Pictured Rocks National Lakeshore

National Park Service
U.S. Department of the Interior

Environmental Assessment/Assessment of Effect

Rehabilitate Little Beaver Lake Road

August 2009

ENVIRONMENTAL ASSESSMENT/ASSESSMENT OF EFFECT

Rehabilitate Little Beaver Lake Road

Prepared For:
National Park Service

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Denver Service Center

Pictured Rocks National Lakeshore
Michigan

U.S. Department of the Interior
National Park Service

Environmental Assessment/Assessment of Effect
Rehabilitate Little Beaver Lake Road

Pictured Rocks National Lakeshore
Alger County, Michigan

Summary

The National Park Service in cooperation with the Federal Highway Administration/Eastern Federal Lands Highway Division proposes to rehabilitate Little Beaver Lake Road in Alger County, Michigan. Little Beaver Lake Road is a 3.0-mile gravel road, providing access from County Road H-58 to a trailhead; a small, rustic 8-site, drive-in campground; and a small boat launch for access to Little Beaver Lake.

The proposed work includes upgrading the road surface and drainage, increasing sight distances on narrow winding road segments, protecting erodible cut and fill slopes, and improving traffic flow and increasing parking capacity at the campground, boat launch, and trailhead areas. Road rehabilitation could begin in 2010.

Notes to Reviewers and Respondents

This environmental assessment will be on public review for 30 days. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can request in your comment that your personal identifying information be withheld from public review, the National Park Service cannot guarantee that we would be able to do so. All submissions from organizations, businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses would be made available for public inspection in their entirety.

Please address comments to: The public is invited to direct concerns or comments regarding this project to Superintendent Northup online at http://parkplanning.nps.gov/piro. Comments may be mailed to Pictured Rocks National Lakeshore, P.O. Box 40, Munising, MI 49862-0040; FAX 906-387-4025; telephone 906-387-2607, ext. 202.

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INTRODUCTION

The National Park Service (NPS) in cooperation with the Federal Highway Administration/Eastern Federal Lands Highway Division (FHWA) proposes to rehabilitate Little Beaver Lake Road in Alger County, Michigan. Little Beaver Lake Road is a 3.0-mile gravel road, providing access from County Road H-58 to a trailhead; a small, rustic 8-site, drive-in campground; and a small boat launch at Little Beaver Lake. The road also provides access to trailheads that lead into the lakeshore's backcountry areas, including the Beaver Basin Wilderness.

The proposed work includes upgrading the road surface and drainage, increasing sight distances on narrow, winding, road segments, protecting erodible cut and fill slopes, and improving traffic flow and increasing parking capacity at the campground, boat launch, and trailhead areas (see Project Location map on page 3). Road rehabilitation could begin in 2010.

PURPOSE AND NEED FOR ACTION

The purpose of the proposed action is to provide safe and efficient driving conditions for visitors traveling to the Little Beaver Trailhead and Little Beaver Lake Campground and boat launch, provide more and efficient parking space to support current and future demand for recreational access in the lakeshore, reduce road-related erosion and runoff, and reduce long-term road maintenance needs and costs. The primary objective is to provide a high quality visitor experience while protecting the natural and rustic character of the Little Beaver Lake Road corridor.

Under the lakeshore's recently approved General Management Plan (GMP), no additional development is planned at Little Beaver Lake. The campground would remain a small rustic, 8-site drive-in campground suited primarily for tent campers, individuals pulling small pop-up campers or trailers with small boats, and small motor homes up to approximately 24 feet in length. Vehicle size restrictions will be necessary due to limitations of area facilities. The road is closed to motor vehicles during the winter months, but is open for snowmobile use. Anglers would continue to use small boats and if powered, only with electric motors. This area would continue to be used by day hikers and overnight backpackers and would serve as one of the key portals to the park's most remote areas, managed under a primitive management prescription and designated as wilderness.

Consequently, it is the intent of the National Lakeshore that the Little Beaver Road would maintain its essential character as a narrow gravel road that winds through the north woods, and while providing for safe passage for current and anticipated public use and proper drainage, would provide visitors with a sense of remoteness and adventure as they transition from the paved County Road (H-58) into the most remote portion of the park accessible by motor vehicle. As visitors travel along and arrive at the end of the road, they should know and feel that they have arrived at a very special location within Pictured Rocks National Lakeshore.

To achieve this, this project would entail development of a context-sensitive design that incorporates the minimum necessary improvements to repair the road base, stabilize narrow sections, protect raw slopes, widen the road where necessary to allow for minimum safe passage of two standard-sized vehicles (approximately 18 feet), improve the grade and drainage, replace existing and add additional culverts and drainage structures, and cover the new base with gravel. The project would create a new exit route through the existing trailhead parking lot that would provide more parking stalls and become the road terminus. The road to the campground and boat launch would become a spur road. Alterations to the surfaces of the 6,000 square foot Little Beaver Trailhead parking lot and

boat launch would occur, including the application of gravel. A vehicle turnaround just north of the intersection with County Road H-58 would be created from a pre-existing commercial logging road under a written agreement with the land owner. The anticipated speed limit on the Little Beaver Lake Road would be 25 MPH.

Unless the analysis of the environmental consequences dictates otherwise, the NPS preferred alternative is to use the alignment and footprint of the existing road and to minimize the need for clearing beyond the width of the road surface, maintaining the existing forest canopy.

The proposed action is needed because the road pre-dates the establishment of the national lakeshore and was not constructed to currently accepted standards for the use the road receives now. The volume and types of public use have increased since the establishment of the national lakeshore and are expected to increase with the upgrade of County Road H-58.

Road hazards such as a particularly sharp curve, limited sight distances, narrow road widths, and steep road shoulder edge drop-offs create unsafe driving conditions on Little Beaver Lake Road. Drivers currently have no place to turn around if they decide the road is not suitable for their vehicles, until they have driven the entire length of the road. In addition, inadequate road base, poor drainage, and unstable cut slopes are causing road maintenance problems. The road has periodically washed out during intense rain events necessitating emergency road closures and repairs.

The trailhead parking lot has space for up to 20 averaged-sized vehicles. Because parking stalls are not delineated, parking capacity is often reduced by individual vehicles occupying more space than needed. None of the parking stalls are currently designated as accessible parking. Traffic moves in and out of the trailhead parking lot through one access. Vehicles with trailers take up a disproportionate amount of parking space, have to back out of the access driveway when the lot is full. Longer vehicles and vehicles pulling trailers have the most difficulty navigating the lot. Parking at the campground is limited to three regular-sized stalls and two oversized stalls for larger vehicles.

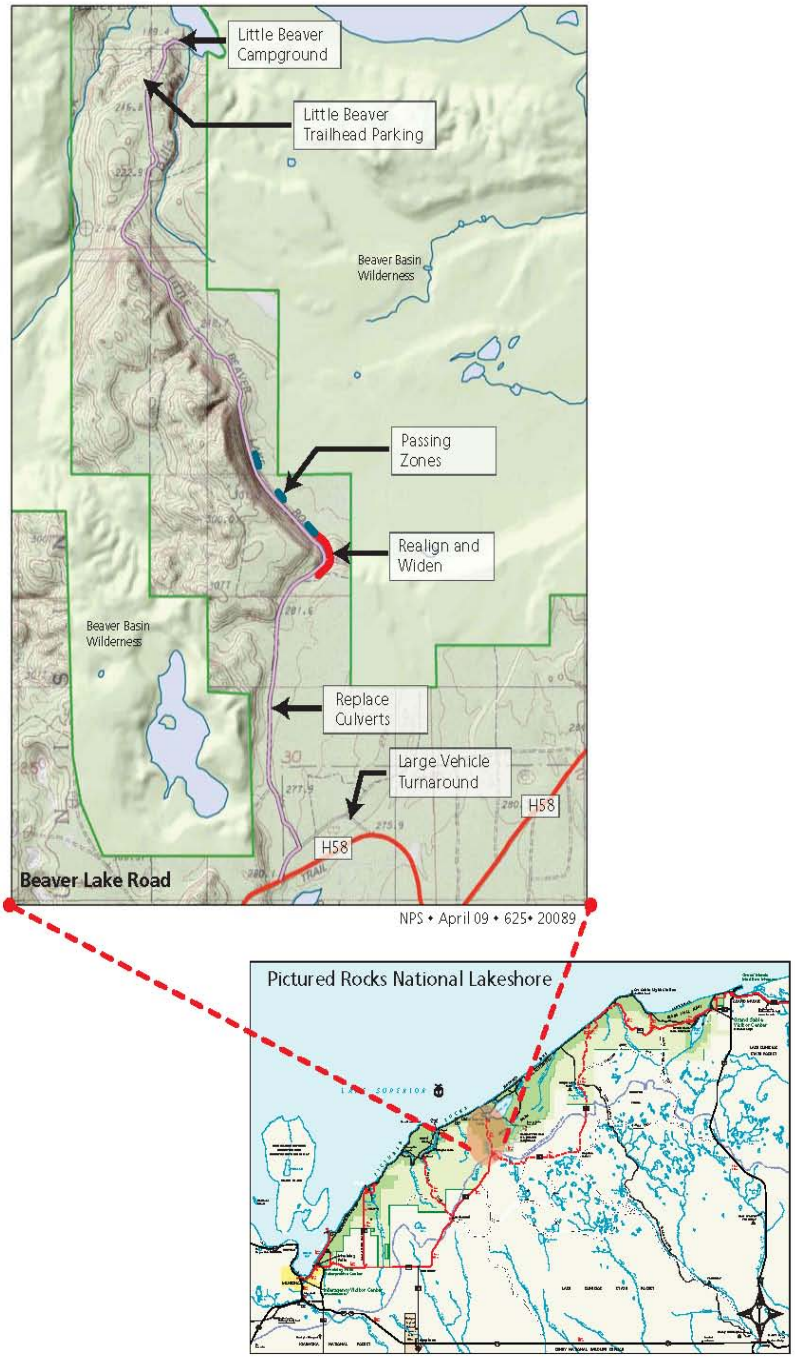
If the parking lots are full, excess vehicles park along the shoulders of the road and off the road during high use periods in May, June, July, and August. Vehicles parked on the shoulder encroach on the travel lane and cause more pedestrian activity on the road creating a safety issue.

LAKESHORE PURPOSE, SIGNIFICANCE, AND MISSION

An essential part of the planning process is to understand the purpose, significance, and mission of the lakeshore for which this Environmental Assessment/Assessment of Effect (EA/AoE) is being prepared.

Lakeshore Purpose

Pictured Rocks National Lakeshore's enabling legislation, its purpose and significance, and its broad mission goals are summarized in this section and are taken from the national lakeshore's *Final GMP / Wilderness Study / Environmental Impact Statement* that was approved under the Record of Decision signed in December 2004.



Project Location
Rehabilitate Little Beaver Road
Pictured Rocks National Lakeshore
United States Department of the Interior / National Park Service

Significance of Pictured Rocks National Lakeshore

As stated in the national lakeshore's *Final GMP*, Pictured Rocks National Lakeshore is significant because:

- Pictured Rocks National Lakeshore preserves and affords public access to a spectacular and diverse segment of the Lake Superior shoreline.
- Appreciated for their scenic value, the 200-foot high Pictured Rocks cliffs rise perpendicularly from Lake Superior, creating a rock mosaic of form, color, and texture, which is enhanced by cascading waterfalls.
- Grand Sable Dunes, perched atop 300-foot-high sand banks above Lake Superior, is one of two perched dune systems on the Great Lakes; within these dunes live unique plant communities resulting from geomorphic processes.
- Twelve miles of unspoiled and undeveloped Lake Superior beach contrast with the Pictured Rocks cliffs and Grand Sable Dunes.
- Bedrock geology and glacial landforms provide significant topographic relief marked by streams, inland lakes, and a diversity of associated vegetation.
- The shoreline offers extraordinary and inspirational scenic vistas of Lake Superior, the largest body of surface area of fresh water on earth.
- Pictured Rocks National Lakeshore offers a variety of affordable year-round recreational opportunities for appropriate public use.
- Within a distinct area, the lakeshore contains a spectrum of cultural resources focused on the human use of Lake Superior and its shoreline.
- Lying in a transition zone between boreal and eastern hardwood forest, the lakeshore's scientifically recognized assemblage of flora and fauna is representative of associations unique to the Lake Superior Basin.
- Pictured Rocks is the only national park system area with a legislated buffer zone.

PROJECT BACKGROUND, PREVIOUS PLANNING, AND SCOPING

Previous Planning

The lakeshore is currently operating under the direction of the 2004 GMP, and the NPS believes the proposed rehabilitation of Little Beaver Lake Road, campground, trailhead parking lot and road terminus loop are in keeping with the GMP. The GMP states that NPS lands within the Beaver Basin area (approximately 11,739 acres, including 761-acre Beaver Lake and 39.5-acre Little Beaver Lake) have been evaluated and found to possess wilderness characteristics under the Wilderness Act of 1964. Congress officially designated the basin as a wilderness area under the Omnibus Public Land Management Act of 2009, and President Barack Obama signed it into law on March 30, 2009 (Public Law 111-11). Elements of the wilderness study, including management prescriptions, are incorporated into the GMP.

The area surrounding Little Beaver Lake Road, campground, and trailhead parking lot, including the Beaver Basin Wilderness, is managed as primitive "to provide opportunities for relatively remote, wild experiences and to maintain natural conditions in this wild area" (NPS 2004). This prescription calls for emphasis on maintaining the natural environment with only limited visitor facilities. With the exception of Little Beaver Lake Road and the road to Beaver Basin overlook, all other primitive roads in the basin have been closed and allowed to revert to natural conditions. The Beaver Basin Wilderness boundary near the Little Beaver Lake campground, road, and associated trailhead

parking lot follows township, range, and section lines falling within 250 to 1,200 feet of these development features. Although improvements to these development features are not specifically mentioned in the GMP, the NPS believes that the proposed improvements are in keeping with the area's primitive management prescription and are necessary for the protection of park resources and the visitor experience.

The 2004 GMP management strategies state that opportunities for visitor use in the national lakeshore would expand, while preserving the central portion of the national lakeshore in a primitive, relatively undisturbed state. Various improvements are identified in the GMP to accommodate possible increased visitor use in the areas of the lakeshore not included in the wilderness boundary. Little Beaver Lake Road, Little Beaver Trailhead, and Little Beaver Lake Campground are outside the wilderness boundary, and vehicular access to the campground will continue. Little Beaver Lake Road is managed as an improved gravel road, and the GMP prescription allows for limited modifications for visitor safety, including limited removal of trees to accommodate road width, regular grading, and improved design to accommodate all vehicle types. This management prescription also seeks to minimize impacts on natural and cultural resources and to maintain the scenic qualities and rustic character of the road. Little Beaver Lake Campground and parking lot are managed as casual recreation, and the GMP prescription allows for limited natural and cultural resources modifications for essential visitor and lakeshore needs. This management prescription also emphasizes natural and cultural resource protection, public safety, and reducing visitor conflicts. The Little Beaver Lake Campground, which consists of 8 campsites, parking lot, vault toilet and boat ramp, will continue to be managed as a small, rustic campground. Gas motors are prohibited on both Little Beaver and Beaver Lakes, only electric motors are permitted.

The GMP also supports upgrades to County Road H-58, the primary access to the Lakeshore and the major connector to Little Beaver Lake Road and campground. The County Road H-58 rehabilitation project was approved and is currently being implemented by the Alger County Road Commission.

Scoping

Scoping is an effort to involve agencies and the general public in determining issues to be addressed in this document. Scoping is used to determine important issues to be given detailed analysis in this document and eliminate issues not requiring detailed analysis; allocates assignments among the interdisciplinary team members and/or other participating agencies; identifies related projects and associated documents; identifies permits, surveys, consultations, etc., required by other agencies; and creates a schedule that allows adequate time to prepare and distribute this document for public review and comment before a final decision is made.

Staff of Pictured Rocks National Lakeshore and resource professionals of the NPS Denver Service Center (DSC) conducted internal scoping. Scoping included defining the purpose and need, identifying potential actions to address the need, and determining the likely issues and impact topics. The site visit on May 20 – 21, 2008, initiated the processes for meeting the requirements of the National Environmental Policy Act of 1969 (NEPA) and Section 106 of the National Historic Preservation Act (NHPA).

To fulfill the requirements identified in NEPA and Section 106 of the NHPA, the NPS has additional guidance in Director's Order 12 (DO 12) that states each park unit will complete an Environmental Screening Form (ESF) when there is a federal undertaking at the park. The Director's Order requires that an interdisciplinary team of park resource professionals complete the ESF, provide mitigation measures for the undertaking, and make recommendations to the park

superintendent. The ESF also identifies the appropriate NEPA pathway for analyzing resource impacts. In this case an EA/AoE was identified as the appropriate NEPA pathway (NPS 2008). A press release initiating scoping, describing the proposed action, and soliciting public comments was issued on July 1, 2008 (see Appendix A). No comments were received. The public and appropriate federal and state agencies will also have an opportunity to review and comment on this EA/AoE.

In this EA/AoE discussions of impacts to cultural resources are among those impact topics dismissed from detailed analysis. The lakeshore sent scoping letters on July 24, 2008, to the Advisory Council on Historic Preservation (ACHP), the Michigan State Historic Preservation Officer (SHPO), and American Indian groups traditionally associated with the lakeshore. The letter also notified them of the intent to use the NEPA process to meet its obligations under Section 106 of the NHPA (see Appendix B).

ISSUES AND IMPACT TOPICS

Issues are problems or concerns that initiated the need for federal action or may result from the action itself. Issues and concerns affecting this plan were identified from past NPS planning efforts; in meetings with national lakeshore managers, FHWA staff, interested citizens, and input from other state and federal agencies. Once issues were identified, they were used to help formulate the alternatives and mitigation measures.

Specific impact topics were developed for discussion/analysis and to allow comparison of the environmental consequences of each alternative. These impact topics were identified based on the identified issues, federal laws, regulations, and Executive Orders; 2006 *NPS Management Policies*; and NPS knowledge of limited or easily impacted resources. A brief rationale for the selection of each impact topic is given below, as well as the rationale for dismissing specific topics from further consideration.

Impact Topics Selected for Detailed Analysis

Soils. Widening sections of the Little Beaver Lake Road and reconfiguring parking would cause short-term erosion and long-term loss of undisturbed soil. The 2006 NPS *Management Policies* require minimizing soil excavation, erosion, and off-site soil migration during and after development activities. Therefore, this topic is addressed in detail in this document.

Visitor Use and Experience. Visitor use of Little Beaver Lake Road, Little Beaver Trail, and Little Beaver Lake Campground and boat ramp access would be affected by the proposed rehabilitation effort. The volume and type of public use has increased on Little Beaver Lake Road since the establishment of the national lakeshore and is expected to increase slightly with the upgrade of County Road H-58. Impacts would include the short-term effects of the road repair and construction phase, and the long-term impacts of improved road condition and access to lakeshore facilities. Therefore, this topic is addressed in detail in this document.

Health and Safety. Little Beaver Lake Road is a gravel road that pre-dates the establishment of the national lakeshore and was never constructed to accepted standards for the current volume and type of public use. The road is too narrow in some areas to allow for the passage of two vehicles. The Little Beaver Lake Campground, boat launch, and trailhead parking lot served by the road have poor traffic flow, causing potential safety issues. Therefore, this topic is addressed in detail in this document.

Impact Topics Dismissed from Detailed Analysis

General Wildlife. The Pictured Rocks National Lakeshore GMP EIS (NPS 2004b)

addressed the effects of management options for the Little Beaver Lake Road, trailhead, campground, and parking lot. The EIS stated that "specific actions associated with each alternative have been evaluated with regard to effects on common wildlife species within the national lakeshore. NPS biologists have determined there would be little if any effect on common wildlife species. No dramatic changes on habitat, resident or migratory populations, or the diversity of general wildlife species within the national lakeshore would be expected." Therefore, general wildlife was dismissed from further analysis in this project.

Special Status Species. The Endangered Species Act (1973), as amended, requires an examination of impacts on all federally listed threatened or endangered species. NPS policy also requires examination of the impacts on federal candidate species, as well as state-listed threatened, endangered, candidate, rare, declining, and sensitive species.

The U.S. Fish and Wildlife Service's website (Fish and Wildlife Service 2009) was consulted for listed species that may occur in or near the project area. Canada lynx (*Lynx canadensis*), gray wolf (*Canis lupus*), piping plover (*Charadrius melodus*), and Pitcher's thistle (*Cirsium pitcher*) as federally listed threatened or endangered species may occur in Alger County. There is no critical habitat in or near the project area for any of these species. Gray wolves are endangered, but the Western Great Lakes District Population Segment that includes the lakeshore area has recently been proposed for delisting (Department of Interior 2009).

The NPS also consulted the Michigan Department of Natural Resources, Natural Features Inventory to obtain a current list of state and federally listed species that may occur near the project area. A list of state species of special concern in the central Upper Peninsula (Alger County) included 22 threatened, 7 endangered, and 25 species special concern (Michigan Natural Features Inventory 2009). See http://web4.msue.msu.edu/mnfi/data/cnty_dat.cfm?county=Alger for the complete list. This list does not include Canada lynx or gray wolf. Park staff determined that no state listed species occupy habitat in and around the project area (NPS 2007). The alternatives would have no effect on those special status species that do not occur in the project area and, therefore, are not discussed in this document.

Only the lynx and gray wolf could possibly occupy habitat in the vicinity of the project area. Lynx have been recently reported in the eastern Upper Peninsula of Michigan, but none have been documented in the national lakeshore since its establishment in 1966. It is unlikely that lynx would occur in the lakeshore because of the general lack of suitable habitat for snowshoe hare, the primary prey for lynx (NPS 2004a).

Wolf sightings and track or scat evidence in and near the lakeshore have been reported, including tracks in Beaver Basin. Gray wolf use of the national lakeshore is limited due in part to the low prey densities, including deer, which are the primary food source for wolves (NPS 2004a, Potvin, et al. 2005). Currently the nearest monitored pack is 20 miles southeast of the project area in Seney National Wildlife Refuge (NPS 2004a).

Both lynx and gray wolves tend to avoid roads and associated human activities. There have been no recent reports of either species occurring in or near the project area.

The preferred alternative would have negligible effects on prey habitat because most work would be confined to the existing road prism, campground, and parking lot, and only small areas of vegetated habitat would be lost over the long term. Vegetation would be restored on most disturbed areas according to the revegetation plan for this project. Increased noise from heavy equipment and construction activities above the normal traffic noise and visitor activities would have negligible cumulative effects on animals in undisturbed habitat surrounding the project area.

Based on the current absence of lynx and wolves in the project area and the fact that only a small amount of potential prey habitat would be altered the NPS has determined that the preferred alternative would have no effect on lynx or gray wolves. Therefore, the impact topic, special status species, was dismissed from further analysis in this document.

Vegetation. The project road travels through a northern hardwood forest dominated by beech, sugar maple, red maple, yellow birch, hemlock, and white pine. This forest type is transitional between the homogenous deciduous forest to the south and the coniferous boreal forest to the north (Ayres Associates Inc. 2008). Park staff recently surveyed vegetation in the project area and identified 67 species of plants. Fifty-three species were native and 14 were non-native (NPS 2007). Only two of these plants, field mustard (*Brassica rapa*) and wild carrot *(Daucus carota),* are Michigan state-listed noxious weeds. No federal noxious weeds were found.

Impacts to vegetation would be minor because the mitigation measures for the proposed action, including revegetation of disturbed areas and weed control, would minimize adverse effects. Therefore, vegetation was dismissed from further analysis in this document.

Wetlands. Executive Order 11990 (*Protection of Wetlands*) requires an examination of impacts to wetlands, and the 2006 NPS *Management Policies* and Director's Order 77-1 provide guidelines for proposed actions within wetlands. A jurisdictional wetland is an area that meets the criteria established by the US Army Corps of Engineers (as set forth in their Wetlands Delineation Manual). In addition, the NPS classifies wetlands based on the U.S. Fish and Wildlife Service Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979).

A wetland delineation was completed along the east side of Little Beaver Lake Road from the road to a distance of 150 feet to the east (Ayres Associates Inc. 2008). Six wetlands totaling 5.38 acres were delineated within this 150-foot corridor. Two of the delineated wetlands are natural drainage features within a few feet of the road and are fed by watersheds through culverts under the road. Replacement of damaged or obstructed culverts would be in-kind and placed at an elevation and locations as not to affect normal water elevations and flow patterns of any wetlands. Other wetlands are within 20 feet of the road prism downhill (east) of the curve and proposed passing zones.

Impacts to these wetlands would be negligible because the proposed action and mitigation measures were designed to avoid disturbing any wetlands. Therefore, wetlands have been dismissed from further analysis in this document.

Floodplains. Executive Order 11988, "Floodplain Management," requires an examination of impacts to floodplains and potential risk involved in placing facilities within floodplains. NPS *Management Policies* 2006, Director's Order #77-2, "Floodplain Management," and Director's Order #12, "Conservation Planning, Environmental Impact Analysis, and Decision-making," provide guidelines for proposals in floodplains. NPS *Management Policies* 2006 provides direction for the preservation, use, and quality of water in national parks.

The Pictured Rocks National Lakeshore GMP EIS (NPS 2004b) addressed the effects of development on floodplains, including the effects of management options for the Little Beaver Lake Road, campground, and parking lot. The EIS stated that "None of the actions in any of the alternatives would result in development in floodplains or high- hazard areas or increase the risk of loss of life and property from flood damage. Natural and beneficial floodplain values would not be affected because there would be no modification of floodplain areas." Soil survey data also indicate that project area soils are not flooded (Natural Resources Conservation Service 2009). Therefore, floodplains have

been dismissed from further analysis in this document.

Air Quality. The 1977 amendment to the Clean Air Act, (42 U.S.C. 7401 *et seq*.), requires federal land managers to protect lakeshore air quality, while *NPS Management Policies 2006* addresses the need to analyze air quality during lakeshore planning. Pictured Rocks National Lakeshore is a Class II air quality area.

Class II areas are non-Class I areas that are in attainment with the National Ambient Air Quality Standards or are not classified. Moderate deterioration of air quality associated with well-managed industrial growth is allowed in Class II areas. The 1963 Clean Air Act provides that the federal land manager (the Assistant Secretary for Fish and Wildlife and Parks and the Park Superintendent) have an affirmative responsibility to protect the park's air quality related values (including visibility, plants, animals, soils, water quality, cultural and historic resources and objects, and visitor health) from adverse air pollution impacts. Section 118 of the 1963 Clean Air Act requires the parks to meet all federal, state, and local air pollution standards.

To help minimize impacts on air quality, construction crews would be required to control dust to reduce particulate matter and avoid idling vehicles for long periods when not in use to reduce exhaust emissions (see "Mitigation Measures" section below). The impacts would last only as long as construction activities occurred. Overall, the preferred alternative would cause only a slight and short-term degradation of local air quality due to dust generated from construction activities and equipment emissions, resulting in negligible adverse impacts. Therefore, air quality was dismissed from further analysis in this document.

Water Quality. The 1972 Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977, is a national policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters, and to enhance the quality of water resources and prevent, control, and abate water pollution. The 2006 NPS *Management Policies* provide direction for the preservation, use, and quality of water originating, flowing through, or adjacent to park boundaries. The NPS seeks to restore, maintain, and enhance the quality of all surface and ground waters within the parks consistent with the Federal Water Pollution Control Act (1972), as amended, and other applicable federal, state, and local laws and regulations. Little Beaver Lake Road is in the Bear Creek – Frontal Lake Superior and Stoner Creek – Creighton River watersheds.

The project would require excavation and cut and fill actions, therefore, silt screens or other methods of erosion and sedimentation control would be implemented to reduce potential impacts to water quality. Surface restoration and revegetation of disturbed land would reduce soil erosion and minimize the potential for long-term impacts. No water would be removed or diverted from any drainage for this project. With mitigation measures there would be little potential for adverse impacts to the watersheds and water quality. Because mitigation measures described under the "Mitigation Measures" section below would reduce the level of impact to negligible, water quality was dismissed from further analysis in this document.

Soundscapes. In accordance with *NPS Management Policies 2006* and Director's Order – 47: *Sound Preservation and Noise Management*, an important part of the NPS mission is preservation of natural soundscapes associated with national park units. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials. The frequencies, magnitudes, and durations of human-caused sound considered acceptable vary among NPS units and potentially throughout each park

unit. Construction activities would be relatively isolated along Little Beaver Lake Road, and noise associated with construction would be short-term, minor, and adverse. Cars, trucks, and recreational vehicles generate some noise, which tends to be greater on gravel roads compared to other road surfaces; however, vegetation dampens and absorbs sounds sufficiently so that adverse impacts would be short-term and negligible, compared to current conditions (NPS 2004b). Therefore, soundscapes were dismissed from further analysis in this document.

Night Sky. The GMP states that the use of artificial outdoor lighting in the lakeshore is limited, and the lakeshore works with local residents and governments to protect the night sky along the lakeshore. The current impact of light pollution along Little Beaver Road is localized and negligible, lasting as long as it takes for a vehicle to pass. No additional artificial lighting or any actions that would increase nighttime visitors are proposed under the preferred alternative. These impacts would be short-term, minor, and adverse. Therefore, night sky was dismissed from further analysis in this document.

Prime and Unique Farmland. In 1980 the Council on Environmental Quality (CEQ) directed federal agencies to assess the effects of their actions on farmland soils classified as prime or unique by the United States Department of Agriculture, Natural Resources Conservation Service. Prime or unique farmland is defined as soil which produces general crops, such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops, such as fruits, vegetables, and nuts. As identified by lakeshore staff, there are no prime or unique farmlands associated with the project area; therefore, this topic was dismissed from further analysis in this document.

Environmental Justice. Executive Order 12898 (*General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* 1994), requires all agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations or communities. No alternative under consideration would have disproportionate impacts on the health or environment of minority or low-income populations or communities as defined in the Environmental Protection Agency's *Draft Environmental Justice Implementation Plan* (1996). The alternatives would affect all populations equally. Environmental justice was, therefore, dismissed from further analysis in this document.

Socioeconomics. Any construction employment would have a beneficial short-term impact on the economies of nearby counties and municipalities. There would be limited increases in employment opportunities for the road construction work force and revenues for local businesses and government generated from construction activities and workers. Any increase would be beneficial locally and short-term in duration, lasting only as long as the construction period. Because the impact would be no greater than negligible, impacts on the socioeconomic environment are not analyzed in detail in this document.

Archeological Resources. Little Beaver Lake Road passes through an area considered to have a low probability for archeological resources. Road construction activities would be confined to the road prism in previously disturbed areas. In November 2008, a Phase I archeological survey of the Little Beaver Lake Campground and the Little Beaver Trailhead parking lot was completed by Northern Michigan University (Anderton 2008). No archeological resources were found. The survey report was submitted to the MI SHPO on July 24, 2009, as required under the consultation provisions of Section 106 of the NHPA of 1966, as amended. There would be no impact to archeological resources and, under Section 106, no historic properties affected. Therefore, this impact topic has been

dismissed from further analysis in this document.

In the unlikely event that human remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (25 USC 3002) of 1990, and the lakeshore's *Protocol for Inadvertent Discovery of Historic Human Remains During Research of Park Management Activities* (2009) would be followed.

Historic structures. Properties more than fifty years old may be eligible for the National Register of Historic Places if they meet the criteria for listing and for contributions at the national, state, or local level. In order for a structure or building to be listed in the National Register, it also must possess historic integrity of those features necessary to convey its significance, i.e., location, design, setting, workmanship, materials, feeling, and association. There are no historic structures within the area of potential effect. Therefore, this topic has been dismissed from further analysis in this document.

Ethnographic Resources. Ethnographic resources are defined by the NPS as any "site, subsistence, or other significance in the cultural system of a group traditionally associated with it" (Director's Order – 28). American Indian tribes traditionally associated with the national lakeshore include the Sault Ste. Marie Tribe of Chippewa Indians; the Bad River Band of Lake Superior Chippewas, Wisconsin; the Bay Mills Community, the Red Cliff Band of Lake Superior Chippewas, Wisconsin; the Garden River Band, Ontario; and the Manitoulin Island Community of Ojibway, Ottawa, Ontario. The tribal contacts were sent a scoping letter on July 24, 2008, describing the proposed project and requesting comments. There were no comments received from the tribes consulted. Each tribe will also receive copies of this document for their review and comment. If subsequent issues or concerns are identified, appropriate consultations would be undertaken. According to NPS professional staff and the GMP there are no known ethnographic landscapes or resources within proximity to Little Beaver Lake Road and campground or the Little Beaver Trailhead eligible or listed in the National Register. Consequently, no adverse impacts are anticipated and appropriate steps would be taken to protect any human remains, funerary objects, sacred objects, or objects of cultural patrimony inadvertently discovered during project construction. Therefore, ethnographic resources were dismissed from further analysis in this document.

Museum Objects. Museum collections include historic artifacts, natural specimens, and archival and manuscript material. They may be threatened by fire, vandalism, natural disasters, and careless acts. The preservation of museum collections is an ongoing process of preventative conservation, supplemented by conservation treatment when necessary. The primary goal is preservation of artifacts in as stable condition as possible to prevent damage and minimize deterioration. Professional staff at the lakeshore has indicated that the proposed activities would not require additional curatorial services or increase the number of museum objects at the lakeshore; therefore, museum objects were dismissed from further analysis in this document.

Indian Trust Resources. Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by Department of Interior agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes. The lands comprising the lakeshore are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Therefore, Indian trust resources were

dismissed from further analysis in this document.

Cultural Landscapes. According to the NPS's Cultural Resource Management Guideline (Director's Order – 28), a cultural landscape is ". . . a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined by both physical materials, such as roads, buildings, walls, and vegetation, and by use reflecting cultural values. No cultural landscapes were identified by the lakeshore in the area of potential effect. Little Beaver Lake Road predates the creation of the national lakeshore, and was probably one of many associated with logging activities in the Beaver Basin. The campground was constructed later in the 1960s. Nonetheless, the proposed rehabilitation of the road and campground is designed not to significantly alter the basic alignment or rustic character of either of these properties, and the resulting impacts are expected to be minor. Therefore, cultural landscapes were dismissed from further analysis in this document.

Park Operations and Management. Routine maintenance activities are currently performed by lakeshore staff at the Little Beaver Lake Road, campground, boat launch, and trailhead parking lot. The road is periodically graded, trash receptacles are emptied, the vault toilet at the campground is cleaned, and non-native vegetation is monitored and controlled. In addition, the staff uses the boat ramp as an access point. However, as the facilities on Little Beaver Lake Road will be closed to visitors during construction, maintenance needs will be reduced. The adverse impact of the proposed construction is expected to be short-term and negligible, consisting mainly of rescheduling these tasks around the construction period. The impacts of the proposed rehabilitation of the Little Beaver Lake Road, trailhead parking lot, and campground are expected to be beneficial in the long term, due to the reduction of maintenance needs in the future once these facilities are upgraded. Therefore, park operations and management were dismissed from further analysis in this document.

ALTERNATIVES

This section describes a range of reasonable alternatives that help illustrate the effects of the proposal to rehabilitate Little Beaver Lake Road in Pictured Rocks National Lakeshore. Two action alternatives were evaluated. Under Alternative B, road conditions would be upgraded. At the trailhead and campground parking lots, only the gravel surfaces would be improved. Under Alternative C (preferred), the road would be upgraded, the redesigned trailhead parking lot would become a terminus loop road for more efficient traffic flow and more parking stalls, and a spur road would connect Little Beaver Lake Road to the campground which would be redesigned for more parking stalls. Both action alternatives would include the upgrade of a pre-existing corporate logging road as a one-way return lane to H-58 for drivers who decide that Little Beaver Lake Road is not suitable for their vehicles. The return lane would be maintained by the lakeshore under an agreement with the landowner.

In addition, NEPA regulations require that a no-action alternative (Alternative A) be evaluated to provide a basis for comparing the management direction and environmental consequences of the action alternatives. The no-action alternative continues current management practices. It does not imply or direct discontinuing the present action or removing existing uses, developments, or facilities. Should the no-action alternative be selected, the lakeshore would continue its current routine of maintenance and repairs.

Additional alternatives considered and dismissed from detailed analysis are also discussed in this section. A comparison of alternatives (Table 1 on page 26) is found at the end of this section.

ALTERNATIVE A – NO ACTION

The no-action alternative would continue to provide vehicle access to Little Beaver trailhead parking lot, Little Beaver Campground, and the small boat launch. The no-action alternative would fulfill resource protection objectives. No action would be taken to upgrade the road, parking lot or campground.

Little Beaver Lake Road

The lakeshore would continue to repair and maintain the road as needed. Road repairs would continue to be required because of poor surface drainage, damaged culverts, inadequate passing zones, and insufficient road base. Temporary road closures for repairs would continue as needed. The existing narrow curve, located 1.0 mile north from County Road H-58 (see Project Location map on page 3), would continue to have limited sight distance and require opposing vehicles to drive backwards to the nearest passing zone. The quality of the passing zones would remain low because of poor road base material and uneven surface elevations.

Little Beaver Lake Campground

The lakeshore would continue to maintain the existing campground. No action would be taken to increase parking space, improve traffic flow, or improve aesthetics.

Little Beaver Trailhead Parking

The lakeshore would continue to maintain the existing parking lot. No action would be taken to increase parking or turnaround space. Parking for large vehicles and vehicles with trailers would remain limited. Traffic flow through the parking lot would continue to be inefficient because of limited turnaround space.

Road Material Source and Staging Area

The lakeshore would continue to get material for road and parking lot maintenance within the project area from unspecified commercial sources outside the lakeshore zone boundaries. Small amounts of gravel would be brought in as needed to cover eroded spots. Maintenance and repair staging would be limited to the road, parking, and campground.

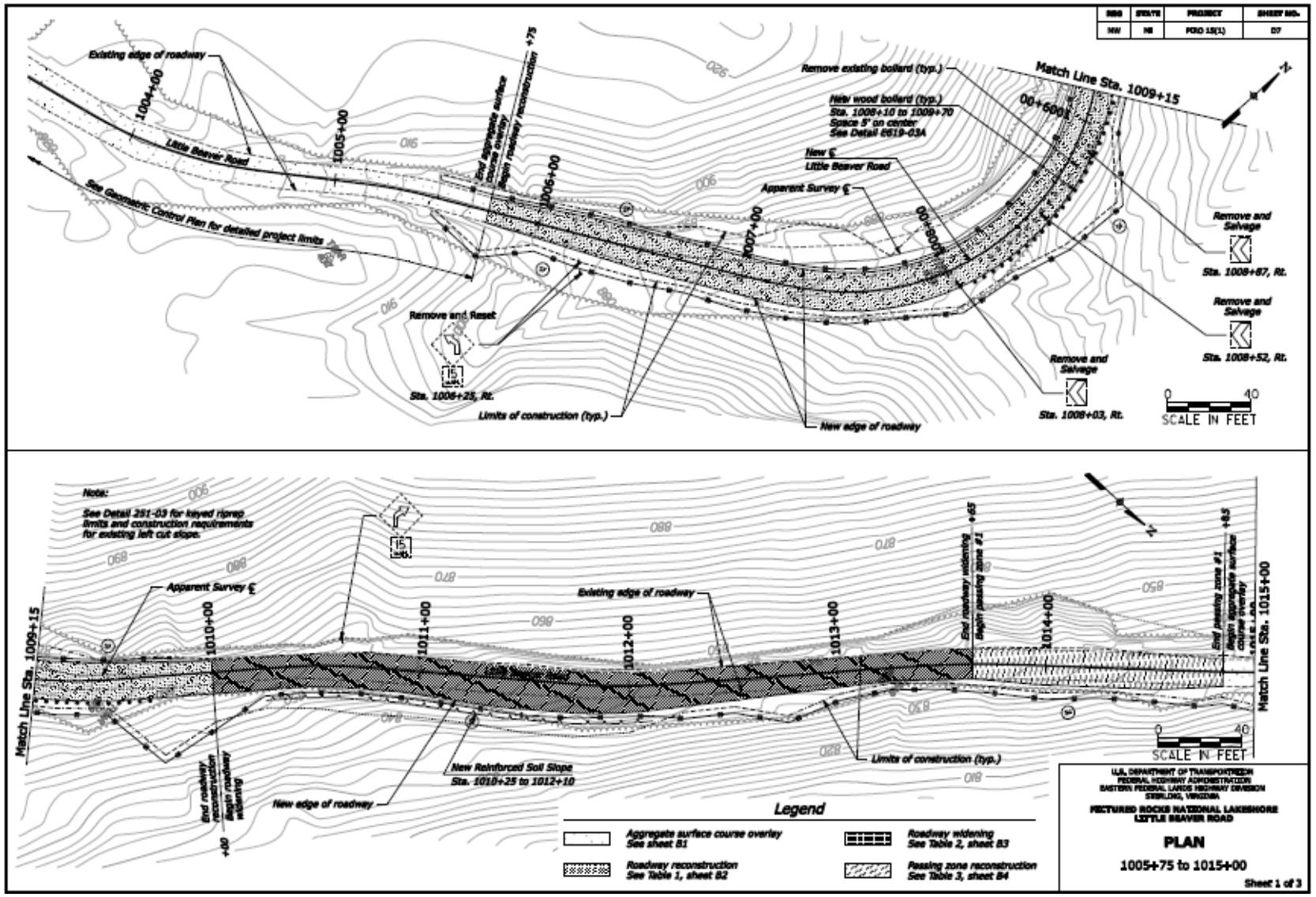
ALTERNATIVE B – MINIMUM ACTION

Alternative B would upgrade road conditions and improve trailhead and campground parking and travel lane surfaces. The road upgrades are designed to preserve the rustic character of the road corridor. Proposed construction would be completed in a few months, but may need to be phased over several years because of budget constraints or to avoid construction during peak visitor use periods.

Little Beaver Lake Road

About 3.0 miles of the Little Beaver Lake Road between Highway 58 and Little Beaver Lake Campground would be rehabilitated (see Project Location Map on page 3, and Plan for Little Beaver Lake Road Curve on page 15). Rehabilitation would correct subgrade and drainage problems that result in surface damage, reduce slopes on road shoulders and fill areas, and improve passing zone travel surfaces. For most of this road segment, the existing horizontal and vertical alignment would be maintained as a one-lane 12-foot wide gravel road with intermittent 18-foot wide passing zones. The following improvements and repairs would be made on the road:

- The sharp curve located 1.0 mile north from County Road H-58 (see Project Location map on page 3, and Plan for Little Beaver Lake Road Curve on page 15) would be realigned and widened to 18 feet to allow for two vehicles to pass, increase sight distance, and improve ease of use by larger vehicles up to 24-feet long and vehicles pulling trailers. This work would require reconstructing the northbound travel lane and fillslope. No trees that do not impair safe travel or the stability of adjacent areas would be removed. It is estimated that between 10 and 20 large trees would be removed. Where feasible, tree wells would be used on fillslopes to protect large trees. A small drainage improvement south of the curve would require a minor backslope modification.
- Where feasible existing wide spots in the road would be improved to be used as passing zones. These existing wide spots would be leveled and crushed gravel applied to the surface to create a consistent and wider road surface. These improvements would require a minor amount of fill to be added to the fillslope. The road backslope would not be modified.
- Drainage problems would be corrected with the replacement of damaged or obstructed culverts. New drainage ditches would also be cut parallel to the road where water tends to accumulate on the road and erosion is evident.
- Due to the sandy soils, erosion on the embankments and the steep drop-offs on the road shoulder would continue; however, erosion would be mitigated as much as possible by installing large rock at the base of the eroding cut slopes to help protect the slopes. Planting trees, salvaging topsoil and revegetating the unstable, sandy soils would also help to protect the slopes.
- A 4 to 12-inch layer of crushed gravel would be placed on the entire surface of the 3.0-mile road.
- A pre-existing corporate logging road would be upgraded as a return lane to H-58 for drivers who decide that Little Beaver Lake Road is not suitable for their vehicles.



PLAN FOR LITTLE BEAVER LAKE ROAD CURVE AND PASSING ZONE #1 – ALTERNATIVES B AND C

- The return lane, which lies on corporate forest land, would be maintained by the lakeshore under an agreement with the landowner (See Little Beaver Lake Road Large Vehicle Turnaround Layout on page 19).

Little Beaver Lake Campground

A 4 to 6-inch layer of crushed gravel would be placed on the surface of travel lanes and parking spaces in Little Beaver Lake Campground. The existing campground footprint and configuration would not be changed.

Little Beaver Trailhead Parking

A 4 to 6-inch layer of crushed gravel would be placed on the entire parking lot surface. The existing parking lot footprint and configuration would not be changed.

Road Material Source and Staging Area

The estimated amount of fill needed for the proposed improvements is about 125 cubic yards. The park would acquire the material from an unspecified commercial source(s) outside the park boundary and inland buffer zone. Weed-free material sources would be sought. If weed-free sand, rock, and gravel sources cannot be located, the contractor may be required to scrape away topsoil at the borrow sites and/or acquire material with minimum seed exposure.

Equipment and material staging and storage as well as construction vehicle turnarounds would be confined to the road, parking lot, or campground. Attempts would be made to schedule construction activities during the off-season to minimize impacts on visitors. The road, trailhead parking, and campground may be temporarily closed during the main construction phases. Campground and parking lot construction would be staggered so both are not closed at the same time.

ALTERNATIVE C – PREFERRED ALTERNATIVE

Under the preferred alternative Little Beaver Lake Road would be upgraded, the trailhead parking lot would become a terminus loop road for more efficient traffic flow and more parking stalls, and a spur road would connect Little Beaver Lake Road to the campground, which would be redesigned for more parking stalls. The improvement designs also preserve the rustic character of the road corridor. Proposed construction would be completed in a few months, but may need to be phased over several years because of budget constraints or to avoid construction during peak visitor use periods. The proposed rehabilitation of Little Beaver Lake Road as discussed below is the same treatment as proposed under Alternative B. However, the preferred alternative also includes additional improvements to the campground and trailhead areas.

Little Beaver Lake Road

About 3.0 miles of the Little Beaver Lake Road between Highway 58 and Little Beaver Lake Campground would be rehabilitated (see Project Location Map on page 3, and Plan for Little Beaver Lake Road Curve on page 15). Rehabilitation would correct subgrade and drainage problems that result in surface damage, reduce slopes on road shoulders and fill areas, and improve passing zone travel surfaces. For most of this road segment, the existing horizontal and vertical alignment would be maintained as a one-lane 12-foot wide gravel road with intermittent 18-foot wide passing zones. The following improvements and repairs would be made on the road:

- The sharp curve located 1.0 mile north from County Road H-58 (see Project Location map on page 3 and the Little Beaver Lake Road Curve on page 15) would be realigned and widened to 18 feet to allow for two vehicles to pass, increase sight distance, and improve ease of use by larger vehicles up to 24-feet long and

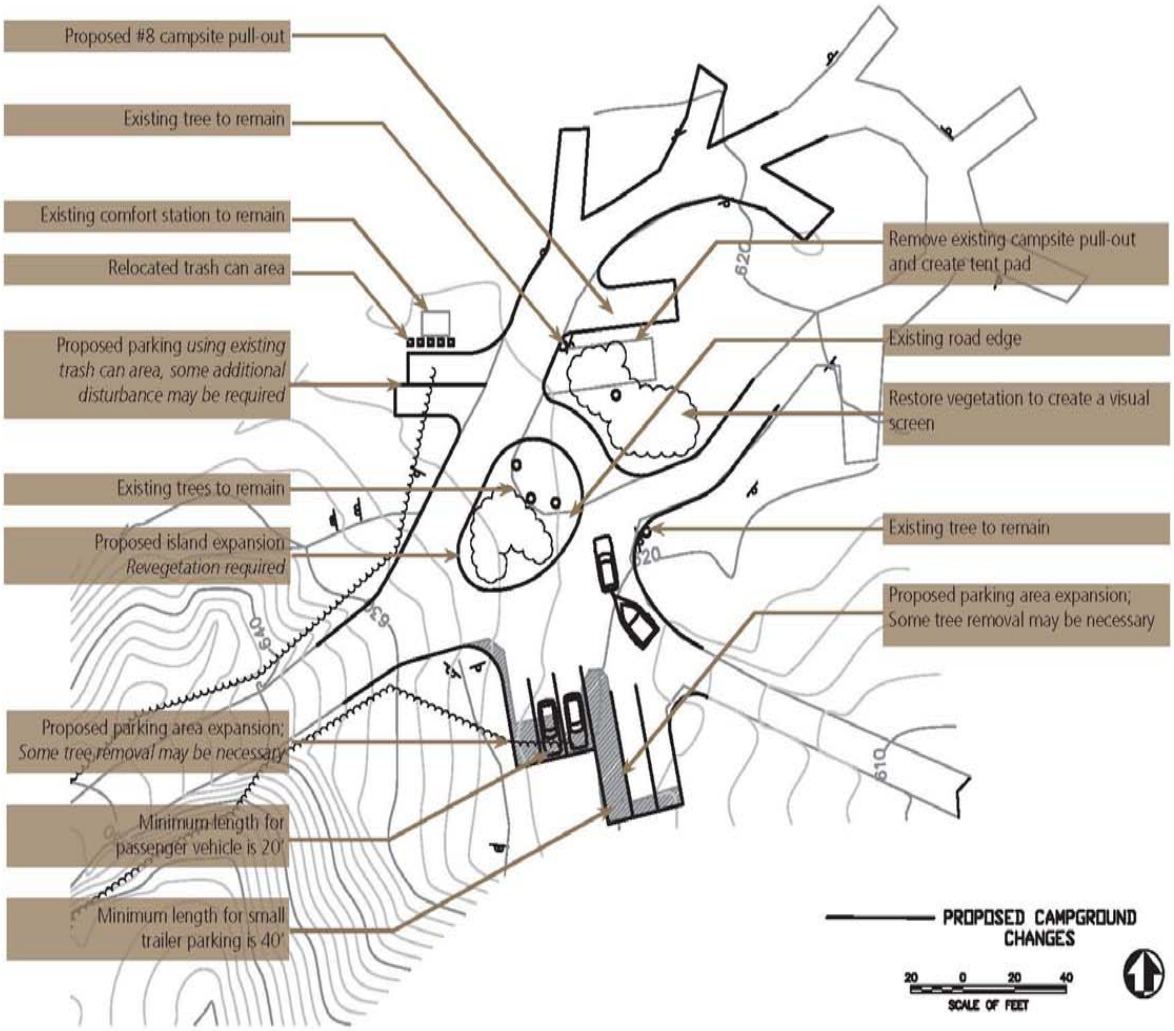
vehicles pulling trailers. This work would require reconstructing the northbound travel lane and fillslope. No trees that do not impair safe travel or the stability of adjacent areas would be removed. It is estimated that between 10 and 20 large trees would be removed. Where feasible, tree wells would be used on fillslopes to protect large trees. A small drainage improvement south of the curve would require a minor backslope modification.

- Wider places in the existing road would be upgraded as passing zones (see these locations identified on Project Location map on page 3). These existing wide spots would be leveled and crushed gravel applied to the surface to create a consistent and wider road surface. These improvements would require a minor amount of fill to be added to the fillslope. The road backslope would not be modified.
- Drainage problems would be corrected with the replacement of damaged or obstructed culverts. New drainage ditches would also be cut parallel to the road where water tends to accumulate on the road and erosion is evident.
- Due to the sandy soils, erosion on the embankments and the steep drop-offs on the road shoulder would continue; however, erosion would be mitigated as much as possible by installing large rock at the base of the eroding cut slopes to help protect and stabilize the slopes. Planting trees, salvaging topsoil and revegetating the unstable, sandy soils would also help to protect the slopes.
- A 4 to 12-inch layer of crushed gravel would be placed on the entire surface of the 3.0-mile road.
- A pre-existing corporate logging road would be upgraded as a return lane to H-58 for drivers who decide that Little Beaver Lake Road is not suitable for their vehicles. The return lane, which lies on corporate forest land, would be maintained by the Lakeshore under an agreement with the landowner (see the Beaver Lake Road Large Vehicle Turnaround Layout on page 19).

Little Beaver Lake Campground

The following modifications could be planned at the Little Beaver Campground to increase parking lot and create visual screening at two campsites.

- The five existing parking spaces near the boat ramp entrance would be modified to accommodate three regular-sized vehicles and three vehicles with trailers.
- The campsite pullout #8 and tent pad could be moved north about 20 feet and the existing pullout revegetated to create a visual screen for enhanced privacy.
- The center traffic-control island could be expanded and revegetated to improve aesthetics and traffic flow.
- Two parking spaces would be added and trashcans would be relocated next to the comfort station (See Alternative Campground Layout on page 18).
- For expansion of the parking lot, some trees would be cut down (see Alternative Campground Layout on page 18).



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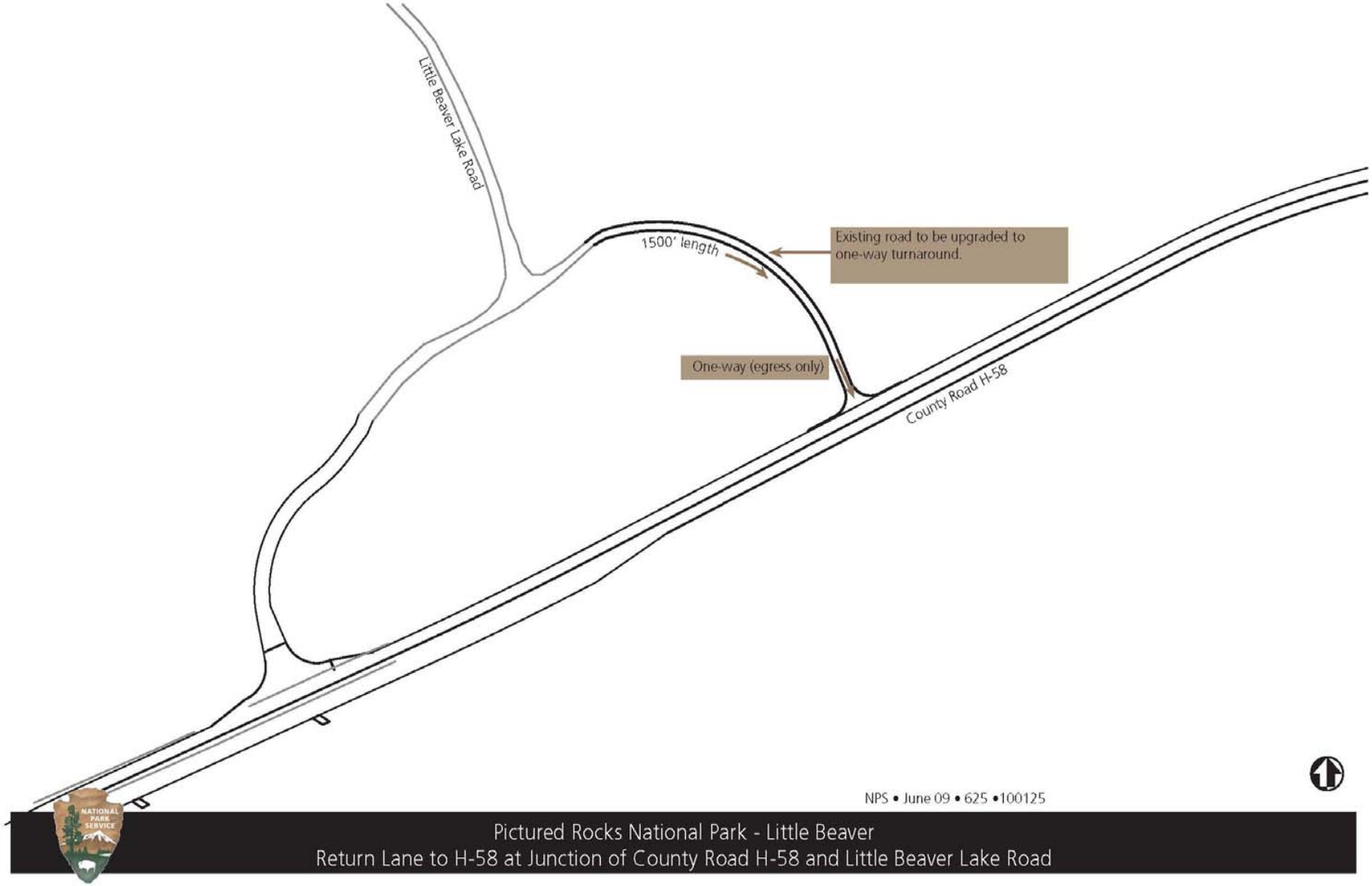
Pictured Rocks National Park - Little Beaver
Alternative C Campground Layout


Little Beaver Lake Road
1500' length
Existing road to be upgraded to one-way turnaround.
One-way (egress only)
County Road H-58
NPS • June 09 • 625 •100125
Pictured Rocks National Park - Little Beaver
Return Lane to H-58 at Junction of County Road H-58 and Little Beaver Lake Road

Little Beaver Trailhead Parking

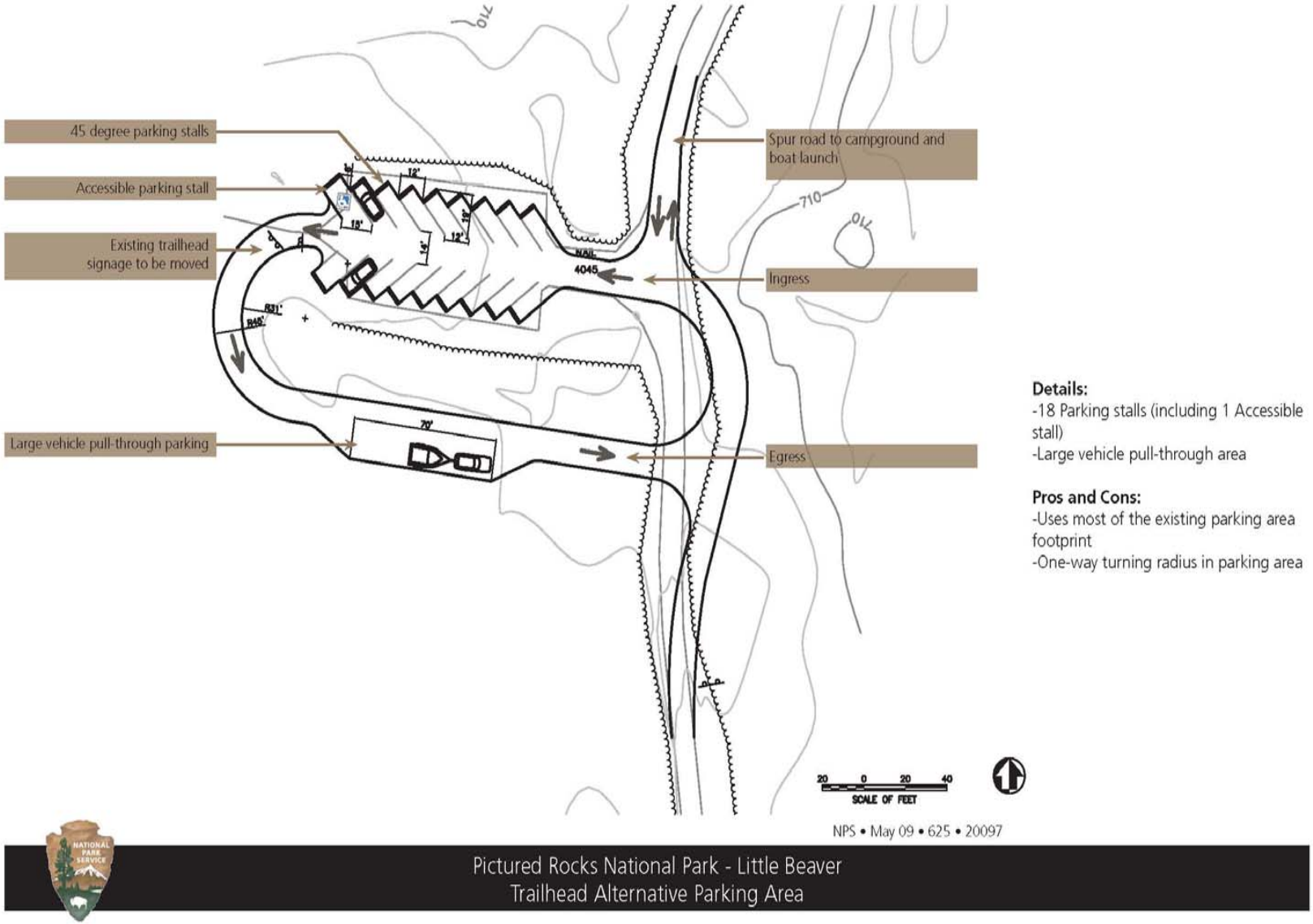
The Little Beaver Trailhead parking lot would be reconfigured to be the terminus for drivers rather than the campground (See Little Beaver Trailhead Alternative Parking Area map on page 21). The road and parking lot would be realigned so that drivers would be directed into the parking lot rather than the campground. The road between the trailhead parking lot and campground would become a spur road intended primarily for campers and boaters. This redesign would help reduce traffic, vehicle noise and headlight intrusion in the campground. The access and turning lanes would be 14 feet wide. The design has two access lanes from the main road allowing traffic to loop through the lot. This would reduce large-vehicle backing and turning issues associated with the existing confined parking lot that has only one access lane. Parking stalls would be oriented at 45 degrees to create better parking separation for drivers.

The existing parking lot would be reconfigured to accommodate 18 regular parking stalls, including one accessible parking stall, and a large vehicle pull-through stall in a separate parking lot (see Little Beaver Trailhead Alternative Parking Area map on page 21).

Road Material Source and Staging Area

The estimated amount of fill needed for the proposed improvements is about 175 cubic yards. The park would acquire the material from an unspecified commercial source(s) outside the park boundary and inland buffer zone. Weed-free material sources will be sought. If weed-free sand, rock, and gravel sources cannot be located, the contractor may be required to scrape away topsoil at the borrow sites and/or acquire material with minimum seed exposure.

Equipment and material staging and storage as well as construction vehicle turnarounds would be confined to the road, trailhead parking lot, or campground. Attempts would be made to schedule construction activities during the off-season to minimize impacts on visitors. The road, trailhead parking lot, and campground may be temporarily closed during the main construction phases. Campground and parking lot construction would be staggered so both are not closed at the same time.



Details:
-18 Parking stalls (including 1 Accessible stall)
-Large vehicle pull-through area

Pros and Cons:
-Uses most of the existing parking area footprint
-One-way turning radius in parking area

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

In accordance with D.O. 12, the NPS is required to identify the "environmentally preferable alternative." The environmentally preferable alternative is determined by applying the criteria suggested in NEPA, which is guided by the CEQ. The CEQ provides direction that "[t]he environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in Section 101 of NEPA, which considers:

1. fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations
2. assuring for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings
3. attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences
4. preserving important historic, cultural, and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice
5. achieving a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities
6. enhancing the quality of renewable resources and approaching the maximum attainable recycling of depletable resources" (NEPA, section 101)"

While alternative A, the no action alternative, would preserve existing conditions, it would not be considered the environmentally preferable because it would not fulfill criteria1, 2, 3, 5, and 6 as effectively as alternatives B and C. Alternative B would not cause any new impacts to the campground and the trailhead parking lot; therefore, it would fulfill criteria 1 and 4 better than alternative C. However, alternative C would improve safety on the road and in the campground (criteria 2 and 3), improve the esthetics of the campground (criteria 2), and achieve a better standard of living for visitors by improving the efficiency of the campground and the trailhead parking lot (criteria 5). Therefore, alternative C would be the environmentally preferable alternative.

ALTERNATIVES CONSIDERED BUT REJECTED

An alternative road design that would widen the entire road, increase shoulder widths, and add guard rails was considered but rejected because it would not maintain the rustic character of the road.

Other parking lot design options were considered for the Little Beaver Trailhead. These designs were rejected because they lacked large vehicle parking, created too large a footprint, or did not adequately address traffic flow problems.

MITIGATION MEASURES

The mitigation measures described below would be employed to reduce the adverse effects of either action alternative.

General Measures

The following general measures would be required to help minimize impacts:

- The NPS project manager would be responsible for ensuring that the project remains within the construction limits and parameters established in the compliance documents and that mitigation measures would be properly implemented.
- All protection measures would be clearly stated in the construction specifications/special construction requirements, and workers would be instructed to avoid conducting activities beyond the construction limits as defined by the construction fencing or similar material. This could include necessary temporary structures such as erosion control fencing.
- All tools, equipment, barricades, signs, flagging, stakes, fencing, berms, surplus materials, and rubbish would be removed from the project work limits upon project completion.
- Construction activities and equipment that generate the highest noise levels and potential disturbance, i.e., unloading of rock and gravel, operation of bulldozers or dump trucks would be scheduled for daytime hours (e.g., no major work allowed between dusk and dawn). Operators would be required to properly maintain construction equipment (e.g., mufflers) to minimize noise from use of the equipment.

Natural Resources

The following mitigation measures would be required to reduce impacts on natural resources:

- Erosion and sediment control Best Management Practices (BMPs) stipulated in the Stormwater Pollution Prevention Plan would be carried out as required for the National Pollutant Discharge Elimination System (NPDES) permit to be obtained for this project.
- Construction zones outside of the existing disturbed area would be identified and delineated with flagging or fencing prior to any construction activity. The flagging or fencing would define the construction limits and confine activity to the minimum area required for construction.
- Fuel storage areas would be bermed and lined to contain spills. Provisions would be made for the containment and disposal of oil-soaked or contaminated soils. Construction equipment would be regularly inspected and maintained to prevent any fluid leaks. Crews would promptly clean up any leakage or accidental spills from construction equipment, such as hydraulic fluid, oil, or antifreeze. In the unlikely event of an accidental large spill in the lakeshore during transportation to and within the project area or during construction, mitigation would be according to the lakeshore oil/hazardous substance spill procedures.
- Dust control would occur as needed on active work areas where soil or fine particles are exposed. Operators would avoid leaving vehicles idling for more than five minutes when parked or not in use. Construction debris would be hauled from the lakeshore to an appropriate disposal location.

- To reduce the potential for wildlife/human conflicts food, litter, and other attractants would be stored and handled in a way that does not attract bears and other wildlife. All litter and food would be stored in wildlife-proof containers.
- Sediment traps, temporary earthen berms, temporary water bars, stone check dams, or other equivalent measures would be installed to control erosion and reduce sediment loading into nearby water or wetlands. Erosion-control measures would be regularly inspected during the construction period to ensure that they are properly installed and functioning effectively.
- Construction waste and excess excavated materials would be stored away from drainages and wet areas to avoid contaminating water.
- Water needed for construction and dust control would come from water sources outside of the lakeshore. Untreated water would be treated with appropriate chemicals to prevent the spread of aquatic nuisance species or fish pathogens.
- All trucks hauling road material into the lakeshore would be covered to prevent spread of non-native vegetation and reduce dust.
- Construction equipment would be pressure washed or steam cleaned prior to its initial use at the lakeshore.
- Where feasible, topsoil would be removed from areas of construction and stored for later reclamation use. The topsoil would be redistributed as near the original location as possible and supplemented as needed with scarification, mulching, seeding, and/or planting with species native to the immediate area.
- A revegetation plan would be developed for the project area with the objectives of protecting cut slopes and stabilizing fill slopes, accelerating recovery of disturbed areas, and maintaining the existing closed canopy along the road corridor. Reclamation work would begin immediately after construction was completed. Surface treatment could include grading to natural or stable contours, scarifying, spreading topsoil, mulching, seeding, and planting.
- Trees may be planted mid-slope on some fill areas to stabilize soil, replace any hazard trees removed from road-side, and restore the canopy cover, where needed, over time. Tree stock would be from genetic stocks indigenous to the area.
- Because disturbing soil increases the likelihood of non-native plant invasion and erosion, the reclaimed areas would be frequently monitored to learn if reclamation efforts are successful or if additional remedial actions are necessary. Remedial actions could include additional installation of erosion control material, reseeding, replanting, and/or treating noxious weeds. Disturbed sites that were not actively reclaimed would also be monitored for up to three years following construction to identify growth of noxious weeds and non-native vegetation. Treatment of non-native vegetation would be completed in accordance with NPS–13, *Integrated Pest Management Guidelines*.
- Where feasible existing fill, rock, or topsoil that may have been excavated from the project area would be used as part of the project. If not possible, then material from outside sources that has been inspected and approved as weed-free would be obtained.
- If weed free sand, rock, and gravel sources cannot be located, the contractor may be required to scrape away topsoil at the borrow site and/or acquire material with minimal seed exposure.

- Construction equipment would be pressure washed or steam cleaned prior to its initial use at the lakeshore.

Visitor Experience

The following mitigation measures would be required to reduce impacts on visitor experience:

- Visitors to the Beaver Basin and wilderness area would be notified when construction would occur and information would be posted in neighboring communities, on the lakeshore website, and at visitor centers.
- Construction would be phased to occur during the off-season to minimize impacts on visitors.

Cultural Resources

The following mitigation measures would be required to reduce impacts on cultural resources:

- Should unknown archeological resources be uncovered during construction, work would be halted in the discovery area, the site secured, and the appropriate Pictured Rocks National Seashore staff would consult with the MI SHPO and affiliated tribes, if necessary, according to 36 CFR 800.13 and, as appropriate, provisions of the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA).
- In compliance with the NAGPRA, the NPS would also notify and consult concerned American Indian tribal representatives for the proper treatment of human remains, funerary, and sacred objects should these be discovered during the project.
- Archeological specimens found within the construction area would be removed only by the NPS or their designated representatives.
- Contractor-selected, noncommercial areas outside of the project limits, including but not limited to material sources, disposal sites, waste areas, haul roads, and staging areas, would not encroach upon sites listed or eligible for listing in the National Register of Historic Places (NRHP). Written proof satisfactory to the NPS and the MI SHPO shall document, for compliance with Section 106, that no historic properties would be affected because:
    - there are no historic resources present or
    - there is no effect to historic properties present.

Health and Safety

The following mitigation measures would be required to reduce impacts on health and safety:

- Visitors and NPS staff (other than project participants) would not be allowed to access the construction site. Emergency vehicles would be allowed on site if needed.

TABLE 1: REHABILITATE LITTLE BEAVER LAKE ROAD – SUMMARY OF ALTERNATIVES			
	Alternative A No Action	Alternative B Minimum Action	Alternative C NPS Preferred Alternative
OBJECTIVES AND ACTIONS			
Objectives 1 and 2: Improve road safety and driving conditions and reduce long-term road maintenance needs.	Action: Continue to repair and maintain road as needed. Does not meet objectives.	Action: Correct surface subgrade and drainage problems on 3.0 miles, reduce slopes on shoulders and fill, realign and widen road at sharp curve, repair uneven passing zones, replace deficient culverts, protect cut slopes, maintain road as needed. A return lane to H-58 vehicle turnaround area would be upgraded from a pre-existing logging road at the junction of Little Beaver Lake Road and H-58 (See Little Beaver Lake Road Large Vehicle Turnaround Layout on page 18). Meets objectives.	Action: Same as Alternative B.
Objective 3: Provide more and efficient parking to meet current and future demands.	Action: Continue to maintain existing campground and trailhead parking lot. No action taken to increase parking or turnaround space. Does not meet objectives.	Action: Continue to maintain existing campground and trailhead parking lot. A 4 to 6-inch layer of crushed gravel would be placed on the surface of travel lanes and parking spaces in existing campground and parking lot. Efficiency of traffic flow and greater capacity for parking would not occur. Does not meet objective.	Action: Modify 5 existing campground parking spaces, move one campsite, reconfigure center traffic island, and add parking for 2 vehicles. Reconfigure parking at trailhead parking lot to include a vehicle lane loop and improve parking efficiency for 18 vehicles for current demand, including one accessible stall, and one large vehicle pull-through area. Meets objective.
IMPACTS			
Soils	No new soil disturbance. Inadequate road surface and drainage conditions would continue to need maintenance contributing to minor long-term adverse impacts on soil. Cumulative effects would also be long-term adverse. No lakeshore impairments.	Up to 0.41 acres of soil disturbed. With mitigation measures the adverse effects would be minor both in the short and long-term, as the sandy soils would take more than a year to stabilize after the construction phase. Ultimately, the improved road drainage, stabilized cut and fill slopes, and reduced need for routine maintenance would have a beneficial impact. Cumulative effects on soils would be short-term minor adverse, and both adverse and beneficial in the long term. No lakeshore impairments.	Same as under alternative B, except that campground and parking lot modifications would disturb an additional 0.56 acre and reclaim between 0.07 and 0.10 acre. With mitigation measures the adverse effects would be minor in both the short and long-term., until soils were stabilized after construction. Ultimately, improved road drainage, stabilized cut and fill slopes, improved parking, improved efficiency of the parking lot and campground, and reduced need for routine maintenance would have a beneficial impact on soils. No lakeshore impairments.
Visitor Use and Experience	Moderate long-term adverse impacts on visitor use and experience. Cumulative impacts would be short-term minor adverse and long-term moderate adverse.	Short-term minor adverse impacts, but beneficial long-term impacts on visitor use and experience. Cumulative impacts would be short-term minor adverse and long-term beneficial.	Same as Alternative B.
Health and Safety	Moderate long-term adverse impacts on health and safety. Cumulative impacts would be short-term minor adverse and long-term moderate adverse.	Short-term minor adverse impacts, but beneficial long-term impacts on health and safety. Cumulative impacts would be short-term minor adverse and long-term beneficial.	Same as Alternative B.

AFFECTED ENVIRONMENT

A summary of the resources that may be impacted from the proposed project are described below.

LOCATION AND GENERAL DESCRIPTION OF THE LAKESHORE

Pictured Rocks National Lakeshore is located in the north-central region of Michigan's Upper Peninsula, on the south shore of Lake Superior. The national lakeshore was established by Congress in October 1966 to preserve a 42-mile section of shoreline between the communities of Munising and Grand Marais. Major destinations for visitors include the Pictured Rocks cliffs, which stretch for 15 miles along Lake Superior from near Sand Point to beyond Spray Falls, and the white sands of Twelvemile Beach. Other notable natural features are the Grand Sable Dunes, which rise high above the lake near Grand Marais, and several inland lakes, including Chapel and the Beaver Lakes. The North Country Scenic Trail, which extends between Munising and Grand Marais, is part of a larger route that links natural and cultural areas in seven states, allowing hikers to experience a variety of landscapes. When completed, it will be the longest continuous hiking trail in the United States.

The four visitor centers (Interagency, Grand Sable, Miners Castle, and Munising Falls) and the Au Sable Lighthouse and Maritime Museum are mainly open during the summer season. Lakeshore headquarters at Sand Point in Munising is open year round. There are three rustic drive-in campgrounds within the national lakeshore: Little Beaver Lake, Twelvemile Beach, and Hurricane River. These campgrounds may be used year round, although access roads may not be plowed in winter.

The primary mode of transportation to the lakeshore is the private automobile. The GMP EIS states that about 70% of the total national lakeshore visitors use at least part of the unimproved section of Alger County Road (H-58), which is the main connector to Little Beaver Lake Road. The Beaver Basin Wilderness, encompassing approximately 11, 739 acres, is managed as a primitive area under the lakeshore GMP. The area within the basin that surrounds the Little Beaver Lake Road and Campground and Little Beaver Trailhead is also managed as a primitive area, but is outside the wilderness boundary. The Beaver Basin Wilderness boundary follows township, range, and section lines falling within 250 to 1,200 feet of the Little Beaver Lake Road and Campground and Little Beaver Trailhead.

Little Beaver Lake Road provides the only vehicular access to Little Beaver Lake Campground and Little Beaver Trailhead. It is a scenic, narrow low-speed gravel road that is cut along the western edge of Beaver Basin. The road is steeply sloped in places with several sharp curves. It passes through wetlands and northern upland hardwoods. The Little Beaver Trailhead parking lot, which provides parking for the Little Beaver Trail, is on Little Beaver Lake Road approximately 2.75 miles north of the H-58 intersection. The campground is at the northern terminus of Little Beaver Lake Road on Little Beaver Lake. A small ramp is available at the campground for launching boats.

SOILS

Healthy soil is essential for clean air and water, productive forests and prairie, diverse wildlife, and natural landscapes. Primary soil functions include regulating water flow, sustaining plant and animal life, filtering potential pollutants, and supporting human-built structures such as roads.

Soils in Alger County, including the project area, have been surveyed and mapped (see Soils Map for Little Beaver Lake Corridor on page 29). The Natural Resources Conservation Service generated a detailed report with classifications and descriptions of soil within the Little Beaver Lake Road corridor (Natural Resources Conservation Service 2009). Key soil attributes and limitations for each soil map unit described in this report are listed in Table 2.

Soils in the project area are primarily sand and gravel covered with a few inches of highly decomposed plant material. The sandy-gravelly soils are mostly glaciofluvial deposits formed from material moved by glaciers that was subsequently sorted and deposited by streams flowing from the melting ice. These soils are well drained with infiltration rates exceeding 12 inches per hour. The trailhead parking lot, campground area, and 1.59 miles of road are on soils that have an erosion hazard index rating of "slight," indicating little to no potential for erosion. About 0.30 miles of road are on soils rated as "moderate" and 1.06 miles of road are on soils rated as "severe" and considered poorly suited for roads because of sandiness and slopes greater than 15 % (see Table 2). About 1.06 miles of road are on relatively steep terrain with slopes ranging between 15 and 70 percent, resulting in some wide road cut and fill areas. Soil erosion is expected or likely for these road sections and typically requires regular maintenance and erosion control measures.

VISITOR USE AND EXPERIENCE

Statistics indicate the number of visits to Pictured Rocks National Lakeshore has remained relatively steady, totaling 398,774 in 2008. About 40% of these visits occur in July and August. The Pictured Rocks National Lakeshore Visitor Study completed in 2002 cited the most common activities of visitor groups as sightseeing (78%), beach activities (67%), day hiking (66%), and enjoying solitude/quiet (65%). Active recreational activities include backpacking, bicycling, boating, hiking, camping, fishing, hunting, kayaking, swimming, cross country skiing, ice climbing, snowmobiling, and snowshoeing. Backcountry camping is available by permit, but campers must stay in designated backcountry campgrounds along the North Country Scenic Trail.

The central portion of the park, including the Beaver Basin Wilderness Area, is managed as a primitive area under the lakeshore GMP. Lands within this management prescription offer the visitor a sense of immersion in nature and a minimum of noise or visual intrusion. Little Beaver Lake Road is a corridor not included in the primitive area and extends along the western edge and into the basin. It is a 3.0-mile rustic, gravel road that meanders through a woodland setting to its terminus at Little Beaver Lake. Visitors travel through a picturesque mixture of wetlands and upland forested slopes dominated by beech, sugar maple, red maple, yellow birch, hemlock, and white pine. The narrow roadbed and sharp curves limit road speeds. In some sections, the road is only about 12 feet wide, and vehicles must use informal passing zones when oncoming traffic is encountered. It is not currently a heavily traveled road, and although the roadbed is graded on a regular basis, the roadbed often has bumps and becomes "washboarded." Approximately one mile north of the County Road H-58 intersection, a particularly sharp one lane curve with extremely limited line-of-sight creates a hazard for oncoming vehicles. Steep drop-offs are characteristic along portions of the road shoulder. Periodic re-grading has caused unsightly erosion and deeper slope cutting in some sections. Road sub-grade instability and inadequate drainage have also caused water to collect on the surface, making travel more difficult in inclement weather.

Between 30 and 50 vehicles travel Little Beaver Lake Road each day. The road provides access to parking at the Little Beaver Trailhead for the Little Beaver Trail, a 0.7 -mile trail that includes a stately stand of 250-300 year old white pines. The Little Beaver Trailhead

currently serves as parking for both overnight and day use backpackers. The lot has a 20-vehicle capacity, but this area does not have defined parking spaces. Turning and maneuvering is difficult for larger vehicles. Little Beaver Lake Campground also has poor traffic flow. Large recreational vehicles are not recommended for the campground due to the small campsites and the narrowness of Little Beaver Lake Road. The campground has eight campsites adjacent to the lake, including one disabled accessible. There are vault toilets, picnic tables, fire rings, and water. Campsites are rustic and do not have electric, telephone, water, or sewer hookups. The campsites are generally well placed and offer some seclusion, with the exception of campsite #8. This site lacks adequate vegetative screening for privacy.

A small ramp is available for launching boats, with parking available adjacent to the ramp. This parking lot has five spaces, but cannot accommodate more than two vehicles with boat trailers. Electric motors are permitted on Little Beaver Lake and Beaver Lake. Currently, there is no adjacent parking space or pull-off in proximity to the vault toilet and trash receptacles.

HEALTH AND SAFETY

The NPS is committed to providing appropriate, high-quality opportunities for visitors and employees to enjoy the parks in a safe and healthful environment. The goals of the national lakeshore include ensuring basic visitor needs are met in keeping with the national lakeshore purposes, and that visitor and employee safety and health are protected. To the extent feasible, facilities, programs, and services in the national lakeshore are accessible to and usable by all people, including those with disabilities (NPS 2004b).

The rustic characteristics of Little Beaver Lake Road make it suited for low volume traffic flow with slow travel speeds. This works well for tourists and visitors using the road to access lakeshore facilities, including the campground and trailhead. It is a lakeshore road and is not an essential element of the local or county traffic patterns. However, the volume and types of public use have increased since the establishment of the national lakeshore and are expected to increase slightly with the upgrade of County Road H-58. Little Beaver Lake Road pre-dates the establishment of the national lakeshore and was not constructed to currently accepted standards for the volume and type of public use the road currently receives.

Little Beaver Lake Road is a meandering, narrow, gravel road running through intermittently steep terrain. Health and safety concerns associated with the rehabilitation of Little Beaver Lake Road include the narrowness of the roadbed and difficulty of passing oncoming vehicles. There are some places along the road where vehicles must pull over before they meet another vehicle to allow it to pass. Other issues are the impediments to sight distance in certain sections of the road corridor and possible collision hazards due to sharp curves and trees on the road shoulder. Only a few locations along the ¼ mile section of road below the sharp curve exist where drivers can safely pull around oncoming vehicles, and the road subsurface in these informal passing zones is soft and unstable. Little Beaver Lake Road was narrowly cut into a steep slope where the road descends into Beaver Basin. While the sandy substrate is stable, this steep slope exists immediately adjacent to and in some places into the road. Erosion has impacted the embankments in some areas.

Parking at Little Beaver Trailhead is inadequate because the stalls are not delineated. Traffic moves in and out of the trailhead parking lot through one access. Vehicles with trailers take a disproportionate amount of parking spaces, as well as having to back out of the access driveway when the lot is full. Longer vehicles and vehicles pulling trailers have the most difficulty navigating in the lot. There is no designated accessible parking.

During peak visitation periods on Little Beaver Lake Road, overflow vehicles park along the road shoulder, creating a potential safety issue for other vehicles and for pedestrians who must walk along the road to reach the trailhead or campground. Also, the existing road hazard signage is inadequate.

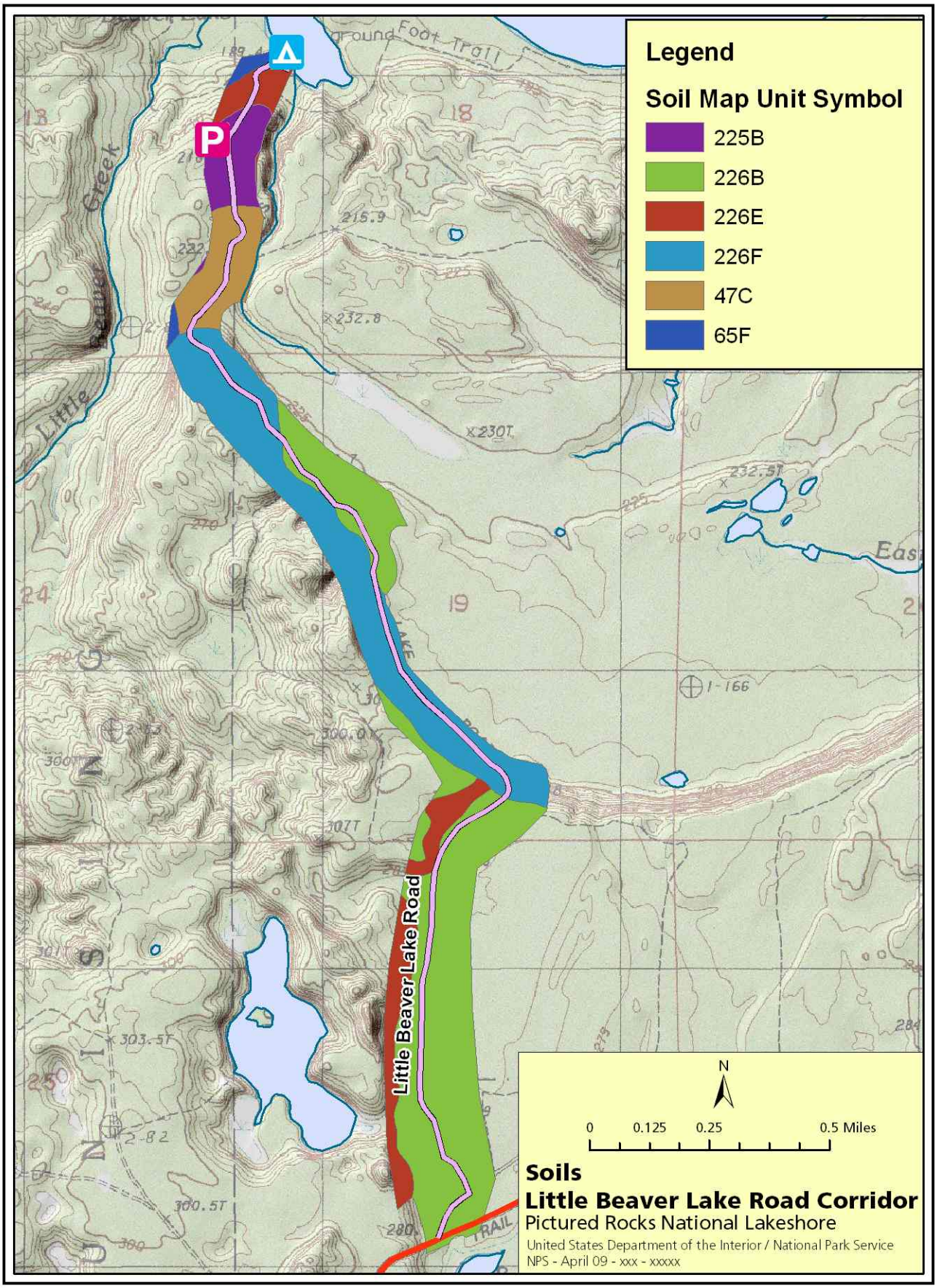

Legend
Soil Map Unit Symbol
225B
226B
226E
226F
47C
65F
Little Beaver Lake Road
N
0
0.125
0.25
0.5 Miles
Soils
Little Beaver Lake Road Corridor
Pictured Rocks National Lakeshore
United States Department of the Interior / National Park Service
NPS - April 09 - xxx - xxxxx

TABLE 2. SUMMARY OF SOIL ATTRIBUTES FOR LITTLE BEAVER LAKE ROAD CORRIDOR

Map Unit Symbol	47C	65F	225B	226B	226E	226F
Map Unit Name	Deerton-Au Train complex, 1 to 15% slopes	Jeske-Gongeau-Deerton complex, bedrock terrace, 1 to 45% slopes	Cusino-Loamy Sand, 1 to 6% slopes	Kalkaska-Cusino complex, 1 to 6% slopes	Kalkaska-Cusino complex, 15 to 35% slopes	Kalkaska-Cusino complex, 35 to 70% slopes
Parent Material	Sandy glaciofluvial deposits and/or sandy residuum.	Sandy glaciofluvial deposits and/or sandy residuum	Sandy and gravelly outwash	Sandy glaciofluvial deposits / sandy & gravelly outwash	Sandy glaciofluvial deposits / sandy & gravelly outwash	Sandy glaciofluvial deposits / sandy & gravelly outwash
Organic Matter Content in Surface Horizon	75%	Jeske – 75% Gongeau – 82% Deerton – 75%	75%	Kalkaska – 3% Cusino – 75%	Kalkaska – 3% Cusino – 75%	Kalkaska – 3% Cusino – 75%
Depth to Root Restrictive Layer, Bedrock, or Paralithic	Deerton – 20-40” Au Train – 10-20”	Jekse – 10 to 23” Gongeau – 10-20” Deerton – 20-40”	>60”	>60”	>60”	>60”
Drainage Class	Excessively drained	Somewhat poorly drained	Somewhat excessively drained	Somewhat excessively drained	Somewhat excessively drained	Somewhat excessively drained
Saturated Hydraulic Conductivity (micrometers/second)	High 90	High 90	High 90	High 92	High 92	High 92
Erosion Hazard (road and trail)1	Moderate	Slight	Slight	Slight	Severe	Severe
Suitability for Roads (natural surface)	Moderately suited	Poorly suited	Well suited	Moderately suited	Poorly suited	Poorly suited
Construction Phase Affecting Soils	Road rehabilitation (0.30 miles)	Campground modification	Trailhead parking expansion & road rehabilitation (0.22 miles)	Road rehabilitation, (1.37 miles)	Road rehabilitation, (0.18 miles)	Road rehabilitation, (0.88 miles)

[1]“slight” means little or no erosion is likely; “moderate” means some erosion is likely, roads may require occasional maintenance and simple erosion controls needed; “severe” means substantial erosion is expected, roads require frequent maintenance and erosion controls needed.

ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This section describes the potential environmental consequences associated with the three alternatives. The methodologies and assumptions for assessing environmental consequences are discussed, including consideration of context, intensity, and duration of impacts; cumulative impacts; and measures to mitigate impacts. As mandated by NPS policy, resource impairment is explained and then assessed for each impact topic and alternative. Subsequent subsections in this section are organized by impact topic, first for the no-action alternative and then for the two action alternatives.

METHODOLOGY

Overall, the NPS based these impact analyses and conclusions on the review of existing literature and Pictured Rocks National Lakeshore studies, information provided by experts at the lakeshore and in other agencies, professional judgments and lakeshore staff insights, and public input.

Context, Duration and Intensity, and Type of Impact

Potential impacts (direct, indirect, and cumulative effects) are described in terms of type (beneficial or adverse), context (site-specific, local, or even regional), duration (short-term, long-term, or permanent), and intensity (negligible, minor, moderate, or major). Because definitions of intensity and duration vary by impact topic, intensity definitions and duration are provided separately for each impact topic analyzed in this document.

Context. Context is the setting within which an impact may occur, such as local, lakeshore-wide, or regional. The CEQ requires that impact analyses include discussions of context. For this EA/AoE, local impacts would occur within the general vicinity of Little Beaver Lake Road, while lakeshorewide impacts would affect a greater portion of the lakeshore, and regional impacts would extend outside the boundaries of the lakeshore.

Duration. The duration of an impact is the time period for which the impacts are evident and are expressed as short-term or long-term. A short-term impact would be temporary in duration and would be associated with road construction activities as well as the period of site restoration. Depending on the resource, impacts may last as long as construction takes place, or a single year or growing season, or longer. Impact duration for each resource is unique to that resource. Impact duration for each resource is presented in association with impact intensities in the following section.

Intensity. Impact intensity is the degree to which a resource would be beneficially or adversely affected. The criteria that were used to rate the intensity of the impacts for each resource topic is presented later in this section under each topic heading.

Type of Impact. Impacts can be beneficial or adverse. Beneficial impacts would improve resource conditions while adverse impacts would deplete or negatively alter resources.

Direct versus Indirect Impacts

Both direct and indirect impacts are analyzed, consistent with CEQ regulations (40 CFR 1502.16 and D.O. 12). The following definitions of direct and indirect impacts are used during analysis but not specifically identified in the environmental analysis:

Direct – an effect that is caused by an action and occurs at the same time and in the same place.

Indirect – an effect that is caused by an action that is later in time or farther removed in distance, but is still reasonably foreseeable.

CUMULATIVE EFFECTS

The CEQ regulations, which implement NEPA (1969) (42 USC 4321 *et seq*.), require assessment of cumulative impacts in the decision making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for all alternatives, including the no-action alternative.

Cumulative impacts were determined by combining the impacts of the alternatives with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects at Pictured Rocks National Lakeshore and, if applicable, the surrounding region.

County Highway H-58 is the main access road for the Pictured Rocks National Lakeshore. This road has been rehabilitated and paved near where it intersects the project road. Therefore, this action combined with the proposed action could result in cumulative effects. The lakeshore management prescription for the area surrounding the road, trailhead parking lot, and campground has been designated “primitive.” Because this is the most natural of prescriptions, with the exception of routine maintenance there are no other past, present or future actions that would have cumulative effects.

IMPAIRMENT OF PICTURED ROCKS NATIONAL LAKESHORE RESOURCES OR VALUES

In addition to determining the environmental consequences of the NPS preferred and other alternatives, the 2006 *NPS Management Policies* and D.O. 12, require analysis of potential effects to determine if actions would impair Pictured Rocks National Lakeshore resources.

The fundamental purpose of the national park system, established by the 1916 Organic Act and reaffirmed by the 1970 General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid or minimize, to the greatest degree practicable, adverse impacts on park and monument resources and values. However, the laws do give NPS management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values. That discretion is limited by statutory requirements that the NPS must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including opportunities that otherwise would be present for the enjoyment of those resources or values. An impact to any park resource or value may constitute impairment. However, an impact would more likely constitute impairment to the extent that it affects a resource or value whose conservation is:

- necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park
- key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park

- identified as a goal in the Pictured Rocks National Lakeshore final GMP or other relevant NPS planning documents

Impairment may result from NPS activities in managing the park, visitor activities, or activities undertaken by concessioners, contractors, and others operating in the park.

In this "Environmental Consequences" section, a determination on impairment is made in the conclusion statement of each impact topic under each alternative. The NPS does not analyze recreational values / visitor experience (unless impacts are resource based), socioeconomic values, health and safety, or park operations for impairment.

ENVIRONMENTAL ANALYSIS

IMPACTS ON SOIL

The 2009 NRCS Custom Soil Resource Report for the Little Beaver Lake Road Corridor was used to determine soil type and limitations in the project area. The level of soil disturbing activities and the area of disturbed soil among the alternatives were compared. The threshold of change for the intensity of an impact for each alternative was qualitatively assessed using the following definitions:

- *Negligible* -The action would result in a change in a soil, but the change would be at the lowest level of detection, or not measurable.
- *Minor* - The action would result in a detectable change, but the change would be slight and local. There could be changes to a soil's surface in a relatively small area, but the change would not increase the potential for erosion by water and wind.
- *Moderate* - The action would result in a clearly detectable change in a soil. There could be a loss or alteration of the soil in a small area, or an increase in the amount of bare ground, and would increase the potential for erosion by water and wind.
- *Major* - The action would result in the permanent loss or alteration of soils in a relatively large area, or there would be a strong likelihood for erosion to remove large quantities of additional soil as a result of the action.

For the following analysis, short-term impacts are defined as those that occur during active construction and reclamation activities. Long-term impacts are those that occur after construction and related activities are completed.

Alternative A: No Action

The no-action alternative continues with actions that the lakeshore is currently implementing. These actions include grading roads and parking lots, cleaning culverts and drainage ditches, and occasional road repair. No action would be taken to improve the road, trailhead parking, or campground. As a result there would be no new soil disturbance.

Roads, parking lots, and campgrounds can cause detrimental soil compaction, which reduces infiltration of surface water into the soil column. During rain or snowmelt, decreased infiltration capacity increases the amount of sheet erosion, which can lead to rill and gully formation. Roads on steeper slopes, like the project road, can intercept subsurface and overland stormflows changing rills and streamlets into artificial flow networks that move water and soil. Traffic on unpaved roads can also accelerate erosion rates by increasing the availability of fine particles, as vehicles break down larger particles and "pump" finer particles to the surface. Vehicle traffic also creates ruts and potholes that contribute to surface erosion. As a result, the project road needs frequent maintenance. The steeper road sections with soils having a "severe" erosion hazard rating require the most maintenance.

Road grading on these sections often scrapes the base of side slopes resulting in unstable cut slopes with exposed soils. Over the long term, the regular road maintenance activities under the no-action alternative would cause some soil loss resulting in minor adverse impacts.

The trailhead parking lot and campground are on relatively flat areas with an erosion rating of "slight." Therefore maintaining parking and campground surfaces would have minimal or minor adverse effects on soils. The no-action alternative would have long-term, minor adverse impacts on soils.

Cumulative Impacts. Construction work scheduled for County Road H-58 near the project area would have short-term impacts on soil. Mitigation to control erosion and sediment during construction would minimize these impacts. This project would improve road drainage, protecting slopes, and decrease routine road maintenance needs resulting in long-term beneficial effects. However, improving H-58 could also encourage more people to travel on H-58 and the project road. The increased vehicle traffic on the Little Beaver Lake Road could potentially accelerate surface erosion and increase road maintenance frequency resulting in minor long-term adverse cumulative effects.

Conclusion. Alternative A would not cause any new soil disturbance. Inadequate road surface and drainage conditions would continue to need frequent maintenance contributing to long-term minor adverse impacts on soil. Cumulative effects would also be long-term minor adverse. There would be no impairment of lakeshore resources or values.

Alternative B: Minimum Action

Road rehabilitation under Alternative B including realigning and widening the curve located 1.0 mile north of County Road H-58 and widening three passing zones would disturb up to 0.41 acre on soils with a "severe" erosion hazard rating (see Table 2). Mitigation measures would help reduce adverse short-term impacts to minor. Road work on the remaining 2.59 miles of road would be limited to correcting subgrade and drainage problems causing short-term minor effects on soil with a "moderate" or slight" erosion rating. The impacts would include earthwork, grading, recontouring, compacting, removing topsoil, and burying with 125 cubic yards of fill material from outside sources.

Improving drainage by cutting ditches parallel to the road, replacing damaged culverts, replacing passing zone road base and resurfacing the road with coarse gravel would have beneficial long-term effects on reducing erosion and soil loss along the road corridor. Revegetating disturbed areas, installing mechanically stabilized earth walls on steep fill areas and installing rock footers to stabilize steep cut areas would also have beneficial effects. This would offset the adverse long-term effects caused by a slight increase in area disturbed under this alternative.

The return lane to H-58 would make use of a pre-existing private logging road that already connects Little Beaver Lake Road and H-58. The lakeshore would take over road maintenance responsibilities.

Mitigation measures described under the alternatives section would help reduce soil loss or contamination from accidental spills or leakage of deleterious material during construction. After construction, disturbed areas next to the road would be immediately regraded and covered with stockpiled soil to help accelerate revegetation and prevent soil erosion. These mitigation measures would reduce the potential for soil erosion in the project area decreasing the adverse short-term impacts of Alternative B to minor. These adverse impacts to soils would continue in the long term (longer than a year), due to the length of time needed for these sandy soils to recover and stabilize after the construction period. However, the long-term effects on soils would also be beneficial due to an overall reduction in erosion.

Cumulative Impacts. Construction work scheduled for County Road H-58 near the project area would cause minor short-term soil impacts similar to the proposed action. Like the proposed action, mitigation to control erosion and sediment during construction would help minimize impacts associated with the H-58 road project. Both road projects would reduce future long-term impacts on soils by improving road drainage, protecting slopes, and decreasing routine road maintenance needs. This would off-set the minor long-term adverse effects caused by increasing the overall area disturbed. Thus the combined effects of both road projects would have minor short-term cumulative adverse effects and both negative and beneficial long-term effects on soils.

Conclusion. Actions under Alternative B would disturb soil on up to 0.41 acres. With mitigation measures the adverse effects would be minor and short-term, and continue to be minor in the long-term (more than a year). However, improved road drainage, stabilized cut and fill slopes, and reduced need for routine maintenance would also have a long-term beneficial impact on soils. Short-term adverse cumulative effects on soils would be minor. Long-term minor cumulative effects would be both adverse and beneficial. There would be no impairment of lakeshore resources or values.

Alternative C: Preferred Alternative

Alternative C impacts on soils for the road rehabilitation would be the same as under Alternative B.

Proposed campground modifications would cause minor short- and long-term adverse effects on 0.06 acre of soils with a "slight" erosion rating. The old campsite #8 and the reconfigured parking island would be revegetated to reclaim about 0.04 acre.

Proposed trailhead parking lot modifications would disturb 0.30 to 0.50 acre beyond the existing parking lot causing a minor short- and long-term adverse effect on soils with a "slight" erosion rating. Between 0.03 and 0.06 acre of existing disturbance would be revegetated.

The oversized-vehicle turnaround area would make use of a pre-existing private logging road that already connects Little Beaver Lake Road and H-58. The lakeshore would take over road maintenance responsibilities.

Mitigation measures described under the alternatives section would help reduce soil loss or contamination from accidental spills or leakage of deleterious material during construction. After construction, disturbed areas next to the road, trailhead parking lot and campground would be immediately regraded and covered with stockpiled soil to help accelerate revegetation and prevent soil erosion. These mitigation measures would reduce the potential for soil erosion in the project area decreasing the adverse short-term impacts of Alternative C to minor. These adverse impacts to soils would continue in the long term (longer than a year), due to the length of time needed for these sandy soils to recover and stabilize after the construction period. However, the long-term effects on soils would also be beneficial, due to an overall reduction in erosion.

Cumulative impacts. The cumulative impacts would be the same as Alternative B, except there would be slightly more area of native soil disturbed.

Conclusion. Alternative C impacts on soils would be the same as under Alternative B, except that the campground modification would disturb 0.06 acre of soils and reclaim 0.04 acre, and the parking lot modification would disturb up to 0.50 acre of native soils and between 0.03 and 0.06 acre would be reclaimed. With mitigation measures the adverse effects would be minor and short-term, and continue to be minor in the long-term (more than a year). However, improved road drainage, stabilized cut and fill slopes, and reduced need for routine maintenance would also have a long-term beneficial impact on

soils. Short-term adverse cumulative effects on soils would be minor. Long-term cumulative effects would be both adverse and beneficial. There would be no impairment of lakeshore resources or values.

IMPACTS ON VISITOR USE AND EXPERIENCE

NPS *Management Policies 2006* state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks, and that the NPS is committed to providing appropriate, high-quality opportunities for visitors to enjoy the parks.

Part of the purpose of the Pictured Rocks National Lakeshore is to offer opportunities for recreation, education, inspiration, and enjoyment. Consequently, one of the lakeshore's management goals is to ensure that visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of lakeshore facilities, services, and appropriate recreational opportunities.

Public scoping and observation of visitation patterns combined with assessment of what is available to visitors under current management were used to estimate the effects of the actions in the various alternatives in this document. The impact on the ability of the visitor to experience a full range of national lakeshore resources was analyzed by examining resources and objectives presented in the lakeshore significance statement. The potential for change in visitor use and experience proposed by the alternatives was evaluated by identifying visitor uses and determining whether or how these projected changes would affect the desired visitor experience and to what degree and for how long. The intensity of impact threshold for each alternative was qualitatively assessed using the following definitions:

- *Negligible* - Changes in visitor use and/or experience would be below or at the level of detection. The visitor would not likely be aware of the effects associated with the alternative.
- *Minor* - Changes in visitor use and/or experience would be detectable, although the changes would be slight. The visitor would be aware of the effects associated with the alternative, but the effects would be slight.
- *Moderate* - Changes in visitor use and/or experience would be readily apparent. The visitor would be aware of the effects associated with the alternative and would likely be able to express an opinion about the changes.
- *Major* - Changes in visitor use and/or experience would be readily apparent and severely adverse or exceptionally beneficial. The visitor would be aware of the effects associated with the alternative and would likely express a strong opinion about the changes.

For the following analysis, short-term impacts are defined as those that occur during active construction and reclamation activities. Long-term impacts are those that occur after construction and related activities are completed.

Alternative A: No Action

Alternative A would have long-term minor adverse impacts. Motorists on Little Beaver Lake Road would continue to experience problems with the deteriorating road surface and lack of visibility due to sharp curves and trees in the road shoulder. Motorists would continue to need to back up and/or pull over on to unstablized and soft shoulder areas along the ¼ mile cut slope area to accommodate oncoming vehicles. The passing zones would remain unstable. The erosion on the embankments and the steep drop-offs on the road shoulder would remain. Inadequate parking conditions and restricted traffic flow at the trailhead and campground would not be improved. Larger vehicles or those towing

boats would continue to have difficulty maneuvering in these areas.

As more of the road surface continues to deteriorate, there would be a moderate adverse effect on visitor use and experience due to the discomfort caused by driving on a rough road. The road, trailhead parking lot, and campground would undergo more frequent maintenance, creating dust generation, noise, and reduced visual quality.

The continued deterioration and increased frequency of maintenance and repairs would convey the impression that the lakeshore is poorly maintained, thus diminishing the overall lakeshore experience. Visitors would be aware of the effects associated with the deteriorating roadway and limited parking and would be likely to express an opinion about the conditions.

Cumulative Impacts. Other past or reasonably foreseeable future actions created or have the potential for impacts on visitor use and experience. The upgrade of County Road H-58 in 2009 and 2010 may result in interrupted traffic flow when construction is ongoing at the Little Beaver Lake Road intersection. In the long term, the upgrade of H-58 is expected to increase the volume of traffic on Little Beaver Lake Road. This would create more opportunities for encountering vehicles on the narrow road and further strain the limited parking at the trailhead and campground. This larger traffic volume would also result in increased maintenance needs for Little Beaver Lake Road and related facilities.

The construction activities on H-58 in addition to the no-action alternative would result in cumulative adverse impacts on visitor use and experience. These impacts would be minor in the short term, but moderate in the long term.

Conclusion. Alternative A would have moderate long-term adverse impacts on visitor use and experience. Cumulative impacts would be short-term minor adverse and long-term moderate adverse.

Alternative B: Minimum Action

Alternative B would have short-term minor adverse impacts on visitor use and experience. Most of the adverse impacts to visitor use would occur due to construction and would be limited to the construction period. Rehabilitation of Little Beaver Lake Road would require that the road be temporarily closed to traffic. Therefore, there would be no opportunity to enjoy the scenic quality and wildlife viewing opportunities afforded by the road. Access to the Little Beaver Trailhead and the Little Beaver Lake Campground and boat launch would also be temporarily denied during construction. However, construction would not occur during the peak usage period to minimize impacts to visitors.

Following construction, visitor experience would be improved and therefore, the long-term impacts would be beneficial. Visitors would have an increased line of sight at the sharp curve and the convenient use of the newly stabilized pullouts on Little Beaver Lake Road. The rustic character of Little Beaver Lake Road would be retained, but visitors would be able to drive comfortably on the newly surfaced roadway. Road maintenance would continue to impact visitor use and experience with noise, delays, and diminished visual quality, but maintenance needs and frequencies would be reduced. Although the driving experience may be slightly noisier due to the newly laid gravel, visitors would travel more comfortably on the improved surface on the road, parking lot, and campground. The vehicle return lane to H-58 would provide added convenience to visitors.

Cumulative Impacts. Other past or reasonably foreseeable future actions created or have the potential for impacts on visitor use and experience. The upgrade of County Road H-58 in 2009 and 2010 may result in interrupted traffic flow when construction is ongoing at the Little Beaver Lake Road intersection. Depending upon the timing, proposed construction under Alternative B could have a short-term minor adverse impact

on visitor use if it is conducted at the same time as the work on H-58. However, in the future, the upgrade of H-58 is expected to increase the volume of traffic on Little Beaver Lake Road. This larger traffic volume would also result in increased maintenance needs for Little Beaver Lake Road and related facilities.

The construction activities on H-58, in addition to the proposed improvements under Alternative B, would result in cumulative short and long-term impacts on visitor use and experience. The cumulative short-term impacts would be minor and adverse during construction, but the long-term impacts to visitor use and experience would be beneficial.

Conclusion. Alternative B would have short-term minor adverse impacts, but beneficial long-term impacts on visitor use and experience. Cumulative impacts would be short-term minor adverse and long-term beneficial.

Alternative C: Preferred Alternative

Alternative C would have short-term minor adverse impacts on visitor use and experience. Most of the adverse impacts to visitor use would occur due to construction, and would be limited to the construction period. Rehabilitation of Little Beaver Lake Road would require that the road be temporarily closed to traffic. Access to the Little Beaver Trailhead and the Little Beaver Lake Campground and boat launch would also be temporarily denied during construction. However, construction would not occur during the peak usage period to minimize impacts to visitors.

Following construction, visitor experience would be improved and therefore, the long-term impacts would be beneficial. The rustic character of Little Beaver Lake Road would be retained, but visitors would be able to drive comfortably on the newly surfaced roadway, Road maintenance would continue to impact visitor use and experience with noise, delays, and diminished visual quality, but maintenance needs and frequencies would be reduced. The reconfigured parking at the Little Beaver Trailhead would improve parking and traffic flow at Little Beaver Trail and would increase parking for larger vehicles up to 24-feet long. The proposed modifications to the campground would include creating a new turnaround, planting vegetative screening between some campsites, cutting of adjacent vegetation and selected trees for additional parking and expanded road edges. Redesigned parking at the boat ramp would also be beneficial, particularly for vehicles hauling trailers. The return lane to H-58 would provide an option for drivers who decide that they do not wish to travel Little Beaver Lake Road.

Cumulative Impacts. Other past or reasonably foreseeable future actions created or have the potential for impacts on visitor use and experience. The upgrade of County Road H-58 in 2009 and 2010 may result in interrupted traffic flow when construction is ongoing at the Little Beaver Lake Road intersection. Depending upon the timing, proposed construction under Alternative C could have a short-term adverse minor impact on visitor use if it is conducted at the same time as the work on H-58. However, in the future, the upgrade of H-58 is expected to increase the volume of traffic on Little Beaver Lake Road. This larger traffic volume would also result in increased maintenance needs for Little Beaver Lake Road and related facilities.

The construction activities on H-58 in addition to the proposed improvements under Alternative C would result in cumulative short- and long-term impacts on visitor use and experience. The cumulative short-term impacts would be minor and adverse during construction, but the long-term impacts to visitor use and experience would be beneficial.

Conclusion. Alternative C would have short-term minor adverse impacts, but beneficial long-term impacts on visitor use and experience. Cumulative impacts would be

short-term minor adverse and long-term beneficial.

IMPACTS ON HEALTH AND SAFETY

The analysis of health and safety considered the effects caused by poor roadway conditions and the ability of lakeshore visitors to access lakeshore facilities along Little Beaver Lake Road.

- *Negligible* -The effects on health and safety would be at the lowest levels of detection and would not have an appreciable effect on health or safety.
- *Minor* - The effect would be detectable but would not have an appreciable effect on health and safety. If mitigation were needed, it would be relatively simple and would likely be successful.
- *Moderate* - The effects would be readily apparent and result in substantial, noticeable effects to health and safety on a local scale. Mitigation measures would probably be necessary and would likely be successful.
- *Major* - The effects would be readily apparent and result in substantial, noticeable effects to health and safety on a regional scale. Extensive mitigation measures would be needed, and success would not be guaranteed.

For the following analysis, short-term impacts are defined as those that occur during active construction and reclamation activities. Long-term impacts are those that occur after construction and related activities are completed.

Alternative A: No Action

Alternative A would have long-term moderate adverse impacts on health and safety. Motorists on Little Beaver Lake Road would continue to experience problems with the deteriorating road surface and lack of visibility due to sharp curves and trees in the road shoulder. Motorists would continue the need to back up and/or pull over on to unstablized and soft shoulder areas along the ¼ mile cut slope area to accommodate oncoming vehicles. The passing zones would remain unstable. The sharpest curve in the road would not be realigned, and sight distance would not improve. The erosion on the embankments and the steep drop-offs on the road shoulder would remain. Parking conditions and traffic flow at the trailhead and campground would not be improved. Larger vehicles or those towing boats would continue to have difficulty maneuvering in these areas. In the long term, as more of the road surface continues to deteriorate, there would be a moderate adverse effect on health and safety. The road, trailhead parking lot, and campground would undergo more frequent maintenance.

Cumulative Impacts. Other past or reasonably foreseeable future actions created or have the potential for impacts on safety. The upgrade of County Road H-58 in 2009 and 2010 may result in interrupted traffic flow and possible safety concerns when construction is ongoing at the Little Beaver Lake Road intersection. In the long term, the upgrade of H-58 is expected to increase the volume of traffic on Little Beaver Lake Road. This would create more opportunities for encountering vehicles on the narrow road. The limited ability for vehicles to turn and maneuver safely at Little Beaver Trailhead and the campground would be further strained by increased demand. This larger traffic volume would also result in increased maintenance needs for Little Beaver Lake Road and related facilities.

The construction activities on H-58 in addition to the no-action alternative would result in cumulative adverse impacts on health and safety. These impacts would be minor in the short term, but moderate in the long term.

Conclusion. Alternative A would have long-term moderate adverse impacts on health and safety. Cumulative impacts would be short-term minor adverse and long-term moderate adverse.

Alternative B: Minimum Action

Alternative B would also have short-term minor adverse impacts on health and safety. Most of the adverse impacts would occur due to construction, and would be limited to the construction period. Rehabilitation of Little Beaver Lake Road would require that the road be temporarily closed to traffic. Access to the Little Beaver Trailhead and the Little Beaver Lake Campground and boat launch would also be temporarily denied during construction. However, construction would not occur during the peak usage period to minimize public health and safety impacts.

The correction of existing roadway deficiencies and improved safety features would increase safety for lakeshore visitors accessing Little Beaver Lake Road. The long-term impacts would be beneficial. The rustic character of the road would be retained, but visitors would be able to drive more safely on the newly surfaced roadway. The sharpest curve on the road would be realigned, creating greater visibility. Motorists would no longer need to back up to accommodate an oncoming vehicle, and the passing zones would be stable and safe to use. The improved surfaces in the campground and trailhead parking lot would also allow visitors to travel more comfortably.

Road maintenance would continue to impact health and safety with noise, delays, and diminished visual quality, but maintenance needs and frequencies would be reduced.

Cumulative Impacts. Other past or reasonably foreseeable future actions created or have the potential for impacts on health and safety. The upgrade of County Road H-58 in 2009 and 2010 may result in interrupted traffic flow when construction is ongoing at the Little Beaver Lake Road intersection. Depending upon the timing, proposed construction under Alternative B could have a short-term minor adverse impact on health and safety if it is conducted at the same time as the work on H-58. However, in the future, the upgrade of H-58 is expected to increase the volume of traffic on Little Beaver Lake Road.

The construction activities on H-58 in addition to the proposed improvements under Alternative B would result in cumulative short and long-term impacts on health and safety. The cumulative short-term impacts would be minor and adverse during construction, but the long-term impacts to health and safety would be beneficial.

Conclusion. Alternative B would have short-term minor adverse, but long-term beneficial impacts on health and safety. Cumulative impacts would be minor and adverse in the short term, but beneficial in the long term.

Alternative C: Preferred Alternative

Alternative C would have short-term minor adverse impacts on health and safety. Most of the adverse impacts would occur due to construction and would be limited to the construction period. Rehabilitation of Little Beaver Lake Road would require that the road be temporarily closed to traffic. Access to the Little Beaver Trailhead and the Little Beaver Lake Campground and boat launch would also be temporarily denied during construction. However, construction would not occur during the peak usage period to minimize public health and safety impacts.

The correction of existing roadway deficiencies and improved safety features would increase safety for lakeshore visitors accessing Little Beaver Lake Road. The long-term impacts would be beneficial. The rustic character of the road would be retained, but visitors would be able to drive more safely on the newly surfaced roadway. The sharpest curve on the road would be realigned, creating greater visibility. Motorists would no longer need to back up to accommodate an oncoming vehicle, and the passing zones would be stable and safe to use.

Road maintenance would continue to impact health and safety with noise, delays, and

diminished visual quality, but maintenance needs and frequencies would be reduced. The reconfigured parking at the Little Beaver Trailhead would improve access to Little Beaver Trail and traffic flow within the trailhead parking lot. Additional parking for larger vehicles would be provided. The proposed modifications to the campground, including an enlarged, revegetated campground circle, would improve traffic flow. Redesigned parking at the boat ramp would also be beneficial, particularly for vehicles hauling trailers. The oversized-vehicle turnaround area would provide added safety for visitors in larger vehicles.

Cumulative Impacts. Other past or reasonably foreseeable future actions created or have the potential for impacts on health and safety. The upgrade of County Road H-58 in 2009 and 2010 may result in interrupted traffic flow when construction is ongoing at the Little Beaver Lake Road intersection. Depending upon the timing, proposed construction under Alternative C could have a short-term minor adverse impact if it is conducted at the same time as the work on H-58. However, in the future, the upgrade of H-58 is expected to increase the volume of traffic on Little Beaver Lake Road.

The construction activities on H-58 in addition to the proposed improvements under Alternative C would result in cumulative short and long-term impacts on health and safety. The cumulative short-term impacts would be minor and adverse during construction, but the long-term impacts to health and safety would be beneficial.

Conclusion. Alternative C would have short-term minor adverse impacts, but beneficial long-term impacts on health and safety. Cumulative impacts would be short-term minor adverse and long-term beneficial.

Impacts to Cultural Resources and Section 106 of the NHPA

In this EA/AoE discussions of impacts to cultural resources are among those impact topics dismissed from detailed analysis. Those briefer impact analyses are intended, however, to comply with the requirements of both NEPA and Section 106 of the NHPA. In accordance with the ACHP's regulations implementing Section 106 of the NHPA (36 CFR Part 800, *Protection of Historic Properties*), impacts to cultural resources were also identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that are either listed in or eligible to be listed in the NRHP; (3) applying the criteria of adverse effect to affected, National Register eligible or listed cultural resources; and (4) considering ways to avoid, minimize or mitigate adverse effects.

CEQ regulations and D.O. 12 also call for a discussion of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact, e.g. reducing the intensity of an impact from major to moderate or minor. Surveys of the site have been conducted by consultants and lakeshore staff, and no archeological resources, historic or prehistoric structures, or ethnographic resources have been observed there. In the Mitigation Measures section of this EA/AoE measures have been identified for handling and protecting any unknown archeological resources, according to 36 CFR 800.13 and provisions of NAGPRA. In accordance with Section 106 of the NHPA, the NPS has concluded that there would be no historic properties affected by the implementation of the NPS preferred alternative discussed in this document.

CONSULTATION AND COORDINATION

A press release initiating public scoping and describing the proposed action was issued on July 1, 2008 (Appendix A). No comments have been received to date.

The undertakings described in this document are subject to Section 106 of the NHPA, as amended in 1992 (16 USC 470 *et seq.*). Initial project scoping letters went out to the MI SHPO, the ACHP, and to the lakeshore's affiliated tribes on July 24, 2008. These letters are presented in Appendix B - Consultation and Coordination. The letter invited comments and also notified the agencies and tribes of the intent to use the NEPA process to meet its obligations under Section 106 of the NHPA. A response letter from the ACHP dated September 2, 2008, acknowledged receipt of the NPS letter, and reaffirmed federal compliance requirements under *Protection of Historic Properties* 36 CFR Part 800 .8 (see Appendix B). The ACHP, MI SHPO and federally recognized tribes will have the opportunity to review and comment on this EA/AoE during the public review period.

In accordance with section 7(c) of the Endangered Species Act of 1973, as amended (16 USC 1531 *et seq.*), it is the responsibility of the federal agency proposing the action (in this case the NPS) to determine whether the proposed action would adversely affect any listed species or designated critical habitat. After consulting internet sources and with species experts, it was determined that no listed species or their critical habitats would be adversely affected by either alternative. This EA/AoE will be sent to the U.S. Fish and Wildlife Service and the Michigan Department of Natural Resources during the public review period.

LIST OF PREPARERS

This EA/AoE was prepared by the NPS Denver Service Center for Pictured Rocks National Lakeshore. Pictured Rocks National Lakeshore staff provided invaluable assistance in the development and technical review of this document. Staff members who provided assistance and information include:

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Chris Case – Facility Manager

Gregg Bruff – Chief of Heritage Education, Visitor Services, and Cultural Resources Management

Meg Hahr – Chief of Science and Natural Resources

Bruce Leutscher - Biologist

NATIONAL PARK SERVICE – DENVER SERVICE CENTER

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Ginger Molitor – Natural Resource Specialist

Lee Terzis – Cultural Resource Specialist

Gail Stahlecker – Project Specialist, Design

Jessica Hendryx – Project Specialist, Revegetation

FEDERAL HIGHWAY ADMINISTRATION/EASTERN FEDERAL LANDS HIGHWAY DIVISION

Yanina Kirtley – Project Manager

Jeff Slater – Project Manager (interim)

Marc Carruthers – Highway Engineer

REFERENCES

Anderton, John B.
2008 "Phase I Archaeological Survey of the Little Beaver Lake Campground and White Pine Trail Parking Lot Pictured Rocks National Lakeshore: A Limited Distribution Technical Report." Submitted to the National Park Service Denver Service Center, Denver, CO.

Ayres Associates Inc.
2008 *Wetland Delineation Report for Pictured Rocks National Lakeshore: Rehabilitation of Little Beaver Lake Road, Pictured Rocks National Lakeshore, Alger County, Michigan*. Prepared for National Park Service, Denver Service Center. Ayres Associates Inc. Eau Claire, WI.

Cowardin, Lewis M., Virginia Carter, Francis C. Golet, and Edward T. LaRoe
1979 *Classification of Wetlands and Deepwater Habitats of the United States*. Prepared for U.S. Departmment of Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C.

Fish and Wildlife Service, U.S. Department of the Interior
2009 *County Distribution of Michigan's Threatened, Endangered, Proposed, and Candidate Species*. Available on the Internet at <http://www.fws.gov/midwest/endangered/section7/sppranges/michigan08cty.pdf>.

Michigan Natural Features Inventory
2009 *County Element Data*. Available on the Internet at <http://web4.msue.msu.edu/mnfi/data/cnty_dat.cfm?county=Alger>. Accessed February 13, 2009.

National Park Service, U.S. Department of the Interior
2009 *Protocol for Inadvertent Discovery of Historic Human Remains During Research of Park Management Activities*.

2008 *Environmental Screening Form, Rehabilitate Little Beaver Road, May 2008*.

2007 "Biological Assessment: Little Beaver Lake Corridor, Pictured Rocks National Lake Shore."

2006 *Management Policies 2006*. U.S. Department of the Interior, Washington, D.C.

2004a *Biological Assessment for General Management Plan Preferred Alternative, National Park Service, Pictured Rocks National Lakeshore*. Prepared by Bruce Leutscher, Pictured Rocks National Lakeshore, Munising, MI.

2004b *Final General Management Plan and Wilderness Study/Environmental Impact Statement: Pictured Rocks National Lakeshore, Michigan*. Denver Service Center, Denver, CO.

2004c *General Management Plan, Pictured Rocks National Lakeshore*. Denver Service Center, Denver, CO.

2001 *Director's Order 12 and Handbook: Conservation Planning, Environmental Impact Analysis, and Decision-Making*. U.S. Department of the Interior, National Park Service.

2000 *Director's Order 47: Sound Preservation and Noise Management*. U.S. Department of the Interior, National Park Service.

1986 *Interpretation and Visitor Services Guidelines.* U.S. Department of the Interior, National Park Service.

Natural Resources Conservation Service, U.S. Department of Agriculture
2009 "Custom Soil Resource Report for Alger County Area, Michigan: Little Beaver Lake Road Corridor." *Web Soil Survey*. Available on the Internet at <http://websoilsurvey.nrcs.usda.gov/app/>. Accessed February 24, 2009.

Potvin, Marcel J., Thomas D. Drummer, John A. Vucetich, Dean E. Beyer, Rolf O. Peterson, and Jim H. Hammill.
2005 "Monitoring and Habitat Analysis for Wolves in Upper Michigan." *Journal of Wildlife Management* 69(4): 1-9.

Simmons, Todd and James H. Gramann
2002 Pictured Rocks National Lakeshore Visitor Study, National Park Service, Visitor Services Project. Copy available at national lakeshore headquarters.

U.S. Department of the Interior
2009 "Secretary Salazar Affirms Decision to Delist Gray Wolves in Western Great Lakes, Portion of Northern Rockies." News Release, March 6, 2009. Office of the Secretary, U.S. Department of Interior.

APPENDIX A: PRESS RELEASE

National Park Service
U.S. Department of the Interior

Pictured Rocks
National Lakeshore

www.nps.gov/piro

N8391 Sand Point Rd.
P.O. Box 40
Munising, MI 49862

(906)-387-2607 phone
(906) 387-4025 fax

Pictured Rocks News Release

July 25, 2008

Contact Jim Northup, 906-387-2607, ext. 202, jim_northup@nps.gov, or Chris Case, 906-387-2607, ext. 209, chris_case@nps.gov

Pictured Rocks National Lakeshore Plans to Rehabilitate Little Beaver Lake Road

(Munising, MI) Superintendent Jim Northup announces that Pictured Rocks National Lakeshore proposes to rehabilitate Little Beaver Lake Campground Road in Alger County, Michigan. This 3.45 mile gravel road provides access from Alger County Road H-58 to a small, rustic 8-site, drive-in campground and a small boat launch for access to the adjacent Little Beaver Lake.

In accordance with the National Environmental Policy Act (NEPA), the National Park Service is initiating preparation of an environmental assessment (EA) for this project. The EA will analyze and disclose potential impacts of alternatives for rehabilitating the road.

The road also provides access to trailheads that lead into the lakeshore's backcountry areas, including the recommended Beaver Basin Wilderness Area. The road pre-dates the establishment of the national lakeshore and was not constructed to currently accepted standards for the volume and type of public use the road receives today. The volume and type of public use has increased since the establishment of the national lakeshore and may increase slightly with the upgrade of County Road H-58.

It is the intent of the national lakeshore to minimize changes to visitor experience and adjacent resources through context-sensitive design. The current character of the road and the visitor driving experience are key considerations when evaluating possible alternatives for road rehabilitation. The proposed work includes improvement to the grade and drainage, such as culvert replacement or installation of new culverts, as well as surface treatment. In addition, the proposal suggests minor improvements to the surface of the Little Beaver Lake Campground Road, the trailhead parking area, and the boat trailer parking area. Proposed road rehabilitation could begin in 2010.

The National Park Service is soliciting input from organizations, agencies, and individuals as part of the scoping process. The purpose of scoping is to identify the range of issues to be addressed in the EA, as well as potential alternatives for the project.

The public is invited to direct concerns or comments regarding this project to Superintendent Northup online at http://parkplanning.nps.gov/piro. Comments may be mailed to Pictured Rocks National Lakeshore, P.O. Box 40, Munising, MI 49862-0040; telephone 906-387-2607, ext. 202.

APPENDIX B: LETTER TO AMERICAN INDIAN GROUPS

United States Department of the Interior
NATIONAL PARK SERVICE
Pictured Rocks National Lakeshore
P.O. Box 40
Munising, Michigan 49862-0040
(906) 387-2607

IN REPLY REFER TO:

July 24, 2008

H4217(PIRO)

Kenneth Meshigaud, Chairperson
Hannahville Indian Community
N14911 H. B-1 Rd.
Wilson, MI. 49896

Dear Mr. Meshigaud:

The National Park Service (NPS) proposes to rehabilitate Little Beaver Lake Road, a 3.45 mile gravel road that provides access from County Road H-58 in Alger County, Michigan, to a small rustic 8-site drive-in campground and a small boat launch for access to the adjacent Little Beaver Lake.

In accordance with the National Environmental Policy Act (NEPA), the National Park Service is initiating preparation of an environmental assessment (EA) for this project. The EA will analyze and disclose potential impacts of alternatives for rehabilitating the road.

The road also provides access to trailheads that lead into the lakeshore's backcountry areas, including the recommended Beaver Basin Wilderness Area. The road pre-dates the establishment of the national lakeshore and was not constructed to currently accepted standards for the volume and type of public use the road receives today. The volume and type of public use has increased since the establishment of the national lakeshore and may increase slightly with the upgrade of County Road H-58.

It is the intent of the national lakeshore to minimize changes to visitor experience and adjacent resources through context-sensitive design. The current character of the road and the visitor driving experience are key considerations when evaluating possible alternatives for road rehabilitation. The proposed work includes improvement to the grade and drainage, such as culvert replacement or installation of new culverts, as well as surface treatment. In addition, the proposal suggests minor improvements to the surface of the Little Beaver Lake Campground Road, the trailhead parking area, and the boat trailer parking area. Proposed road rehabilitation could begin in 2010.

In an effort to quantify potential archeological resources in the affected area, a contractor will conduct Phase I archeological surveys of the Little Beaver Lake Campground and the White Pine Trail parking lot expansion area. The Phase I survey shall include excavation of shovel test pits

(STPs) completed at 3-meter intervals in the affected project areas (Figures 1 and 2). The STPs shall be excavated to the width of a shovel blade and to the depth of subsoil that is devoid of cultural material.

The contractor will then prepare a written draft and final report presenting the results of the Phase I survey. The report shall minimally include the following information: purpose and scope of effort, background information, field and laboratory procedures/techniques and rationale for the methods used, results of fieldwork/laboratory analysis, discussion of findings and conclusions. Appropriate graphics will supplement the written report.

In accordance with the Advisory Council on Historic Preservation regulations, 36 CFR Part 800: *Protection of Historic Properties*, the National Park Service is required to comply with section 106 of the National Historic Preservation Act of 1966 (as amended). This scoping notice serves to officially initiate section 106 consultation with your tribe. Formal section 106 consultation has also been initiated with the State Historic Preservation Office as well as multiple other agencies, organizations, and individuals.

In addition, in accordance with 36 CFR Part 800.8(c): *Use of the NEPA process for section 106 purposes*, this letter also serves to notify you of our intention to use the NEPA process for all subsequent section 106 consultation on this project. We have already identified consulting parties both for NEPA and section 106 purposes and are now working to identify all applicable historic properties and areas of potential effect.

We would be happy to arrange a meeting with you at your convenience to discuss this project. Please contact me by email at jim_northup@nps.gov or by telephone at 906-387-2607, ext. 202. You may also contact Jeri DeYoung, NPS Denver Service Center Cultural Resource Specialist, at 303-969-2576 (jeri_deyoung@NPS.gov).

Sincerely,

Jim Northup

Jim Northup
Superintendent

Enclosure:
Location map

Identical letters to:

Kenneth Meshigaud, Chairperson
Hannahville Indian Community
N14911 H. B-1 Rd.
Wilson, MI. 49896

Susan LaFernier, President
Keweenaw Bay Indian Community
16429 Beartown Road
Baraga, MI 49908

Mr. Cecil Pavlat
Cultural Repatriation Specialist
Sault Tribe of Chippewa Indians
523 Ashmun Street
Sault Ste. Marie, MI 49873

bcc: DSC-PM Tracy Cudworth
DSC-CRS Jeri DeYoung
DSC-NRS Ginger Molitor
DSC-PIF
PIRO – Bruce Leutscher, Acting Chief of Science and Resources Management

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 D-129 AUGUST 2009

United States Department of the Interior ✧ National Park Service