacity	LS	\$205,500.00	1	\$205,500.00	Assume a 100,000-gallon underground tank will be installed.
Site Development - Utilize solar and fuel cell technology	LS	\$500,000.00	1	\$500,000.00	Assume it will cost \$500,000 to include solar and fuel cell technology

Roads and Parking

<b>Alternative A</b>	<b>Total</b>			<b>\$0.00</b>	
No cost associated with Alternative A					
<b>Alternative B</b>	<b>Total</b>			<b>\$266,300.00</b>	
Site Demolition - Clearing and grubbing	LS	\$22,800.00	1	\$22,800.00	Assume that medium grubbing is required for site preparation.
Site Development - Gravel road to primitive campsites	LS	\$243,500.00	1	\$243,500.00	Assume that it will require 0.5 miles of new road to access the primitive campsites along the shoreline.
<b>Alternative C</b>	<b>Total</b>			<b>\$266,300.00</b>	
Same as Alternative B					

Fee Collection

<b>Alternative A</b>	<b>Total</b>			<b>\$0.00</b>	
No cost associated with Alternative A					
<b>Alternative B</b>	<b>Total</b>			<b>\$0.00</b>	
Same as Alternative A					
<b>Alternative C</b>	<b>Total</b>			<b>\$0.00</b>	
Same as Alternative A					

School

<b>Alternative A</b>	<b>Total</b>			<b>\$0.00</b>	
No cost associated with Alternative A					
<b>Alternative B</b>	<b>Total</b>			<b>\$0.00</b>	
Same as Alternative A					
<b>Alternative C</b>	<b>Total</b>			<b>\$0.00</b>	
Same as Alternative A					

Airstrip

<b>Alternative A</b>	<b>Total</b>			<b>\$0.00</b>	
No cost associated with Alternative A					
<b>Alternative B</b>	<b>Total</b>			<b>\$0.00</b>	
Same as Alternative A					
<b>Alternative C</b>	<b>Total</b>			<b>\$0.00</b>	

File cost estimates

Same as Alternative A

#### Boat Wash-Down Area

Alternative A	Total	\$0.00
No cost associated with Alternative A		
Alternative B	Total	\$90,000.00
Site Development - Construction of a boat wash-down area	LS	\$90,000.00
	1	\$90,000.00
Assume it costs \$90,000 to build a boat wash-down area with water hook-ups and other necessary utilities.		
Alternative C	Total	\$90,000.00
Same as Alternative B		

#### Marina Facilities

Alternative A	Total	\$0.00
No cost associated with Alternative A		
Alternative B	Total	\$0.00
Same as Alternative A		
Alternative C	Total	\$0.00
Same as Alternative A		

#### Water-Based Store

Alternative A	Total	\$0.00
No cost associated with Alternative A		
Alternative B	Total	\$0.00
Same as Alternative A		
Alternative C	Total	\$0.00
Same as Alternative A		

#### Water-Based Food Service

Alternative A	Total	\$0.00
No cost associated with Alternative A		
Alternative B	Total	\$0.00
Same as Alternative A		
Alternative C	Total	\$0.00
Same as Alternative A		

#### Launch Ramps

Alternative A	Total	\$0.00
No cost associated with Alternative A		
Alternative B	Total	\$0.00
Same as Alternative A		
Alternative C	Total	\$0.00
Same as Alternative A		

Hile cost estimates

Launch Ramp Support				
Alternative A	Total			\$0.00
No cost associated with Alternative A				
Alternative B	Total			\$0.00
Same as Alternative A				
Alternative C	Total			\$62,700.00
Site Development - Land-based boat pump-out facility	1.5	\$62,700.00	1	\$62,700.00
				Assume cost of land-based boat pump-out similar to a sanitary dump station.
Ferry Service				
Alternative A	Total			\$0.00
No cost associated with Alternative A				
Alternative B	Total			\$0.00
Same as Alternative A				
Alternative C	Total			\$0.00
Same as Alternative A				
River Runner Takeout				
Alternative A	Total			\$0.00
No cost associated with Alternative A				
Alternative B	Total			\$0.00
Same as Alternative A				
Alternative C	Total			\$0.00
Same as Alternative A				
Grand Total				
Alternative A	Total			\$0.00
Alternative B	Total			\$4,883,413.00
Concept Plan Contingency	25%			\$1,220,853.25
Contractors, General Conditions, Profit, Bonds, and Overhead	12%			\$586,009.56
Subtotal				\$6,690,275.81
Architecture and Engineering Fees Allowance	20%			\$1,338,055.16
Owners Construction Contingency	5%			\$334,513.79
Total				\$8,362,844.76
Alternative C	Total			\$4,946,113.00
Concept Plan Contingency	25%			\$1,236,528.25
Contractors, General Conditions, Profit, Bonds, and Overhead	12%			\$593,533.56
Subtotal				\$6,776,174.81
Architecture and Engineering Fees Allowance	20%			\$1,355,234.96
Owners Construction Contingency	5%			\$338,808.74
Total				\$8,470,218.51

## Appendix B – Bald Eagle Sightings

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## Appendix B

### Summary of Bald Eagle Winter Observations at Lake Powell for Indicated Time Spans of Recent Years (1991–2002)

Location of Bald Eagle Sightings – (Area No.)	11–91 03–92	12–92 02–93	11–93 03–94	11–94 02–95	11–95 02–96	01–97 02–97	12–97 02–98	12–98 02–99	12–99 01–00	12–01 02–02
Alcove Canyon – 5	1	1	—	—	—	—	—	—	—	—
Annies Canyon – 4	—	—	—	—	—	1	—	—	—	—
Antelope – 2	—	—	—	—	—	—	2	4	1	1
Antelope Island – 2	—	—	1	1	—	2	6	2	4	3
Antelope Point – 2	—	—	—	—	2	—	—	—	—	—
Blue Notch – 9	—	—	—	—	—	—	—	—	—	1
Bullfrog – 8	1	—	2	1	—	1	—	—	—	—
Bullfrog Airport – 8	—	—	1	—	—	—	—	—	—	—
Bullfrog Bay – 8	5	3	—	10	1	2	2	5	3	4
Bullfrog Creek – 8	—	—	—	—	—	—	—	—	—	2
Bullfrog (East) – 8	1	—	—	—	—	—	—	—	—	—
Bullfrog (South) – 8	—	—	—	—	—	—	4	—	—	—
Castle Butte – 9	—	—	—	—	1	—	—	—	—	—
Castle Rock – 2	—	—	2	—	1	1	1	1	—	1
Castle Rock (West of) – 2	—	—	—	—	1	—	—	—	—	—
Cataract Canyon – 10	1	1	1	4	1	1	—	4	1	4
Cataract Canyon (Below) – 10	—	—	—	—	—	—	—	1	—	—
Cedar Canyon – 9	1	—	—	—	—	—	—	—	—	—
CHA Canyon – 5	—	1	1	—	—	—	—	—	—	—
Clay Hills – 6	1	2	—	—	1	—	2	—	—	1
Clearwater Canyon – 10	1	—	—	—	—	—	—	—	—	—
Colorado River – 1	—	—	—	—	—	1	—	—	—	—
Cookie Jar – 3	—	1	—	1	—	—	2	—	—	—
Copper Canyon – 5	—	—	—	2	1	—	—	—	1	1
Cottonwood Bay – 4	—	1	—	—	—	—	—	—	—	—
Cow Canyon – 7	—	—	—	—	—	1	—	—	—	—
Crosby Canyon – 2	—	—	—	—	—	—	—	2	—	—
Dangling Rope – 3	1	—	—	—	—	—	1	—	—	1
Dirty Devil – 9	—	—	—	—	—	—	—	1	2	—
Dirty Devil (Mouth) – 9	—	—	—	—	—	—	—	—	1	—
Dominiques Butte – 3	4	—	—	—	—	—	—	—	—	—
Face Canyon – 3	—	—	—	—	—	—	2	4	2	—
Farley Canyon – 9	—	—	—	—	—	—	—	—	—	1
Finger Rock Canyon – 3	—	—	—	—	—	—	—	1	—	—
Forgotten Canyon – 9	—	—	—	—	—	—	—	—	1	—
Fourmile Canyon – 9	—	—	1	—	—	—	—	—	—	—
Good Hope Bay – 9	6	—	2	2	—	—	1	1	—	1

Appendix B: Bald Eagle Sightings

Location of Bald Eagle Sightings – (Area No.)	11-91 03-92	12-92 02-93	11-93 03-94	11-94 02-95	11-95 02-96	01-97 02-97	12-97 02-98	12-98 02-99	12-99 01-00	12-01 02-02
Good Hope Bay (South) – 9	1	1	—	—	1	3	—	—	—	—
Great Bend – 6	—	—	—	—	—	—	1	—	—	—
Gregory Butte – 3	1	—	—	—	—	—	—	—	—	3
Gregory Point – 3	—	—	1	—	—	—	—	—	—	—
Gunsight – 3	—	1	—	—	—	1	1	3	1	2
Gunsight Butte – 3	—	3	—	1	—	—	—	—	—	—
Gypsum Canyon – 10	2	—	—	—	—	—	—	—	—	—
Halls Bay – 8	—	—	1	—	—	—	—	—	—	—
Halls Creek – 8	—	7	2	3	2	—	3	—	2	4
Halls Creek Bay – 8	—	—	1	—	—	1	2	5	3	9
Halls Crossing – 8	2	—	—	2	3	2	3	2	—	4
Halls Crossing Bay – 8	—	—	—	—	—	—	—	1	—	—
Halls Crossing (West Side) – 8	—	—	—	—	—	1	—	—	—	—
Hite – 9	2	—	—	—	—	2	5	1	1	2
Hite Bay – 9	1	—	1	3	1	—	—	—	—	—
Iceberg Canyon – 4	—	1	—	—	—	—	—	—	—	—
Jakes Arch – 7	—	—	—	—	1	—	—	—	—	—
Kane Point – 8	—	—	—	—	—	—	—	—	—	—
Lone Rock – 2	—	—	1	—	1	1	1	—	—	—
Long Canyon (Entrance) – 4	—	1	—	—	—	—	—	—	—	—
Marina (South of) – 9	—	—	—	—	—	1	—	—	—	—
Mikes Canyon – 5	—	—	—	—	—	—	—	1	—	—
Mile 7 Below Dam – 1	—	—	1	—	—	—	—	—	—	—
Mille Grag Bend – 10	1	—	—	—	—	—	—	—	—	—
Monitor Butte – 6	2	—	1	—	—	—	—	—	—	—
Narrows Canyon – 10	—	—	—	—	2	1	—	2	3	—
Navajo Canyon – 2	—	—	—	—	1	—	—	1	—	2
Neskahi Wash – 5	—	—	1	—	—	—	—	—	—	—
Nokai Canyon – 5	1	—	—	—	—	—	—	—	—	—
Nokai Canyon (Across from) – 5	—	—	1	—	—	—	—	—	—	—
No Man's Mesa – 5	—	1	—	—	—	—	—	—	—	—
North Warm Creek – 2	—	—	—	—	1	—	—	—	—	—
Oak Canyon – 3	—	—	—	—	—	—	—	1	—	—
Padre Bay – 3	—	1	3	4	1	—	—	—	—	2
Page Airport – 2	—	—	—	—	—	—	—	—	1	—
Piute Farms – 5	1	1	2	—	—	1	—	—	—	—
Piute Wash – 5	—	—	—	—	—	—	—	1	—	—
Red Canyon – 9	—	—	—	—	—	—	1	3	1	—
Rincon – 4	1	—	—	—	—	—	—	—	—	—
Rock Creek – 3	—	3	—	1	—	—	—	—	—	—
Romana Mesa – 3	—	—	—	2	—	—	—	—	—	1
San Juan – 5	—	—	1	—	—	1	5	3	2	3
San Juan Arm – 5	—	—	—	1	—	—	—	—	—	—

Location of Bald Eagle Sightings – (Area No.)	11-91 03-92	12-92 02-93	11-93 03-94	11-94 02-95	11-95 02-96	01-97 02-97	12-97 02-98	12-98 02-99	12-99 01-00	12-01 02-02
San Juan Canyon – 5	—	1	—	—	—	—	—	—	—	—
San Juan (Great Bend) – 5	—	—	—	—	—	—	—	—	—	1
San Juan (Mouth) – 5	—	1	1	—	—	—	—	—	—	—
San Juan River – 6	—	—	1	—	—	—	1	—	2	—
Seven Mile Creek – 9	—	—	—	—	—	—	1	—	—	—
Sheep Canyon – 10	—	—	1	—	—	—	—	—	—	—
Slick Rock (Slickrock) Canyon – 4	—	—	1	1	—	—	—	—	—	—
Stanton Creek – 8	—	1	—	5	—	—	1	—	—	—
Stevens Arch – 7	—	—	1	—	—	—	—	—	—	—
Tapestry (South) – 9	1	—	—	—	—	—	—	—	—	—
Tapestry Wall – 9	—	1	1	—	—	—	—	1	—	—
Tapestry (West) – 9	—	1	—	—	—	—	—	—	—	—
The Chains – 2	—	—	—	—	1	—	—	—	—	—
The Horn – 9	1	—	—	—	—	1	—	—	2	2
The Narrows – 10	1	—	—	—	—	—	—	—	—	—
Ticaboo Canyon – 9	—	—	—	—	—	—	—	1	—	—
Ticaboo (South of) – 8	—	—	—	1	—	—	—	—	—	—
Trachyte Creek – 9	—	—	—	—	—	—	1	—	—	—
Two Mile Canyon – 9	—	2	—	—	—	—	—	—	—	—
Wahweap Bay – 2	—	1	1	—	—	1	1	5	2	6
Wahweap Creek – 2	—	—	—	—	—	—	—	—	—	2
Warm Creek – 2	1	—	4	4	—	3	—	1	3	5
Warm Creek Bay – 2	—	—	—	—	—	1	—	—	—	—
Waterhole Canyon – 1	—	—	—	—	—	1	—	—	—	—
Waterhole Flats – 10	1	—	1	—	—	—	—	—	—	—
West Canyon – 3	—	—	—	—	—	1	—	1	—	1
West Canyon (East) – 3	—	—	1	—	—	—	—	—	—	—
West Canyon (Mouth) – 3	—	—	—	—	1	—	—	—	—	—
White Canyon – 9	—	—	—	—	—	—	—	2	—	—
Zahn Bay – 5	—	—	1	4	—	—	1	—	—	—
<b>Total Observations</b>	<b>43</b>	<b>39</b>	<b>42</b>	<b>53</b>	<b>25</b>	<b>33</b>	<b>51</b>	<b>61</b>	<b>39</b>	<b>70</b>

Note: Only 1 month of data (23 bald eagle observations) were recorded during December 2000 (Spence 2002), so that winter season was not included in the table.

Source: Spence 2002

## Appendix C – Consultation

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## United States Department of the Interior

## FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE  
2369 WEST ORTON CIRCLE, SUITE 50  
WEST VALLEY CITY, UTAH 84119

In Reply Refer To:

FWS/R6  
ES/UT  
04-0813

June 14, 2004

Kitty L. Roberts  
National Park Service  
Glen Canyon National Recreation Area  
P.O. Box 1507  
Page, Arizona 86040

GLEN CANYON NATIONAL RECREATION AREA		
RECEIVED: JUN 22 2004		
RTS	OFFICE	INT. DIV.
1	SUPERINTENDENT	
	ASST. SUPERINTENDENT	
	MANAGEMENT ASST.	
	SAFETY OFFICER	
	CH. FACILITY MGMT.	
	EN. ADMINISTRATION	
	BOUNCE	
	PERSONNEL	
	EN. MAINT.	
	TEE MANAGER	
	CH. INTERPRETATION	
CO	EN. CREATIONS MGMT.	
	CH. RECREATION MGMT.	
	LIBRARY	

200 Liza Ermeling

RE: Request for Threatened and Endangered Species list for Bullfrog, Halls Crossing, and Hite Marina Areas Within Glen Canyon NRA

Dear Ms. Roberts:

Thank you for informing us that the information we provided in response to your April 12, 2004 request for a species list, was for an inaccurate location. Included is a species list for Garfield, Kane and San Juan Counties. We apologise for the inconvenience.

Based on information provided in your letter of April 12, below is a list of endangered (E), threatened (T), and candidate (C) species that may occur in the area of influence of your proposed action.

Common Name	Scientific Name	Status
GARFIELD		
Aquarius Paintbrush	<i>Castilleja aquariensis</i>	C
Autumn Buttercup	<i>Ranunculus aestivalis</i>	E
Jones Cycladenia	<i>Cycladenia humilis</i> var. <i>jonesii</i>	T
Maguire Daisy	<i>Erigeron maguirei</i>	T
Ute Ladies'-tresses	<i>Spiranthes diluvialis</i>	T
Bonytail <sup>4,10</sup>	<i>Gila elegans</i>	E
Colorado Pikeminnow <sup>4,10</sup>	<i>Ptychocheilus lucius</i>	E
Humpback Chub <sup>4,10</sup>	<i>Gila cypha</i>	E
Razorback Sucker <sup>4,10</sup>	<i>Xyrauchen texanus</i>	E
Bald Eagle <sup>1</sup>	<i>Haliaeetus leucocephalus</i>	T
California Condor <sup>2</sup>	<i>Gymnogyps californianus</i>	E
Mexican Spotted Owl <sup>1,4</sup>	<i>Strix occidentalis lucida</i>	T
Southwestern Willow Flycatcher	<i>Empidonax traillii eximius</i>	E

	Western Yellow-billed Cuckoo	<i>Coccyzus americanus occidentalis</i>	C
	Utah Prairie Dog	<i>Cynomys parvidens</i>	T
KANE			
	Jones Cycladenia	<i>Cycladenia humilis</i> var. <i>jonesii</i>	T
	Kodachrome Bladderpod	<i>Lesquerella tumulosa</i>	E
	Navajo Sedge	<i>Carex specuicola</i>	T
	Siler Pincushion Cactus	<i>Pediocactus sileri</i>	T
	Welsh's Milkweed <sup>4</sup>	<i>Asclepias welshii</i>	T
	Kanab Ambersnail <sup>5</sup>	<i>Oxyloma haydeni kanabensis</i>	E
	Coral Pink Sand Dunes Tiger Beetle	<i>Cincindela limbata albissima</i>	C
	Colorado Pikeminnow <sup>4,10</sup>	<i>Ptychocheilus lutes</i>	E
	Razorback Sucker <sup>4,10</sup>	<i>Xyrauchen texanus</i>	E
	Bald Eagle <sup>3</sup>	<i>Haliaeetus leucocephalus</i>	T
	California Condor <sup>7</sup>	<i>Gymnogyps californianus</i>	E
	Mexican Spotted Owl <sup>1,4</sup>	<i>Strix occidentalis lucida</i>	T
	Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	E
	Western Yellow-billed Cuckoo	<i>Coccyzus americanus occidentalis</i>	C
	Utah Prairie Dog	<i>Cynomys parvidens</i>	T
SAN JUAN			
	Navajo Sedge	<i>Carex specuicola</i>	T
	Bonytail <sup>4,10</sup>	<i>Gila elegans</i>	E
	Colorado Pikeminnow <sup>4,10</sup>	<i>Ptychocheilus lutes</i>	E
	Humpback Chub <sup>4,10</sup>	<i>Gila cypha</i>	E
	Razorback Sucker <sup>4,10</sup>	<i>Xyrauchen texanus</i>	E
	Bald Eagle <sup>3</sup>	<i>Haliaeetus leucocephalus</i>	T
	California Condor <sup>7</sup>	<i>Gymnogyps californianus</i>	E
	Gunnison Sage Grouse	<i>Centrocercus minimus</i>	C
	Mexican Spotted Owl <sup>1,4</sup>	<i>Strix occidentalis lucida</i>	T
	Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	E
	Western Yellow-billed Cuckoo	<i>Coccyzus americanus occidentalis</i>	C
	Black-footed Ferret <sup>9</sup>	<i>Mustela nigripes</i>	E

Nests in this county of Utah.

<sup>2</sup> Migrates through Utah, no resident populations.

<sup>3</sup> Wintering populations (only five known nesting pairs in Utah).

<sup>4</sup> Critical habitat designated in this county.

<sup>5</sup> Critical habitat proposed in this county.

<sup>6</sup> Historical range.

<sup>7</sup> Experimental nonessential population.

<sup>8</sup> Introduced, refugia population.

<sup>9</sup> Candidate species have no legal protection under the Endangered Species Act. However, these species are under active consideration by the Service for addition to the Federal List of Endangered and Threatened Species and may be proposed or listed during the development of the proposed project.

<sup>10</sup> Water depletions from any portion of the occupied drainage basin are considered to adversely affect or adversely modify the critical habitat of the endangered fish species, and must be evaluated with regard to the criteria described in the pertinent fish recovery programs.



United States Department of the Interior

NATIONAL PARK SERVICE  
Glen Canyon National Recreation Area  
P.O. Box 1507  
Page, Arizona 86040  
MAR 24 2004



IN REPLY REFER TO:  
H4217 GLCA-1445-C

Wilson Martin, Director  
Utah State Historical Society  
300 Rio Grande  
Salt Lake City, Utah 84101-1182

Reference: Glen Canyon National Recreation Area (NRA), Environmental Assessment (EA) to  
Evaluate Potential Impacts of Uplake Development Concept Plan (DCP)

Subject: Section 106 Compliance

Dear Mr. Martin:

Glen Canyon NRA has initiated planning on the draft Uplake DCP to study the facilities and visitor services provided at Hite, Bullfrog, and Halls Crossing marina areas. Draft alternatives for future development will be identified and an EA will be prepared to evaluate potential impacts to the natural and human environment. Existing DCPs for these areas were approved almost 20 years ago and an update is needed to address changing lake levels and the age of various lake facilities. When completed, the final DCP will guide development in the uplake areas for the next 10+ years.

This letter is to inform your office that we will be developing a combined environmental impact document that addresses both compliance with Section 106 of the National Historic Preservation Act, as amended, and the National Environmental Policy (as described in 36 CFR 800.8[a-c]). Upon its completion, the draft EA will be distributed to your office for review, comment, and concurrence with the National Park Service's determination of effects on cultural resources. Additional supporting information resulting from the analysis process will be included with the draft EA as appropriate.

We look forward to receiving your input on the planning process. We believe that it will ensure that cultural resources are adequately considered while meeting our planning objectives. As required by 36 CFR 800, the Advisory Council on Historic Preservation has also been notified as to our intent to include Section 106 compliance within the environmental assessment document.

If you have any questions or need additional information, please contact Archeologist Chris Kincaid of my staff at 928-608-6277.

Sincerely,

KITTY L. ROBERTS

Kitty L. Roberts  
Superintendent

bee:  
Chief, Resource Mgmt, GLCA  
Archeologist, GLCA  
Project Mgr, GLCA

C.Kincaid:jmh:3/22/04:p:Kincaid/Uplake DCP UT SHPO EA 106 Notification ltr.doc



## United States Department of the Interior

NATIONAL PARK SERVICE  
Glen Canyon National Recreation Area  
P.O. Box 1507  
Page, Arizona 86040



IN REPLY REFER TO:

D18 GLCA-1448  
UL DCP

JUN 23 2006



Mr. Henry Maddox, Field Supervisor  
US Fish and Wildlife Service  
Utah Field Office  
2369 West Orton Circle, Suite 50  
West Valley City, Utah 84119

Dear Mr. Maddox:

The National Park Service, Glen Canyon National Recreation Area (NRA) is in the process of completing an Environmental Assessment for the future development of the existing developed marina areas located in Garfield, Kane, and San Juan Counties in Southern Utah. This document is titled "Draft Uplake Development Concept Plan (DCP)/Environmental Assessment (EA)." The marina areas included in this DCP, highlighted on a location map (enclosure 1), include Hite, Bullfrog, and Halls Crossing. An initial scoping letter and request for a species list for this project was sent to your office on April 24, 2004.

This letter is being forwarded to you in order to fulfill our obligation as required by Section 7 of the Endangered Species Act.

The Environmental Assessment for the DCP includes Alternative A (No Action Alternative), Alternative B – Moderate Build out (preferred Alternative) and Alternative C – Extreme Build out. A list of proposed projects for each location is included as enclosure 2. A map showing the No Action Alternative for each development area is included as enclosures 3, 4, and 5. A map showing Alternative B for each developed area is included as enclosures 6, 7, and 8. A map showing Alternative C for each developed area is included on enclosures 9 and 10. The majority of the proposed project for Alternatives B and C will expand existing facilities within the disturbed footprint of each developed area. Projects that will disturb new areas include the placement of new visitor use boat ramps and State of Utah Ferry ramps at Bullfrog and Halls Crossing (see enclosure 11) should the water level of Lake Powell recede below 3550 feet in elevation. Additionally, a new shoreline camping area is proposed for the Hite developed area.

As shown in the enclosed species status table (enclosure 12), NPS biologists have determined that the range of proposed projects will have no affect on the following listed species: Bonytail, California Condor, Colorado Pikeminnow, Humpback Chub, Jones Cycladenia, Mexican Spotted Owl, Razorback Sucker, and Yellow-billed Cuckoo. The species status table also provides



explanation of why the majority of species listed in Garfield, Kane, and San Juan Counties including those that occur or have habitat within the boundary of Glen Canyon NRA will not be affected.

We have also determined that our proposed range of projects could create a "may affect, not likely to adversely affect" situation for the Southwestern Willow Flycatcher and the Bald Eagle.

In the paragraphs below we provide information used as the basis for determining the DCP related impacts to the Southwestern Willow Flycatcher and Bald Eagle.

**Southwestern Willow Flycatcher (*Empidonax traillii extimus*)**

Potentially suitable habitat for the Southwestern Willow Flycatcher occurs along the eastern side of the boat ramp at the Hite Marina Area as seen in the enclosed photo log (enclosure 13). This area may be described as a large, gently sloping plane that extends approximately 2000 feet to the waters edge. A large area of tamarisk/willow habitat is growing on this plane, with the largest trees being found along the upland transition zone. This habitat proceeds unbroken from 3670 feet in elevation to the shoreline of the Colorado River at 3550 feet in elevation. The habitat can be characterized as dense with a small number of fragmented openings. These openings generally contain a thick cover of herbaceous vegetation. While composition information has not been collected for the project area, anecdotally, the site appears to be predominately tamarisk/willow, with the numbers of tamarisk far exceeding the number of willows.

This area has been proposed as the site of low water shoreline camping. The proposed project would include installation of a graded, gravel surfaced road and portable restrooms. Camping sites would be by individual visitor choice and the camping area would be closed during the breeding season of the Southwestern Willow Flycatcher.

Both the habitat area and the camping area are subject to periodic inundation as the level of Lake Powell rises. Much of this shoreline growth is the result of drought conditions during the last 5-8 years, which has resulted in an accumulation of sediment and downstream movement of the boundary between the lake and river. The accumulation of sediment has caused the main channel to move against the western bank, leaving large areas of backwater and sediment islands along the eastern bank. This has provided the ideal substructure for the development of dense stands of tamarisk/willow habitat. As the water rises and falls, dependent on water releases from Glen Canyon Dam, the river edge area is periodically inundated, generally during the summer months when the migratory bird would be nesting and raising young. Much of this habitat area was underwater as late as 2000 and would again be underwater if the drought ended and the necessary amount of run-off entered the lake.

Presence and Absence surveys have not been conducted for this species in this area. Determination of affect was based on the habitat description for the Southwestern Willow Flycatcher as found in its recovery plan. Our observations reveal clear evidence of dense riparian thickets of large patch size that are near quiet, slow-moving backwater that is subject to periodic inundation, scouring floods and sediment deposition.

Yearly surveys were conducted from 1992 to 2000 for the Southwestern Willow Flycatcher below Glen Canyon Dam in Glen Canyon NRA. In May 1993 and 1994, several individuals were detected but did not remain at the locations they were observed and were probably migrants. Additionally, these sightings were in early to late May and identification was not positive and therefore, could have possibly been Northern Willow Flycatchers, which migrate through the area in late spring, before the Southwestern Willow Flycatchers arrive. The nearest known breeding site is on the Colorado River about 50 miles below Glen Canyon Dam and over 100 miles southwest of the Hite developed area. Surveys have not been conducted at Hite.

There is no suitable habitat at or adjacent to the Bullfrog and Halls Crossing Developed areas (see enclosure 14 and 15).

**Determination - May Affect, Not Likely To Adversely Affect.**

**Mitigation Measures:**

In order to lessen the possible minor affects to Southwestern Willow Flycatcher habitat and any individual birds that may be using this area for roosting, foraging or nesting, the following mitigation measures have been incorporated into the EA: construction of the access road, restrooms and any other incidental actions needed to develop this camping area will take place outside the Southwestern Willow Flycatcher breeding season. Additionally, use of the camping area will be restricted to the non-breeding season. These restrictions will be lifted should the water level increase and drown the habitat area. As the water rises and falls, the shoreline camping area will be adjusted accordingly.

**Bald Eagle (*Haliaeetus leucocephalus*)**

**Bald eagle (*Haliaeetus leucocephalus*)** can be found in Glen Canyon NRA around the Lake Powell shoreline during the wintertime. During this time, they have generally been found roosting on sandstone outcrops and cottonwood snags. Bald eagles have not been found elsewhere in the park. Aerial surveys for this species are completed during the annual Audubon Christmas Bird Count and in the last 4 years, 95 percent have been sighted on cliffs and rounded sandstone hilltops. These birds do not breed in Glen Canyon NRA and our bird specialist, Dr. John Spence believes that these birds are from nearby Arizona and Colorado breeding populations. The earliest seasonal record of a bald eagle in Glen Canyon NRA is September 7<sup>th</sup> and the latest record is March 19<sup>th</sup>. Between 1990 and 2002, 699 bald eagles were recorded during 60 aerial surveys with high year-to-year variability. Glen Canyon NRA staff continues to monitor bald eagles annually

Both adult and immature bald eagles have been seen foraging in Bullfrog Bay and have also been seen roosting on sandstone hilltops north and south of the Bullfrog developed area and north and south of the Hite developed area. The area south of the Bullfrog developed area and north and south of the Halls Crossing developed area have been proposed as expansion areas for visitor use boat ramps and the State of Utah Ferry ramp, should the level of Lake Powell drop below 3550 feet in elevation. At this elevation, the current ramps will become unusable; and due to topography, extension of these ramps will not be possible and new ramps will have to be built.

**Determination:** May affect, not likely to adversely affect.

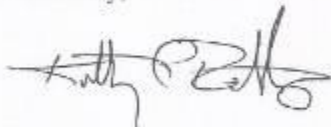
Mitigation Measures: None

While bald eagles are seen in the park during winter months, adverse impacts under either of the alternatives would be negligible for this species. Most roost sites found during yearly surveys were located well outside the developed areas along remote sections of the shoreline. Additionally, the bald eagles in the NRA are able to move freely from one roost site to another and always vacate an area being occupied (even temporarily) by humans.

These recommendations will be included in the Draft Uplake DCP/EA to be released for public review in mid-July. The NPS requests your concurrence with our determination.

Please contact Ms. Barbara Wilson, Environmental Compliance Specialist, at 928-608-6333 or by email at [Barbara\\_Wilson@nps.gov](mailto:Barbara_Wilson@nps.gov).

Sincerely,



Kitty L. Roberts  
Superintendent

Enclosures - 16

<input type="checkbox"/>	Concur No Effect
<input checked="" type="checkbox"/>	Concur Not Likely to Adversely Affect
<input type="checkbox"/>	No Comment
	
U.S.F.W.S. - Utah Field Supervisor	
Date _____	





As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. Administration.



NPS July 2006 / Printed on recycled paper