National Park Service
U.S. Department of the Interior

Grand Teton National Park
Wyoming

Transportation Plan
Environmental Impact Statement

Record of Decision

March 2007

Approved:

Anthony J. Schetzsle 3/12/07

For Michael D. Snyder
Intermountain Regional Director
National Park Service

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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

RECORD OF DECISION

TRANSPORTATION PLAN
ENVIRONMENTAL IMPACT STATEMENT

GRAND TETON NATIONAL PARK

WYOMING

The Department of the Interior, National Park Service (NPS) has prepared this Record of Decision (ROD) on the *Final Transportation Plan/Environmental Impact Statement* (Final Plan/EIS) for Grand Teton National Park. This ROD includes a description of the background of the project, a statement of the decision made, synopses of other alternatives considered, the basis for the decision, findings on impairment of park resources and values, a description of the environmentally preferable alternative, a listing of measures to minimize environmental harm, and an overview of public and agency involvement in the decision-making process.

BACKGROUND OF THE PROJECT

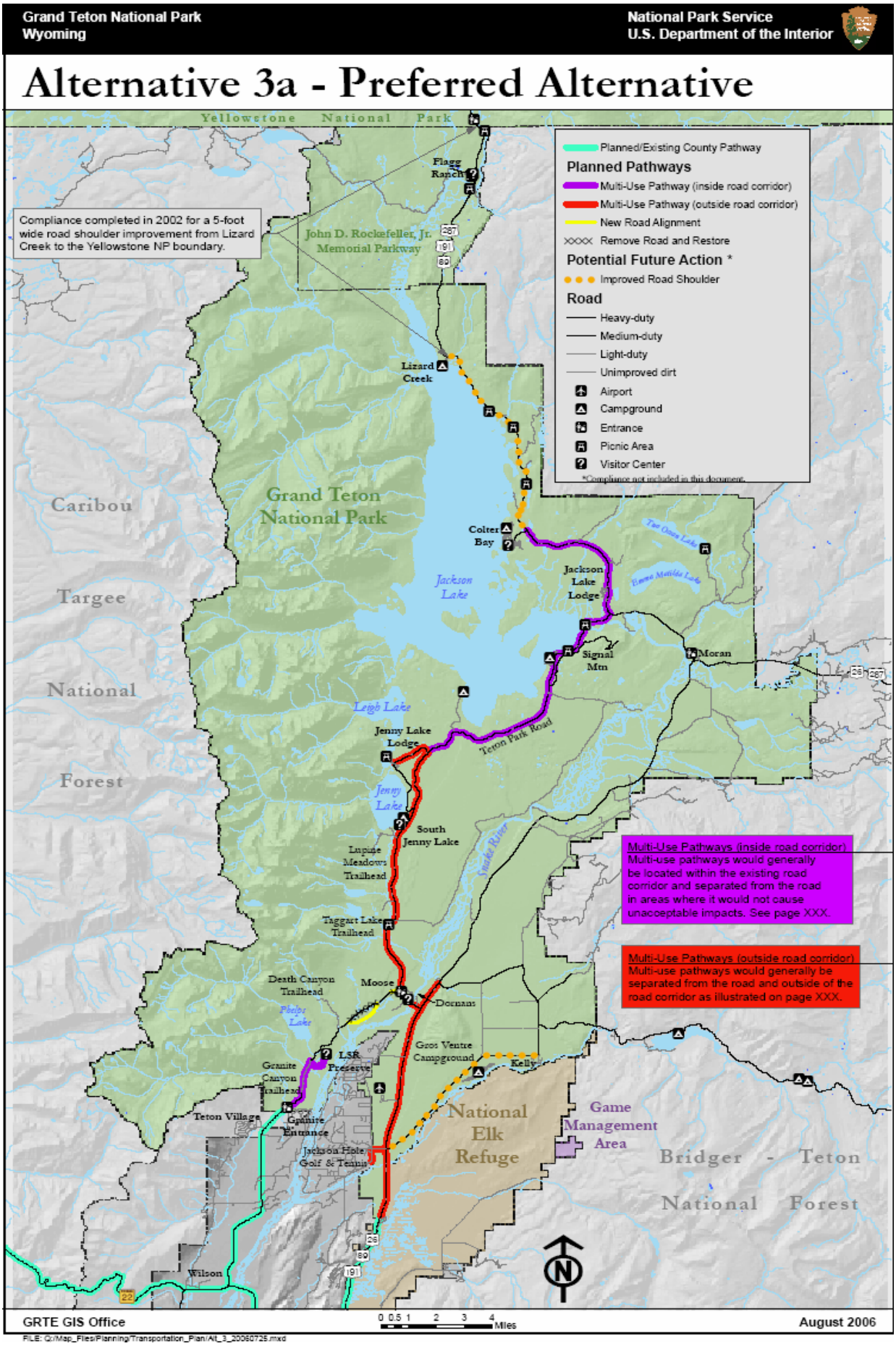
The purpose of the Transportation Plan is to address and manage transportation-related issues in Grand Teton National Park. The Final Plan/EIS evaluates and recommends a preferred system of transportation improvements within Grand Teton National Park including roadways and parking, development of a plan to evaluate the need and feasibility for a transit system within the Park, construction of improved road shoulders and multi-use pathways, improvements to developed areas, and development of traveler information systems. It includes plans for testing several adaptive management strategies on the Moose-Wilson Road in order to gather information about the best way to maintain the existing character of the corridor while recognizing its sensitive wildlife, scenic, and historic values. The Final Plan/EIS also seeks to identify opportunities to develop transportation partnerships for transit with neighboring communities (i.e., Jackson, Teton Village, and Teton County, Wyoming).

DECISION (SELECTED ACTION)

Description of the Selected Action

Based on comments received during public review of the Draft Plan/EIS, the NPS developed a new preferred alternative that combines elements of Alternatives 3 and 4, and additionally includes some new elements that were not included in the Draft Plan/EIS. Alternative 3a, the Preferred Alternative, was designed to provide a wide range of transportation opportunities for bicyclists and pedestrians. Under this alternative, the Moose-Wilson Road will be realigned in two areas to restore aspen and wetland habitat, 22.5 miles of multi-use pathways will be constructed outside existing road corridors, and 18.8 miles of multi-use pathways will be constructed inside existing road corridors.

Development of the pathway system will occur in phases. The Park intends to design pathway construction in segments that will provide adequate parking opportunities and pathway connectivity at both ends as much as possible. The phases will be based on the results of monitoring and analysis of


Grand Teton National Park
Wyoming
National Park Service
U.S. Department of the Interior
Alternative 3a - Preferred Alternative
Yellowstone National Park
Flagg Ranch
John D. Rockefeller, Jr. Memorial Parkway
Compliance completed in 2002 for a 5-foot wide road shoulder improvement from Lizard Creek to the Yellowstone NP boundary.
Planned/Existing County Pathway
Planned Pathways
Multi-Use Pathway (inside road corridor)
Multi-Use Pathway (outside road corridor)
New Road Alignment
Remove Road and Restore
Potential Future Action *
Improved Road Shoulder
Road
Heavy-duty
Medium-duty
Light-duty
Unimproved dirt
Airport
Campground
Entrance
Picnic Area
Visitor Center
*Compliance not included in this document.
Lizard Creek
Grand Teton National Park
Caribou
Targee
National
Forest
Colter Bay
Jackson Lake
Jackson Lake Lodge
Two Ocean Lake
Emma Matilda Lake
Moran
Signal Mtn
Leigh Lake
Jenny Lake Lodge
Teton Park Road
Jenny Lake
South Jenny Lake
Snake River
Lupine Meadows Trailhead
Taggart Lake Trailhead
Death Canyon Trailhead
Moose
Phelps Lake
Dornans
Granite Canyon Trailhead
LSR Preserve
Gros Ventre Campground
Kelly
Teton Village
Granite Entrance
Jackson Hole Golf & Tennis
National Elk Refuge
Game Management Area
Bridger - Teton National Forest
Wilson
Multi-Use Pathways (inside road corridor)
Multi-use pathways would generally be located within the existing road corridor and separated from the road in areas where it would not cause unacceptable impacts. See page XXX.
Multi-Use Pathways (outside road corridor)
Multi-use pathways would generally be separated from the road and outside of the road corridor as illustrated on page XXX.
GRTE GIS Office
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August 2006
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environmental impacts, visitor use patterns, and other factors relevant to construction and use of the system. Key actions of the Preferred Alternative in the areas of roadways and parking, transit service and facilities, multi-use pathways and improved shoulders, developed areas, and traveler information are summarized below.

Key Actions

Roadways and Parking

Under the Preferred Alternative, improvements to park roadways and parking areas will occur during scheduled maintenance or on an as needed basis. A combination of improvements may be implemented and could include road signs to increase awareness of wildlife crossings, improved information on parking lot capacity and filled lots, self service information kiosks, and variable messaging signs.

A pedestrian-crossing signal will be constructed at the Jackson Lake Dam crossing to increase visitor safety. Reconfiguration of some parking areas in the Park could occur to improve the efficiency of parking areas and increase their capacity to some extent without increasing the impervious surface. Separate entrance lanes will be established for use by park employees and other administrative traffic in order to shorten lines at park entrance stations.

Moose-Wilson Road

A cultural resource investigation was completed along the Moose-Wilson Road from the Granite Canyon Entrance Station to Moose in July 2006 to evaluate the eligibility of the road for the National Register of Historic Places (NRHP). The Wyoming State Historic Preservation Office (SHPO) concurred with the finding of eligibility that was documented by the investigation. Therefore, any actions proposed on the Moose-Wilson Road that affect the road itself or its viewshed will require further consultation between the SHPO and the NPS to identify appropriate mitigation to ensure compliance with Section 106 of the National Historic Preservation Act. The Moose-Wilson Road will be realigned in two areas, and the existing alignments will be abandoned and restored to natural conditions to enhance habitat.

The NPS hired the Western Transportation Institute to help develop an adaptive management plan (AMP) to guide the testing of transportation management and operational strategies for vehicle use on the Moose-Wilson Road. Over the next several years, the NPS may test a number of different strategies identified in the AMP for managing traffic, as well as pedestrian and bicycle use on the Moose-Wilson Road, that will ensure the existing character of the road is maintained. In addition, the NPS may consider minor widening in select areas to help accommodate safe travel without altering the character of the road.

These strategies, if implemented, will be seasonal and/or temporary and will involve segments or portions of the Moose-Wilson Road to provide information to the NPS for developing a long-term solution in conjunction with future long-term planning efforts. Under all strategies, two-way traffic will be maintained from Moose to the LSR Preserve and from the Granite Canyon Entrance Station to the Granite Canyon Trailhead and considerations for emergency and inholder traffic will be developed. Data collected during the 2006 and 2007 seasons will be used to support planning and design of the most effective transportation management strategies on the Moose-Wilson Road over the next several years. The 2006-2007 baseline data focus on traffic volume as well as other data needed to support the evaluation of transportation management approaches that may be implemented in the future.

The selected transportation management strategy will be publicized to local stakeholders/park users well in advance of implementing any of these changes. Publicity will occur through local outreach and media and through the Park's web site (http://www.nps.gov/grte) to minimize visitor confusion or disruption of services. Strategies implemented in future years will depend on how well prior strategies met the critical performance measures.

Transit Service and Facilities

The Preferred Alternative will provide additional information concerning the transit services available to the public, including route maps and schedules at lodges within and outside the Park, visitor centers, and other locations where visitors may congregate. A public transit business study will be developed with the goal of providing a sufficient analysis of options to determine whether it is feasible to begin a transit system in and around Grand Teton National Park and, if so, how to operate it effectively and efficiently such that it is a financially sustainable system that could be provided by either the private sector or another entity. In 2006, Grand Teton National Park requested and received funds from the Alternative Transportation on Park and Public Lands (ATPPL) Program to conduct a transit business study and anticipates completing it by summer 2008. A public transit system may be proposed in the Park in the future pending the findings of a transit business study, but no decision on a transit system has yet been made. If the study finds transit to be a feasible alternative for the Park, it will also recommend a range of minor infrastructure requirements (e.g., small shelters, small pull outs, kiosks, and signs) to ensure adequate user services.

Multi-use Pathways and Improved Shoulders

The Preferred Alternative distinguishes between pathways constructed within the road corridor as opposed to those constructed outside of the corridor. The term "road corridor" generally means the engineered corridor in which the road exists, including the cut-and-fill areas and clear zones. A total of 22.5 miles of multi-use pathways will be constructed outside existing road corridors, and 18.8 miles of multi-use pathways will be constructed inside the road corridor. In general, pathways constructed outside the road corridor will be located within approximately 50 ft of the existing road.

Under the Preferred Alternative, multi-use pathways will be constructed *outside* the road corridor:

- Along U.S. Highway 26/89/191 (Outer Highway) from the south boundary to Antelope Flats Road (a distance of approximately 9.4 miles).
- Along the Teton Park Road from Moose Junction to North Jenny Lake Junction (a distance of approximately 10.6 miles).
- From North Jenny Lake Junction west to String Lake (a distance of approximately 1.5 miles).
- From Gros Ventre Junction to an existing pathway at Jackson Hole Golf and Tennis via Sagebrush Drive and Spring Gulch Road (a distance of approximately 1.0 mile).

The Preferred Alternative also includes construction of multi-use pathways *inside* the road corridor:

- Along the Teton Park Road from North Jenny Lake Junction to Colter Bay (a distance of approximately 15.5 miles), except for a section between Signal Mountain Lodge and Jackson Lake Dam, where an improved shoulder will be constructed. In addition, improved shoulders will be used in other areas where constructability issues or unacceptable impacts to resources could occur.
- Along the Moose-Wilson Road from the Granite Canyon Entrance Station to the new Laurance S. Rockefeller (LSR) Preserve (a distance of approximately 3.3 miles). The Moose-Wilson pathway will begin at the Granite Canyon Entrance Station and extend to the north end of the unpaved section of road. At that point, the pathway will divert eastward and follow the long-established alignment of the unpaved levee access road to the new LSR Preserve (opening planned for 2007).

Developed Areas

The Preferred Alternative will incorporate limited modifications and additions to infrastructure through normal park operations and maintenance and could include improved social trails, signs, and way-finding,

information kiosks, bicycle racks, variable-messaging signs, bulletin boards, and other traveler information systems in the Moose, South Jenny Lake, Signal Mountain, Jackson Lake Lodge, and Colter Bay activity areas.

Traveler Information

The Preferred Alternative will improve the amount and type of information available to park visitors and the local community regarding transportation related issues. The Park will employ various information transmission methods, depending on effectiveness and as funds become available, which could include traveler information systems (localized radio transmissions with information on current park conditions), additional variable messaging signs, bulletin boards, an improved website, and information kiosks with current information at key locations. Signboards will list congested areas, such as popular areas or trailheads, and alternative destinations to visit in the Park, thus allowing visitors to plan their visit and assist the Park in managing visitor access without the aid of park staff at trailhead sites. Wildlife hazard signs could also be provided where limited sight distances or other factors increase the potential for dangerous human-wildlife interactions.

Mitigation Measures/Monitoring

To ensure protection of the natural and cultural resources and the quality of the visitor experience, the NPS will avoid, minimize, and mitigate adverse impacts whenever practicable. Specific mitigation measures that are relevant and appropriate for each element of Alternative 3a will be identified during the design phase and will be applied where appropriate for specific types of action. Best management practices (BMPs) will be implemented as appropriate before, during, and/or after construction of proposed improvements to provide long-term protection of park resources. BMPs specific to the design cannot be proposed until the full design is complete and specifics of the proposed construction are known. A partial list of BMPs is included in Appendix A of the Final Plan/EIS.

The NPS will employ a comprehensive monitoring program as part of implementation of any alternative involving pathways. This program will include collection of information on pathway users and impacts of use, including impacts on wildlife and vegetation. Information obtained from the monitoring program will inform planning and design of future phases.

Pathway Users Monitoring
Pre- and Post-pathway construction monitoring will collect data on pathway user distributions, volume, user types, behaviors, satisfaction, and conflicts to determine the pathways' effects on visitor use and experience. Visitor surveys will be conducted to assess opinions on improved safety, level of enjoyment and accessibility. Following completion of the first phase of pathway construction, the NPS will monitor the types and levels of visitor use occurring on the pathways. The information on the number of users, patterns of use, and different types of users (i.e., bicyclists, pedestrians, etc.) will be used to complement the wildlife monitoring and data collection program, and to inform planning and design of later phases of the pathway system.

Wildlife Research and Monitoring
To better understand wildlife associated pathway impacts, the Park will implement a research and monitoring program designed to evaluate a variety of pathway effects on a representative group of animals, beginning with the Phase 1 construction. Phase 1 includes the construction of approximately 7.7 miles of multi-use pathway between Dornan's and South Jenny Lake Junction. The NPS anticipates that this segment will be one of the most popular segments of pathways with users and is also be one of the easier sections on which to site pathways close to the existing road to connect two popular park destinations – Moose and South Jenny Lake.

The program's primary objective will be to quantify the effects of pathway construction and use, and employ this information during future design and development of additional phases of construction, pathway placement, and necessary mitigation. The initial phase of monitoring and research proposed for the constructed Phase 1 pathway will be conducted over a period of three to four years. Wildlife monitoring will occur within the Park along the Moose-Wilson Road, from the south boundary to Moose, and from Moose to North Jenny Lake Junction. Additional monitoring needs will depend on the results of the initial monitoring and the subsequent decisions based on this monitoring.

Depending on the site-specific design of the various pathway segments, additional mitigation may be needed to compensate for wetland and/or habitat loss for park plants and animals. Such mitigation may be in the form of restoration or modification of access in other high quality habitats such as riparian zones, ungulate calving areas, and areas increasingly frequented by bears. Management options will range from seasonal use restrictions to pathway closures and may include site rehabilitation to restore native vegetation.

Moose-Wilson Road Data Collection and Monitoring

The Park will develop a data collection and monitoring plan to study the effects on visitor use and experience and park operations for the first phase of pathways proposed for construction within the Park. The results of this data collection and monitoring will help park managers understand the effects of the new pathway system based on actual use and facilitate planning and design of additional pathway segments or different management strategies for the Moose-Wilson Road in the future. The Park will also monitor how wildlife uses the corridor before pathway construction on Moose-Wilson Road during the initial 3-4 years of monitoring. Monitoring of actual pathway impacts will occur later, after the appropriate phase.

During the summer of 2006, baseline data for the Moose – Wilson Road was collected, including vehicle traffic volume, speed, and direction; bicycle traffic volume and direction on peak and off-peak times; visitor surveys to determine destination, satisfaction and purpose for visiting the Moose-Wilson Road; travel mode usage observations; directional traffic observations; and incident data analysis to assess historical conflicts and safety concerns. The baseline data will provide a basis for comparing the effects of the various management strategies that may be tested on the Moose - Wilson Road, and will also help with the development of future data collection and monitoring activities.

Mitigation by Monitoring and Phasing

Many of the actions proposed in the Preferred Alternative will require multiple phases. Development of the pathway systems and improved shoulders will occur in phases out of necessity given expected funding constraints, as well as to take advantage of wildlife monitoring data collected during initial phases. Future pathway phases will be based on the results of monitoring and analysis of environmental impacts, visitor use patterns, and other factors relevant to construction and use of the system. Following the construction of the first phase of pathways (Dornan's to South Jenny Lake), the NPS will evaluate visitor use and wildlife effects resulting from the use of pathways and use the data to help inform the planning and design of future segments and phases.

The NPS considered several factors in developing the implementation phases (e.g., construction schedules, remote location, and projects by other entities). For example, the Park strives to plan Phase 3 so that it coincides with the Town and County Plan for construction of their pathway up to the southern boundary of the Park. Another consideration is Federal Highway Administration project planning, which occurs in 5-year increments. The current planning cycle runs from 2005 to 2009; the subsequent cycle runs from 2010 to 2014.

These phases indicate the sequence in which actions should occur, but it should be noted that some actions that are shown within a particular phase may actually be implemented earlier or later. This is due to the fact that funding for the various actions will likely be provided through a number of different

sources and may be available earlier or later than anticipated. However, actions that are dependent upon data collection and monitoring in earlier phases cannot be taken out of sequence unless there was a high degree of confidence that all resource impacts will be within acceptable levels. Phase 4 and 5 pathway segments will not be constructed until at least three years of wildlife research and monitoring have been completed and analyzed, since these data will be used to better estimate and mitigate potential wildlife impacts along these sections of proposed pathway. This sequencing of monitoring before constructing additional phases is a mitigation measure outlined in the Final Plan/EIS for which the USFWS biological opinion was based.

Phase 1's primary intent is to complete a transit business study to inform the Park on future transit service opportunities, and construct a separated pathway along one of the most-visited section of the Park which connects two major developed visitor use areas.

- Conduct a transit business study that will identify alternatives for a technically and financially feasible transit system within the Park.
- Construction of a separated pathway along the Teton Park Road from Dornan's to South Jenny Lake Junction.
- Installation of signage and other elements associated with pathway construction.

Phase 2 focuses on connecting the Phase 1 pathway system to String Lake. It also includes the realignment and restoration of approximately two miles of the northern section of the Moose-Wilson Road connecting the Moose Complex and the LSR Preserve. This realignment will support additional vehicular and non-motorized traffic anticipated between these two new destinations, restore a sensitive wetlands area, and improve protection of a wildlife movement corridor.

- Implementation of a pilot transit system as recommended by the transit business study, if applicable.
- Construction of a separated pathway along the Teton Park Road from South Jenny Lake Junction to String Lake.
- Restoration of wetlands area and realignment of two segments of the Moose-Wilson Road.
- Relocation of the Moose Entrance Station and the construction of a separate administrative lane.
- Installation of signage and other elements that go along with pathway construction, entrance station relocation, and the realignment of Moose-Wilson Road.
- Enhancement of existing traveler information systems at visitor centers, on variable message signs, at lodges, and other appropriate locations.

Phase 3 focuses on connecting the Park's new pathway system with pathways proposed by the Town and County.

- Construction of a separated pathway along Highway 26/89/191 from the south boundary to Antelope Flats Road and along the Teton Park Road from Moose Junction to Dornan's Junction.
- Construction of a separated pathway along the Sagebrush Drive and Spring Gulch Road segments.
- Installation of signage and other elements associated with pathway construction.

Phases 4 and 5 focus on extending the existing pathway system in the Park and addressing circulation in the Park's developed areas.

Phase 4

- Construction of a pathway system along the Teton Park Road from North Jenny Lake Junction to Colter Bay.
- Pedestrian trails, signage, and way finding improvements between key points at South Jenny Lake and Signal Mountain.

- Installation of signage and other elements associated with improved shoulders or pathways.
- Installation of information kiosks at Moose, South and North Jenny Lake, Signal Mountain, Jackson Lake Lodge, and Colter Bay.
- Enhancement of existing traveler information systems at visitor centers, on variable message signs, at lodges, and other appropriate locations.

Phase 5

- Construction of a separated pathway along the Moose-Wilson Road from the Granite Canyon Entrance Station to the LSR Preserve.
- Enhancement of existing traveler information systems at visitor centers, on variable message signs, at lodges, and other appropriate locations.

OTHER ALTERNATIVES CONSIDERED

Elements Common to All Alternatives

Park roadways will continue to be maintained or improved on a case-by-case basis as warranted. The NPS does not plan to make changes to any roads or trails not specifically identified in the Final Plan/EIS. A variety of adaptive management strategies may be tested on the Moose-Wilson Road to address periodic congestion, wildlife, wetlands, and visitor experience issues. The NPS has developed the *Moose-Wilson Road Adaptive Management Plan* to test transportation management and operational strategies for vehicle use on the Moose-Wilson Road.

A transit business study is being developed with the goal of providing a sufficient analysis of options to determine whether it is feasible to begin a transit system in and around Grand Teton National Park and, if so, how to operate it effectively and efficiently such that it is a financially sustainable system that could be provided by either the private sector or another entity.

The Park will improve signs on roadways under all alternatives to enhance safety by advising visitors to be aware of areas frequented by wildlife, share the road with bicyclists, and watch for pedestrians. Separate entrance lanes will be established for use by park employees and other administrative traffic to shorten lines at park entrance stations. Reconfiguration of some parking areas in the Park could also occur under all alternatives. Information will be provided to visitors to assist with trip planning and for scheduling off-peak visits. The installation of variable-messaging signs is common to all alternatives.

A wildlife research and monitoring program is being developed to evaluate more precisely the impacts of pathways on wildlife and wildlife viewing opportunities, and identify wildlife safety hazards for pathway users. This information will inform the NPS about impacts on wildlife resulting from the development of pathways, and help guide planning and design of future pathway phases. This element is only common to all action alternatives that proposed pathway construction.

Alternative 1: the *No Action* Alternative- provides a baseline in the Final Plan/EIS against which to compare the action alternatives, as well as their environmental consequences. Under the No Action Alternative, the Park would continue its current transportation management actions. No improvements would be made to roadways, parking, or transit service and facilities, and no changes would occur related to development of multi-use pathways or improved road shoulders other than those that would be accomplished through normal and ongoing park operations and maintenance or on a case-by-case basis. Minor improvements to developed areas may occur, and limited improvements would occur in traveler information systems. Alternative 1 would include all of the actions described above under the “Elements Common to All Alternatives” section. Estimated capital costs for implementing Alternative 1 are $361,000. There are no maintenance costs associated with this alternative.

Alternative 2: *Improved Road Shoulders*- the primary objective is to improve the ability to manage the traffic flow, parking, and visitor experience within the Park in a proactive manner, with little or no

construction of new pavement or parking facilities. This alternative would provide additional information concerning transit services and facilities and about current travel conditions within the Park. No multi-use pathways are proposed, but road shoulders would be improved to a 5-ft width (4.5-ft travel lane, plus 3 inches on each side for striping) on the Teton Park Road between Moose Junction and Signal Mountain Lodge (17.8 miles) to provide increased access for bicycling. The Park would limit motorized traffic on Signal Mountain Road at certain times in order to provide increased access to bicyclists and pedestrians. Limited modifications and additions to infrastructure in developed areas would occur. Alternative 2 would include improvements to the amount and type of information available to park visitors and the local community regarding transportation related issues. Alternative 2 would provide enhanced information to park visitors regarding the availability of parking. Entrance stations, visitor centers, self-service information kiosks, and variable messaging signs within the Park would provide information on lot capacity and filled lots. Alternative 2 would include all of the actions described under the "Elements Common to All Alternatives" section. Estimated capital costs and annual maintenance and operation costs for implementing Alternative 2 are $12,958,000 and $63,000, respectively.

Alternative 3: *Improved Road Shoulder/Multi-Use Pathways*- a system of multi-use pathways and improved road shoulders would be constructed to provide enhanced and safer experiences for bicyclists and pedestrians. Approximately 23.3 miles of multi-use pathways would be constructed outside the engineered road corridor (within 50 ft of the road, but not greater than 150 ft from the road) along U.S. Highway 26/89/191 from the south boundary to Antelope Flats Road, along the Teton Park Road from Moose Junction to North Jenny Lake Junction, including a segment to Dornan's, and from the Granite Canyon Entrance Station to the LSR Preserve. Alternative 3 also includes shoulder widening (to 5 ft along 15.5 miles) of the Teton Park Road from North Jenny Lake Junction to Colter Bay.

In addition, visitor information systems would be expanded and improved. Road signs and other forms of information, including information about existing transit services, would be improved to inform park visitors about current traffic/use conditions in the Park. A pedestrian-crossing signal would be constructed at the Jackson Lake Dam crossing to increase visitor safety. The Moose-Wilson Road would be realigned in two areas to restore aspen and wetland habitat, and the existing alignments would be abandoned and restored to natural conditions. Limited modifications and additions to infrastructure would be incorporated, such as social trails, signs, information kiosks, and wayfinding. Some parking and circulation would be minimally redesigned. Alternative 3 would include all of the actions described under the "Elements Common to All Alternatives" section. Estimated capital costs and annual maintenance and operation costs for implementing Alternative 3 are $34,542,000 and $417,000, respectively.

Alternative 4: *Multi-Use Pathways* - an extensive system (a total of 42.6 miles) of multi-use pathways would be constructed outside the road corridor to provide a wide range of transportation opportunities for bicyclists and pedestrians. Multi-use pathways would be developed along U.S. Highway 26/89/191 from the south boundary to Antelope Flats Road, and from Moose Junction to Colter Bay via the Teton Park Road, including a segment to Dornan's. A pathway would also be constructed along the Moose-Wilson Road from the Granite Canyon Entrance Station to Moose. The Moose-Wilson Road would be realigned in two areas to restore aspen and wetland habitat. Limited modifications and additions to infrastructure in developed areas would occur, and improvements would be made to the amount and type of transportation-related in formation available to park visitors and the local community. Estimated capital costs and annual maintenance and operation costs for implementing Alternative 4 are $47,788,000 and $558,000, respectively.

BASIS FOR DECISION

During the alternative development process, the NPS considered alternatives that, if implemented, would meet project objectives while protecting the Park's natural and cultural resources. Actions proposed under the alternatives comprised the following categories: (1) Roadways and Parking, (2) Transit Service and Facilities, (3) Multi-use Pathways and Improved Shoulders, (4) Developed Areas, and (5) Traveler

Information. Of these, Multi-use Pathways and Improved Shoulders was the element that differentiated the alternatives the most in terms of potential impacts, and was also the topic of greatest public concern and engagement.

The greatest change in the Preferred Alternative from the draft to final plan/EIS is the addition of pathways, but in a modified manner for some segments. The pathways from North Jenny Lake Junction to Colter Bay will be constructed inside the road corridor under Alternative 3a rather than as a widened shoulder under Alternative 3 (the Preferred Alternative in the Draft Plan/EIS) or outside the road corridor under Alternative 4. Multi-use pathways will be constructed inside the road corridor under Alternative 3a between the Granite Canyon Entrance Station and the LSR Preserve (a distance of approximately 3.3 miles), but outside the road corridor under Alternative 3. Under Alternative 4, multi-use pathways would be built outside the road corridor for the entire segment of the Moose-Wilson Road from the Granite Canyon Entrance Station to Moose (a distance of approximately 7.1 miles).

To address public comment on the Draft Plan/EIS, the NPS decided to undertake several additional studies. These studies focused on clarifying the technical and financial feasibility of several proposed actions, as well as the potential safety and wildlife impacts that could result from construction of new multi-use pathways and improved shoulder segments adjacent to the major roadway systems in the Park. The NPS recognizes that the Moose-Wilson Road requires a management strategy different from other road segments in the Park because of its rustic nature, wildlife habitat, wetlands, and eligibility for listing on the NRHP. As a result the NPS contracted the Western Transportation Institute to provide professional services and consultation for adaptive management strategies for the Moose-Wilson Road, as described earlier. Elements of the consultation included a data collection and monitoring plan, refinement of desired future conditions, and development of performance measures, vehicle-traffic data collection processes, visitor use surveys, and a transit business plan. The Park also conducted a workshop with biologists from the NPS, academic, private research, and transportation planning organizations to draft several potential topics and initial strategies for a wildlife research and monitoring program, each of which included the possibility of measuring attributes before, during, and after pathway construction.

The NPS, in consultation with the Federal Highway Administration, recognized that the development of multi-use pathways will be problematic in some areas. In particular locations, pathways could pose potentially unacceptable impacts to wildlife, present unnecessary safety impacts to pathway users, and may be technically and financially infeasible to construct due to topography, vegetation, wildlife, and site conditions. These factors combine to make it very difficult to determine cost, risk to safety, or impacts to resources without first completing a near 100-percent design.

To address these concerns (as well as public comment), the NPS decided to consider multi-use pathways within the road corridor in areas like the Moose-Wilson Road, where one or more of these factors (i.e., topography, vegetation, wildlife, or site conditions) posed a challenge. The process of designing these segments will eventually produce a combination of pathways and/or improved shoulder sections with separation of motor vehicles and pathways within the road corridor, with the exact location subject to specific design and site analyses and a determination that there will not be unacceptable impacts. In some areas, pathways could diverge from the road corridor for small distances to accommodate grade, increase safety, or reduce resource impacts.

Small pathway spurs (i.e., Sagebrush Drive, Spring Gulch Road, and String Lake) were added to Alternative 3a to maximize the pathway system connectivity with the community in the future and make the best use of existing use areas and facilities. Under a separate environmental assessment, environmental compliance was completed in 2002 for widening (5-ft) road shoulders along U.S. Highway 89/191/287 from Lizard Creek campground, north to the boundary of Yellowstone National Park. This action will occur as part of future road improvements regardless of the action alternative selected under the Final Plan/EIS. The Park also retains the option of adding improved shoulders in two other locations: (1) from Colter Bay north along U.S. Highway 89/191/287 to Lizard Creek campground, and (2) from the

intersection of U.S. Highway 26/89/191 east along Gros Ventre Road to the Town of Kelly. These actions would occur as part of future planning, and the NPS would need to complete additional NEPA documentation for these segments.

In the Draft Plan/EIS, the NPS also identified the environmentally preferred alternative, Alternative 3, as the preferred alternative for implementation. In the Final Plan/EIS, the NPS has identified Alternative 3a as the preferred alternative for implementation, while Alternative 3 remains the environmentally preferred alternative.

The NPS has identified Alternative 3a as the Preferred Alternative for implementation rather than the environmentally preferred alternative because it better fulfills the purpose and need for the Final Plan/EIS. Specifically, Alternative 3a includes a more extensive system of multi-use pathways to improve opportunities for nonmotorized users to travel safely between the Park's major activity areas and connect to important destinations outside of the Park. Both alternatives provide for a phased approach to constructing the pathways, with monitoring, data collection, and additional assessment of conditions occurring with each phase. The additional information gained by these activities will be used to inform the planning and design of subsequent phases, thus providing safeguards that unacceptable impacts will not be allowed to occur.

During the transition from the Draft Plan/EIS to the Final Plan/EIS, the NPS incorporated the phasing approach and safeguards into Alternative 3a that will ensure decisions regarding details of implementation continue to be informed by pertinent new information as the pathway system develops. By providing for a more extensive system of pathways, while building in safeguards to ensure that any environmental impacts are acceptable, Alternative 3a best meets the objectives of taking action as described in the Final Plan/EIS, such as providing additional travel/recreational options, both motorized and nonmotorized. Alternative 3a allows for the development of an extensive system of pathways while building in appropriate safeguards to ensure that no unacceptable impacts are allowed to occur, and eliminates the need to engage in an entirely new planning and environmental compliance process to construct the segments that are not included in the other alternatives.

FINDINGS ON IMPAIRMENT OF PARK RESOURCES AND VALUES

The NPS Management Policies (2006) require analysis of potential effects to determine whether actions would impair park resources. The NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values. However, the laws do give the NPS the 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.

An impact to any park resource or value may, but does not necessarily, constitute an impairment. An impact would be more likely to 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, or
- key to the natural or cultural integrity of the Park or to opportunities for enjoyment of the Park, or
- identified in the Park's general management plan or
- other relevant NPS planning documents as being of significance.

An impact would be less likely to constitute impairment to the extent that it is an unavoidable result, which cannot be further mitigated, of an action necessary to preserve or restore the integrity of park resources or values. The impact threshold at which impairment occurs is not always readily apparent. Therefore, the NPS will also avoid impacts that it determines to be "unacceptable." These are impacts that

fall short of impairment but are still not acceptable within a particular park's environment. Virtually every form of human activity that takes place within a park has some degree of effect on park resources or values; however, that does not mean the impact is unacceptable or that a particular use must be disallowed. Unacceptable impacts are impacts that, individually or cumulatively, would:

- Be inconsistent with the Park's purposes or values.
- Impede the attainment of the Park's desired future conditions for natural and cultural resources as identified through the Park's planning process.
- Create an unsafe or unhealthy environment for visitors or employees.
- Diminish opportunities for current or future generations to enjoy, learn about, or be inspired by the Park's resources or values.
- Unreasonably interfere with the Park's programs or activities; an appropriate use of the Park; the atmosphere of peace and tranquility; or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the Park.

In its role as steward of park resources, the NPS must ensure that acceptable park uses will not cause impairment of, or unacceptable impacts on, park resources and values. A new form of park use will be allowed within a park only after a determination has been made in the professional judgment of the Park Manager that it will not result in unacceptable impacts.

Overall, the Preferred Alternative will result in long-term, localized, moderate, adverse impacts on visual quality, largely because of the introduction of multi-use pathways into the foreground views, as seen from the affected road corridors. Short-term, localized, moderate, adverse impacts will result during construction. Cumulative impacts will be long term, minor to major, and adverse, with short-term, moderate, adverse impacts from construction activities. The cumulative major impact will be localized to the Moose-Wilson Road area, but proposed mitigation measures and future management strategies for the Moose-Wilson Road are likely to mitigate this impact to the moderate level. Overall park scenic quality will not be affected at the major level.

Visitor Use & Experience, Socioeconomics, and Park Operations are not resource values for which the NPS determines impairment; however, these topics did have a few major beneficial and adverse impacts. Implementation of the Preferred Alternative will result in long-term, localized and regional, minor-to-major, beneficial impacts associated with the additional pathways and transit, with short- and long-term, localized, minor-to-moderate, adverse impacts on visitor and employee experience. Although the Preferred Alternative will result in minor economic and social impacts in the region, cumulative impacts will be long term, major, and both beneficial and adverse, with the increment associated with this alternative considered negligible. It will also result in long-term, localized, moderate-to-major, adverse impacts on park operations due to the increased workload necessary to implement and manage the new programs. Increased staffing and funding will be necessary to ensure proper management and maintenance of multi-use pathways, efficient operation of a transit system (if implemented), and a well-coordinated implementation of management strategies for the Moose-Wilson Road. In addition, the corresponding requirements in housing, vehicles, office space, and administrative support necessary to support additional staff will contribute to the long-term impacts. Cumulative impacts will be long term, moderate to major, and adverse.

Because there would be no major, adverse impacts to visual resources, soils, vegetation, water resources, wildlife, or archeological resources for which conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Grand Teton National Park; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's resources and no unacceptable impacts.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The National Environmental Policy Act requires the NPS to identify an environmentally preferred alternative in the planning process. The environmentally preferred alternative is determined by applying the six goals listed in the National Environmental Policy Act (Section 101(b)), and shown below (42 U.S.C. § 4321-4347):

1. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations.
2. Assure safe, healthful, productive, and aesthetically and culturally pleasing surroundings for all Americans.
3. Attain the widest range of beneficial uses of the environment without degradation, risk to health and safety, or other undesirable and unintended consequences.
4. Preserve important historic, cultural, and natural aspects of our national heritage, and maintain (wherever possible) an environment that supports diversity and variety of individual choice.
5. Achieve a balance between population and resource use, which will permit high standards of living and a wide sharing of life's amenities.
6. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Identifying the environmentally preferred alternative comprised a qualitative assessment of how well each alternative would meet each specific goal. All of the alternatives would essentially meet Goal 1 (as listed above) and fulfill the responsibilities of each generation as trustee of the environment for succeeding generations. All alternatives would provide for a transit business plan that could result in implementation of a transit program under Alternatives 2, 3, 3a, and 4 that would reduce emissions and dependency on cars and fossil fuels as the program is expanded and used, thereby preserving more resources for future generations. In addition, all alternatives include testing of adaptive management strategies on the Moose-Wilson Road to preserve the character of that road for future generations. Alternatives 3, 3a, and 4 would provide for multi-use pathways and/or road shoulder improvements, which would help limit off-road impacts to resources and promote use of nonmotorized vehicles. Alternative 2 would also accomplish some of this through road shoulder improvements, although no pathways would be constructed.

All alternatives would also essentially meet Goal 2, but the additional safety provided by the multi-use pathways in Alternatives 3, 3a, and 4 would meet the goal more than the actions proposed in the other alternatives. Under Alternative 1, the potential for conflicts between vehicles and bicyclists sharing high volume park roadways would continue. In addition, opportunities for a wider range of "productive" uses of the Park and visitor enjoyment of park resources would not be achieved under this alternative. Alternative 2 would provide a small measure of safety for bicyclists by adding wider shoulders to a heavily traveled corridor within the Park to allow for a striped bicycle lane. In other areas, real or perceived safety risks for bicyclists would remain. Alternative 3 would provide multi-use pathways outside the road corridor and improved shoulders, and Alternatives 3a and 4 would provide multi-use pathways within and outside the road corridor in heavily traveled areas or areas where public safety issues for bicyclists are a concern. The pathways and shoulder improvements would begin to promote a wider range of "productive" uses of the Park.

Regarding Goal 3, Alternative 1 would not attain the widest range of beneficial uses of the environment. Alternative 1 does not provide for any multi-use pathways or improved shoulder areas; therefore, both real and perceived safety hazards would continue to discourage bicycling within the Park. Alternative 2 would provide some additional opportunities because the traveler information and improved shoulders would provide minor enhancements to the range of visitor experiences within the Park, but these would be limited in geographic scope.

Alternative 3 would attain "... the widest range of beneficial uses of the environment without degradation, risk to health and safety, or other undesirable and unintended consequences" compared to the other alternatives. The traveler information, pathways, and improved shoulders system would provide enhancements to the range of visitor experiences within the Park but not at the same spatial scope as Alternatives 3a and 4. Alternatives 3a and 4 would attain a wide range of beneficial uses of the environment because they provide the largest amount of multi-use pathways; however, they would also involve the greatest number of acres of new permanent disturbance of all the alternatives and the greatest change in the natural character of the Moose-Wilson Road corridor.

Alternative 3 would best meet Goal 4 due to its enhancement of individual choice while preserving important natural aspects of the Park. Alternative 3 would provide diversity and variety of individual choice with its provision of multi-use pathways and improved shoulders and enhanced communication regarding the variety of recreational options in the Park. Alternatives 3a and 4 would also enhance individual choice but would cause more disturbances to natural and visual aspects of the Park due to the increase in construction, paving, and vegetation clearing along the Moose-Wilson Road corridor and the multi-use pathways north of Jenny Lake. Construction of pathways along these environmentally sensitive corridors under Alternatives 3a and 4 poses a risk to vegetation and wildlife and may detract from the current experience. Alternative 1 would preserve important aspects of our national heritage; however, the diversity and variety of recreation and transportation choices would remain unchanged for both visitors and employees as well as heavily dependent on use of a private vehicle pending the results of the transit business plan, which may provide future transit options under the other alternatives. Alternative 2 would generally "...maintain, wherever possible, an environment which supports diversity and variety of individual choice." Visitors seeking to drive, bicycle, or hike within the Park would find opportunities to do so. Road restrictions would be applied only to Signal Mountain (time-limited closures for recreational purposes). These restrictions would inconvenience a small number of people for limited times during the peak summer season.

All alternatives would meet Goal 5 to a large degree. However, Alternative 1 would not balance population and resource use as well, since areas that are presently heavily used may be expected to become more so as visitation increases. Alternative 2 would provide information to allow visitors to make informed decisions about what they see and do in the Park so that they can become "self managing," dispersing to less crowded areas. To the extent that this premise is accurate, such a balance between visitation and resource use may result. Alternatives 3, 3a, and 4 would also supply this benefit and would further balance population and resource use by their promotion of multiple means of touring the Park.

Regarding Goal 6, all alternatives would potentially enhance the quality of renewable resources through the findings of the transit business plan, which could result in implementation of a pilot transit program within the Park under Alternatives 2, 3, 3a, and 4. Under Alternative 1, transportation within the Park would still be oriented toward the private vehicle rather than a mix of modes, including bicycles. Alternative 2 would better attain this goal, but transportation within the Park would still be oriented toward the private vehicle. Alternatives 3, 3a, and 4 would help to enhance the quality of renewable resources by providing greater opportunities for using mixed travel modes.

The NPS has identified Alternative 3, Improved Road Shoulders/Multi-Use Pathway as the environmentally preferred alternative. Aspects of this determination include the fact that Alternative 3 would not include multi-use pathways from North Jenny Lake to Colter Bay. This difference makes Alternative 3 more environmentally preferable than Alternatives 3a and 4 because it supports balanced use while posing fewer impacts to the environment.

Alternative 3 would minimize the anticipated adverse effects to visitor safety due to wildlife encounters, relative to Alternatives 3a and 4. Compared to Alternatives 3a and 4, it would cause fewer impacts to vegetation and habitat fragmentation because it would avoid forcing pathways into areas where construction could be technically challenging. Trying to construct pathways near roads with steep inclines

and drop-offs or through wetlands with dense, large trees and large infrastructure (dams and bridges) is more difficult, costly, and adverse to the environment. In addition to vegetation removal, erosion, and habitat destruction, there is a greater long-term risk to users.

In the Draft Plan/EIS, the NPS identified an environmentally preferred alternative, Alternative 3, as the preferred alternative for implementation. In the Final Plan/EIS, the NPS has identified Alternative 3a as the preferred alternative for implementation, while Alternative 3 remains the environmentally preferred alternative.

PUBLIC AND AGENCY INVOLVEMENT

In April 2000, the NPS undertook a transportation study to provide basic information regarding transportation issues in Grand Teton National Park. The study served as a foundation for the next step in the process, which was the development of a Transportation Plan, initiated in September 2001. The Park conducted a series of public scoping meetings and workshops in Jackson, Wyoming, during late 2001 and early 2002, and work continued on the Plan during 2002 and 2003.

In 2004, the NPS decided to scale back the Plan to focus on actions that could be achieved within a 5- to 10-year period. The NPS developed the range of reasonable alternatives, involving a variety of strategies to address transportation within the Park. On May 27, 2005, the Draft Plan/EIS was released for public review and comment. The NPS subsequently extended the comment period, which ended on August 25, 2005, providing a 90-day comment period. Details of this process are provided below.

Scoping, Public Meetings, and Outreach

An initial series of planning workshops was held on September 17-19, 2001, in Jackson, Wyoming. Separate meetings were conducted with approximately 30 park staff, representing a broad cross-section of functions (administrative, resource management, interpretation, and rangers); with the Technical Information Exchange Group; and with the public. Approximately 30 members of the public attended and participated in small breakout groups. The purpose of these meetings was to:

- Introduce the project.
- Reaffirm the Park's mission and significance.
- Assess existing conditions and identify desired future conditions.
- Identify actions that might help to bring about those desired future conditions.

To make the public aware of these meetings, an advertisement was placed in local newspapers (*Jackson Hole Guide* and *Jackson Hole Daily*) prior to the public workshops. About 1 week before each public workshop, the Park issued a press release, which typically resulted in publication of a related article in both papers on the day of the meeting. A newspaper staff member attended most of the public workshops, and an article about the meeting usually appeared in the papers the following week.

A press release, issued on December 6, 2001, initiated the first public scoping period for the Transportation Plan, which ran from December 13, 2001 through January 12, 2002. The press release was sent to all persons on a public contact list developed from Phase I and Transportation Plan public meeting sign-in sheets, requests, public agencies, the Technical Information Exchange Group, and the Park list. This scoping was conducted pursuant to completing an Environmental Assessment of the Transportation Plan proposal. Approximately 20 discrete comments were received.

A second round of planning workshops took place on December 11-13, 2001, in Jackson, Wyoming. Approximately 20 park staff, representing a range of functions, were briefed on preliminary plan alternatives and their comments recorded. The same briefing was repeated for the Technical Information Exchange Group and members of the general public, with the public session organized as an "open house" format. Maps depicting plan alternatives were displayed, and members of the public had an

opportunity to provide comments tied to specific geographic locations of proposals and on the range of proposed alternatives. Approximately 14 members of the public attended.

Alternatives were substantially revised following the December 2001 workshops. An interim review session was held in Jackson March 11-14, 2002, to provide an opportunity for feedback from park staff and to engage members of the Technical Information Exchange Group in providing feedback on specific aspects of the implementation of plan proposals. Approximately 30 members of the group attended one of about 15 small group sessions held throughout the week and had an opportunity to provide specific feedback on plan proposals.

The NPS conducted a second phase of public scoping (public meetings and solicitation of comments from state, county, and town agencies and organizations; park neighbors; and associated American Indian tribes) for the Transportation Plan from June 21, 2002 to July 20, 2002. Because potential impacts of the Plan were deemed uncertain, the NPS proceeded with preparation of an EIS for the project and an additional scoping phase. Approximately 20 discrete comments were received during this scoping phase.

A third round of planning workshops was held on June 24-26, 2002, in Jackson, Wyoming. The purpose of these meetings was to review modifications to plan alternatives based on feedback received in the December sessions, review preliminary impact analysis, and identify priorities for implementation. Approximately 30 members of the public attended. Publicity for these sessions was as for the initial round of planning workshops. In addition, display boards depicting the alternatives were posted in the main Jackson Post Office approximately 1 week prior to the meeting so area residents would have an opportunity to become familiar with proposals.

Public Comment

The NPS received 2,638 documents on the Draft Plan/EIS through the NPS Planning, Environment, and Public Comment (PEPC) website, fax, and direct mail. Some, but not all, commentors expressed a preference for or opposed one or more of the alternatives presented in the Draft Plan/EIS. Of those expressing an opinion, the most common was support for Alternative 4. Many of the comments received were form letters of various types. Some of the letters received have ideas that were outside the scope of the Draft Plan/EIS. The National Park Service values this input and where applicable it will be taken into account in future plans. Substantive comments were addressed in the Final EIS in Appendix D, pages 319-347.

Endangered Species Act Consultation

In compliance with Section 7 of the Endangered Species Act of 1973, as amended, consultation with the U.S. Fish and Wildlife Service (USFWS) has occurred throughout the planning process regarding potential effects to Endangered Species Act listed threatened or endangered species. Informal consultations resulted in the identification of special status species for consideration in the environmental analysis. The U.S. Fish and Wildlife Service submitted comments on the Draft Plan/EIS, including suggested mitigations, which the NPS incorporated into the analysis. On February 9, 2007, the U.S. Fish and Wildlife Service issued a *Final Biological Opinion for the Grand Teton National Park Transportation Plan (Formal Consultation No. ES-6-WY-07-F003).* The USFWS opinion stated that the Transportation Plan, as proposed, is not likely to jeopardize the continued existence of the grizzly bear or the gray wolf, nor will any critical habitat be affected.

Section 9 and Federal regulation pursuant to section 4(d) of the Endangered Species Act prohibit the take of endangered and threatened species, respectively, without special exemption. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of the Incidental Take Statement for grizzly bears provided in the Biological Opinion. The measures described on pages 31-33 of the biological opinion are non-discretionary and must be

implemented by the Park so that they become binding conditions of any permit issued by the Park, as appropriate, in order for the exemption in section 7(0)(2) to apply. The Park will comply with all mitigation measures in the biological opinion and will regulate the activity covered by the incidental take permit.

State Historic Preservation Office Consultation

Section 106 of the National Historic Preservation Act of 1966, as amended, requires federal agencies to consult with various interested parties, including the State Historic Preservation Officer, regarding federally funded or licensed undertakings that may affect historic properties listed in, or eligible for listing in, the NRHP. Consultation with the Wyoming SHPO has occurred throughout the planning process.

As stated earlier, the Wyoming State Historic Preservation Office (SHPO) concurred with the finding of eligibility for Moose-Wilson Road. Therefore, any actions proposed on the Moose-Wilson Road that affect the road itself or its viewshed will require further consultation between the SHPO and the NPS to identify appropriate mitigation to ensure compliance with Section 106 of the National Historic Preservation Act.

American Indian Consultation and Coordination

On May 31, 2006, Grand Teton National Park sponsored an information exchange with representatives of American Indian tribes on various topics, including the Transportation Plan/EIS. Additional consultation will occur to discuss pathway design locations and other tribal topics.

Indian tribes associated with Grand Teton National Park include:

- Crow Tribe.
- Northern Arapaho Tribe.
- Northern Cheyenne Tribe.
- Eastern Shoshone Tribe.
- Shoshone-Bannock Tribes.
- Blackfoot Tribe.
- Gros Ventre Tribe.
- Nez Perce Tribe.
- Confederated Salish and Kootenai Tribes.
- Coeur d'Alene Tribe.
- Confederated Tribes of the Colville Reservation.

The NPS will continue to consult with the Park's associated American Indian tribes throughout site-specific design planning and project implementation to avoid or mitigate damage to ethnographic resources. If these or other tribes subsequently identify the presence of ethnographic resources, appropriate mitigation measures will be undertaken in consultation with the tribes as well as the Wyoming SHPO. Mitigation measures could include designating alternative gathering areas, continuing to provide access to traditional and spiritual locations, and screening new development from traditional use areas.

Army Corps of Engineers Consultation

The Clean Water Act provides for the restoration and maintenance of the physical, chemical, and biological integrity of the nation's waters. Section 404 of the Act prohibits the discharge of fill material into navigable waters of the United States, including wetlands, except as permitted under separate regulations by the ACOE and EPA. The placement of fill material in wetlands should be avoided if there are practicable alternatives.

The majority of wetland impacts that could occur under Alternative 3a will affect wetlands associated with stream and river crossings, and the wetlands section adjacent to the road from Jackson Lake Dam to Jackson Lake Junction. Wetland impacts will occur mostly along existing transportation corridors; however, the exact alignment of the multi-use pathways has not yet been determined. In all areas where wetlands could potentially be affected to complete construction, mitigation measures will be implemented to preserve wetland functions and values, as well as to control erosion, noxious weeds, and spills of any construction-related fuels.

Compliance with Section 401 and 404 of the Clean Water Act will be completed by consulting with the ACOE, as necessary, prior to any new construction proposed in Alternative 3a. Wetland surveys will be performed to provide more accurate locations of wetlands and open water habitats within the project area. Wetlands will be delineated and marked prior to construction. It is the intent of the NPS to avoid wetlands during construction using cantilevered bridge crossings wherever possible in areas where bridges already exist. Construction activities will employ best management practices to reduce or largely eliminate any adverse effects to adjacent and nearby wetlands. Permanent losses of wetlands will be avoided, minimized, and if necessary, compensated for at a minimum ratio of 1:1. However, should potential adverse impacts to wetlands be identified, a Wetland Statement of Findings will be prepared.

CONCLUSION

As described in the *Mitigation Measures/Monitoring* section, all practical means to avoid or minimize environmental harm from the selected alternative have been adopted. Because there would be no major, adverse impacts to park resources for which conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation of Grand Teton National Park; (2) key to the natural or cultural integrity of the Park; or (3) identified as a goal in the Park's General Management Plan or other relevant NPS planning documents, there would be no impairment of the Park's resources and no unacceptable impacts. After analyzing the environmental impacts described in the Final Plan/EIS and public comments received, the NPS has determined that implementation of the Preferred Alternative will not constitute any unacceptable impacts or an impairment to Grand Teton National Park's resources and values and will not violate the NPS Organic Act.

ERRATA SHEET

TRANSPORTATION PLAN ENVIRONMENTAL IMPACT STATEMENT (EIS)

GRAND TETON NATIONAL PARK

Grand Teton National Park received a final Biological Opinion for the Final Transportation Plan (Formal Consultation No. ES-6-WY-07-F003) on February 9, 2007. Typically, during the National Environmental Policy Act (NEPA) process, formal consultations are conducted on draft plans/EISs and the biological opinions are included as part of final plans/EISs. However, some changes were made to the alternatives from draft to final Transportation Plan/EIS and the United States Fish and Wildlife Service (USFWS) requested to review this large document only once and provide comments on the final plan, instead of the draft plan. Therefore, a biological opinion was provided on the final EIS instead of the draft EIS. Consequently, this errata sheet serves to formally add the biological opinion as part of the Final Plan/EIS document. The combination of the Final Transportation Plan/EIS and this errata sheet form the complete and final record on which the Record of Decision (ROD) is based.

CHANGES IN THE EIS DOCUMENT

Add as Appendix E: *"Biological Opinion for the Grand Teton National Park Transportation Plan (Formal Consultation No. ES-6-WY-07-F003)***, Pages 349-388.**

Add as Appendix F: Wyoming State Historic Preservation Office Letter of Concurrence on the Determination of Eligibility for listing in the National Register of Historic Places (NRHP) for Moose-Wilson Road**, Page 389.**

Glossary, Change page numbers to **Page 390-394.**

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
5353 Yellowstone Road, Suite 308A
Cheyenne, Wyoming 82009

In Reply Refer To:
ES-61411/W.25/WY07F003
ES-6-WY-07-F003

FEB 09 2007

Memorandum

To: Mary Gibson-Scott, Superintendent, National Park Service, Grand Teton National Park, Moose, Wyoming

From: Brian T. Kelly, Field Supervisor, U.S. Fish and Wildlife Service, Wyoming Field Office, Cheyenne, Wyoming

Subject: Final Biological Opinion for the Grand Teton National Park Transportation Plan (Formal Consultation No. ES-6-WY-07-F003)

This memorandum transmits the U.S. Fish and Wildlife Service's (Service) final biological opinion based on our review of the September 2006 Grand Teton National Park Transportation Plan (Plan or Project) Final Environmental Impact Statement (FEIS) and the Project's effects on endangered, threatened, proposed and experimental non-essential species.

This final biological opinion addresses the effects of the Project on the threatened grizzly bear (*Ursus arctos horribilis*) and the nonessential, experimental population of the gray wolf (*Canis lupus*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act; 50 CFR § 402.14). Your September 25, 2006, letter requesting formal consultation was received on September 26, 2006.

Grand Teton National Park (GTNP or Park) is proposing to implement a new transportation plan that will include roadway shoulder improvements, multi-use pathways within and outside existing road corridors, traveler information systems, and a public transport business plan for a pilot transit system. In particular, pathway development and roadway shoulder improvements target cyclist and pedestrian use. Social trails developed in high human use areas will be improved and a pilot program for transit service from Jackson to Colter Bay and along the Moose–Wilson Road will be evaluated. Approximately 22 miles (mi) of multi-use pathways separated from the road corridor will be constructed between the southern Park boundary and Antelope Flats Road and from Moose Junction to North Jenny Lake Junction. An additional

18.8 mi of multi-use pathways will be constructed inside the road corridor from North Jenny Lake Junction to Colter Bay and between the Granite Canyon Entrance and Laurence S. Rockefeller (LSR) Preserve. The Moose-Wilson Road will be realigned in two areas. Future potential actions include providing improved roadway shoulders on Teton Park Road from Colter Bay to Lizard Creek Campground and between U.S. Highway 28/89 and Kelly.

In our August 1, 2005, memorandum regarding the Grand Teton National Park Transportation Plan Draft Environmental Impact Statement (DEIS), the Service agreed with the Park's assessment that the Project will likely have negligible impacts to the threatened bald eagle (*Haliaeetus leucocephalus*), Canada lynx (*Lynx canadensis*) and candidate yellow-billed cuckoo (*Coccyzus americanus*).

This final biological opinion is based on information provided in the FEIS, during numerous telephone conversations with Steve Cain of your staff, and other sources of information. A complete administrative record of this consultation is on file in the Cheyenne Field Office.

CONSULTATION HISTORY

Initial discussions regarding the GTNP Transportation Plan began several years ago. Detailed comments were first provided by the Service's Wyoming Field Office on August 1, 2005, in response to the DEIS for the Grand Teton National Park Transportation Plan dated May 27, 2005. Additionally, Chris Servheen, the Service's Grizzly Bear Recovery Coordinator, reviewed the DEIS and provided comments on August 8, 2005. The September 2006 FEIS for the GTNP Transportation Plan, which includes a biological assessment for the Project, along with a request for initiation of formal consultation was received by the Service on September 26, 2006. On October 25, 2006, the Service responded to GTNP with a memorandum indicating that all information required to initiate formal consultation was available and the Service expected to provide a biological opinion to GTNP no later than February 10, 2007. The consultation was assigned log number ES-6-WY-07-F003. Since October 2006, numerous telephone conversations regarding the Project have taken place between our respective staffs.

BIOLOGICAL OPINION
Grizzly Bear and Gray Wolf

DESCRIPTION OF THE PROPOSED ACTION

The FEIS addresses transportation-related actions in the Park and the John D. Rockefeller (JDR) Memorial Parkway. Transportation-related actions proposed in the FEIS include: (1) improvements to roadways and parking, (2) a pilot transit project within the Park, (3) improvement to road shoulders, (4) construction of new multi-use pathways, (5) improvements to developed areas, and (6) development of traveler information systems. The proposed action also includes plans for analyzing adaptive management strategies in order to gather information to determine the best way to maintain the existing character of the Moose-Wilson Road corridor while recognizing its sensitive wildlife, scenic, and historic values.

Roadways and Parking

Under the proposed action, improvements to Park roadways and parking areas would occur during scheduled maintenance or on an as needed basis. A combination of improvements may be implemented and could include: (1) road signs to increase awareness of wildlife crossings; (2) improved information on parking lot capacity and filled lots; (3) self-service information kiosks; and, (4) variable messaging signs. A pedestrian-crossing signal would be constructed at the Jackson Lake Dam crossing to increase visitor safety. The Moose-Wilson Road would be realigned in two areas under the proposed action, and the existing alignments would be abandoned and restored to natural conditions. Specifically, a section of the existing Moose-Wilson Road between Sawmill Ponds Overlook and a point approximately 0.33 mi (0.5 kilometers [km]) north of Death Canyon Road Junction would be abandoned and restored to natural conditions. Pavement would be removed and the roadbed would be regraded and revegetated to restore aspen and wetland habitat in this area. The road realignment between those two points would generally follow an old abandoned roadbed on the east side of the wetland and riparian areas. The other realignment, approximately 0.5 mi (0.8 km) east of Sawmill Ponds Overlook to a junction with the Teton Park Road near Moose, would intersect the Teton Park Road between the Moose Entrance Station and the access road to the Chapel of the Transfiguration. Realignment near the Moose Entrance Station would protect and facilitate a wildlife migration corridor in the Snake River riparian area. The aspen, cottonwood, and mixed deciduous-coniferous forests and wetlands located along this section of the Moose-Wilson Road provide important habitat for wildlife and distinct vegetative communities. The area to be restored differs notably from the surroundings, and the road passing through this area currently affects its wildlife habitat value. The Park may consider the addition of wildlife viewing areas as part of the realignment of the Moose-Wilson Road between Sawmill Ponds and Death Canyon Road. In other areas, the existing character of the road would be maintained and thus, there are no plans for further development in the form of pull offs or formal viewing areas. User-created pull offs may be formalized or barricaded as necessary to ensure resource protection and enhance visitor enjoyment and safety. A secondary benefit to realigning the road would be improved vehicle and bicycle safety because of improved line of sight.

Transit Service and Facilities

The proposed action would provide additional information concerning the transit services available to the public, including route maps and schedules at lodges within and outside the Park, visitor centers, and other locations where visitors may congregate. Completion of a public transport business plan (TBP) could result in operation of a pilot transit system in the Park.

Multi-use Pathways and Improved Shoulders

Under the proposed action, a distinction is made between pathways constructed within the road corridor and those constructed outside of the corridor. For the purposes of this Plan, the term "road corridor" generally means the engineered corridor in which the road exists including the cut and fill areas and clear zones. Under the proposed action, multi-use pathways would be constructed outside the road corridor along U.S. Highway 26/89/191 from the south boundary to Antelope Flats Road (a distance of approximately 9.4 mi [15.0 km]); along the Teton Park Road from Moose Junction to North Jenny Lake Junction (a distance of approximately 10.6 mi [17.0 km]); from North Jenny Lake Junction west to String Lake (a distance of approximately 1.5 mi [2.4 km]); and from Gros Ventre Junction to an existing pathway at Jackson Hole Golf and Tennis via Sagebrush Drive and Spring Gulch Road (a distance of approximately 1.0 mi [1.6 km]). A total of 22.5 mi (36.0 km) of multi-use pathways would be constructed outside existing road corridors. In general, pathways constructed outside of the road corridor would still be located within approximately 50 feet (ft) (15.2 meters [m]) of the road. The proposed action also includes construction of multi-use pathways inside the road corridor along the Teton Park Road from North Jenny Lake Junction to Colter Bay (approximately 15.5 mi [25.0 km]), except for a section between Signal Mountain Lodge and Jackson Lake Dam, where an improved shoulder would be constructed. In addition, improved shoulders would be used in other areas where constructability issues or unacceptable impacts to resources could occur. Multi-use pathways would also be constructed inside the road corridor along the Moose-Wilson Road from the Granite Canyon Entrance Station to the LSR Preserve (a distance of approximately 3.3 mi [5.3 km]). The Moose-Wilson pathway would begin at the Granite Canyon Entrance Station and extend to the north end of the unpaved section of road. At that point, the pathway would divert eastward and follow the long-established alignment of the unpaved levee access road to the new LSR Preserve (opening planned for 2007).

The Park is also retaining the option of adding improved shoulders in two other locations: (1) from Colter Bay north along U.S. Highway 89/191/287 to Lizard Creek campground, and (2) from the intersection of U.S. Highway 26/89/191 east along Gros Ventre Road to the town of Kelly. Theses actions would occur as part of future planning and, while they are being addressed in this consultation, the National Park Service may need to complete additional National Environmental Policy Act documentation for these segments.

Developed Areas

The proposed action would incorporate limited modifications and additions to infrastructure through normal park operations and maintenance and could include improved social trails, signs,

and way-finding, information kiosks, bicycle racks, variable-messaging signs, bulletin boards, and other traveler information systems in the following activity areas of the Park.

Moose
A variety of adaptive management strategies would be tested to address periodic congestion, wildlife, wetlands, and visitor experience issues. Between the Granite Canyon Trailhead and the LSR Preserve, the NPS may, over the next several years, test strategies such as direction of traffic flow or other techniques to manage vehicle use of the road.

South Jenny Lake
Social trails, signs, and way-finding would be improved in this area in order to create well-marked pedestrian pathways that would facilitate pedestrian travel between key points (i.e., the campground and the store), thereby lessening the use of private vehicles to travel short distances and reducing congestion. Social trails would likely be paved or graveled. Information kiosks would be added at South Jenny Lake.

Signal Mountain Area
Social trails, signs, and way-finding would be improved in this area in order to facilitate pedestrian travel between key points (i.e., the campground and the store), thereby lessening the use of private vehicles to travel short distances and reducing congestion. Information kiosks would be added at Signal Mountain.

Jackson Lake Lodge
Signs and way-finding would be improved in this area in order to facilitate pedestrian travel between key points. Information kiosks would be added at Jackson Lake Lodge.

Colter Bay
Parking, boat trailer parking, and circulation would be minimally redesigned to improve function and safety. Information kiosks would be added at Colter Bay.

Traveler Information

The proposed action would improve the amount and type of information available to Park visitors and the local community regarding transportation related issues. The Park would employ various information transmission methods, depending on effectiveness and as funds become available, which could include traveler information systems (localized radio transmissions with information on current park conditions), additional variable messaging signs, bulletin boards, an improved website, and information kiosks with current information at key locations. Signboards would list congested areas, such as popular areas or trailheads, and alternative destinations to visit in the Park, thus allowing visitors to plan their visit and assist the Park in managing visitor access without the aid of park staff at trailhead sites. Wildlife hazard signs, particularly for grizzly bears and moose, and in areas with low sight distance, could also be provided.

CONSERVATION MEASURES

As part of the Project design, the Park has committed to implement the following conservation measures (CM).

CM1. The Park would employ a comprehensive monitoring program as part of implementation of any alternative involving pathways. This program would include collection of information on pathway users (i.e., number, type, etc.) and impacts of use, as well as impacts of pathways on wildlife, vegetation, etc.

CM2. Pathways would be closed from dusk to dawn for all sections of the pathway system for public safety and to protect park resources. Pathway use during non-daylight hours poses a safety risk to visitors by increasing the probability of wildlife encounters in an area away from the roadway with limited visibility.

CM3. The Park would retain flexibility to implement pathway closures as needed, such as wintering wildlife and high bear use areas, but would strive to place pathways such that impacts to wildlife and dangerous wildlife-human encounters would be minimized.

CM4. Because some pathway sections may traverse sensitive wildlife areas, regulations would prohibit pets on pathways. However, guide dogs, used for the sole purpose of aiding a disabled person, would be allowed.

CM5. The Moose-Wilson Road is currently open to small personal vehicles (automobiles, pickup trucks, motorcycles, etc.). Commercial trucks, RVs, vehicles with trailers (except for horse trailers) and large tour buses are prohibited. The NPS would continue to prohibit trailers and large RVs on Moose-Wilson Road.

CM6. Appropriate Best Management Practices (BMPs) would be implemented (as appropriate) before, during, and/or after construction of proposed improvements to provide long-term protection of park resources. BMPs specific to the design cannot be proposed until the full design is complete and specifics of the proposed construction are known.

CM7. *Wildlife Monitoring and Research*

1. In order to understand more precisely wildlife associated pathway impacts, the Park would implement a research and monitoring program designed to evaluate a variety of pathway effects, beginning with the Phase 1 construction. Phase 1 includes the construction of approximately 7.7 mi [12.3 km] of multi-use pathway between Dornan's and South Jenny Lake Junction.

2. Wildlife monitoring would occur within the Park along the Moose-Wilson Road, from the south boundary to Moose, and from Moose to North Jenny Lake Junction. Additional monitoring needs would depend on the results of the initial monitoring and the subsequent decisions based on this monitoring and could cost up to $100,000 per year for the next 3 to 5-year period.

CM8. As outlined in the Grizzly Bear Conservation Strategy approved in 2005, the Park intends to meet "no net habitat loss" objectives within the grizzly bear Primary Conservation Area and as needed in other areas where prevention of human-wildlife conflicts is a primary concern.

CM9. The Park would take measures to reduce the potential for human-bear conflicts. Educate visitors on appropriate behavior when recreating in bear habitat. Provide bear-proof garbage containers in all developed areas. Require construction personnel to adhere to park regulations concerning food storage and refuse management.

CM10. "Bearwise" education would be conducted with all personnel involved in road and pathway construction and maintenance projects.

CM11. All food and other attractants would be properly stored at all times, and all food materials, garbage, and other attractants would be packed out on a daily basis if they cannot be stored in bear-resistant containers.

CM12. All road-killed wildlife carcasses found less than 100 yards from the roadside would be removed within 24 hours to a location away from roads and human activities.

CM13. Project crews (other than law enforcement personnel) would not carry firearms.

CM14. Project crews would carry bear pepper spray when conducting project activities and would be trained in bear safety.

CM15. All project crews working in grizzly bear habitat would meet standards for sanitation, attractant storage, and access.

CM16. All grizzly bear/human confrontations would be reported to Science and Resource Management personnel.

CM17. The Park would provide adequate cleaning of construction-related areas and garbage pick-up to limit wildlife access to human food.

CM18. The Park would enforce regulations that prohibit feeding of wildlife and that require proper food storage.

STATUS OF THE SPECIES AND CRITICAL HABITAT

Grizzly Bear

Life History

Home range and dispersal. Much of the following information is summarized from the Grizzly Bear Recovery Plan (U.S. Fish and Wildlife Service 1993); additional information, including

species description can be obtained in that document. Grizzly bears require large areas to fulfill all their basic biological needs, including food and shelter. Their home ranges average 50 to 500 mi^2 (130 to 1,300 km^2). Within these home ranges the grizzly bear uses a diverse mixture of forests, moist meadows, grasslands, and riparian habitats to complete its life cycle. Grizzly bears generally prefer large, remote areas of habitat that are isolated from human development for feeding, denning, and reproduction (USFWS 1993). Long distance travel habits of some grizzly bears increase the risk of contact with highway crossings, hunters, recreationists, and a variety of other human congregations. Isolation from human activities is extremely important for bear survival, as grizzly bears habituate to human foods quickly and become pests. Pest bears often must be eliminated or removed from developed areas. Avoiding human-caused bear mortality is a goal of the Grizzly Bear Recovery Plan (USFWS 1993) and is essential to maintaining a viable grizzly bear population.

Grizzly bears require dense forest cover for hiding and security. In the Yellowstone Grizzly Bear Ecosystem (YGBE), a 9,500 sq. mi. (23,300 km^2) area consisting of Yellowstone National Park (YNP), GTNP, John D. Rockefeller Memorial Parkway, the Gallatin, Shoshone, Bridger-Teton, Targhee, Beaverhead, and Custer national forests, as well as state, private and Bureau of Land Management (BLM) lands, lodgepole pine (*Pinus contorta*) forests are a large and dynamic part of grizzly bear habitat. Although the amounts of bear foods available in logged areas were similar to those of undisturbed control sites, grizzly bears generally did not use areas with human-caused habitat disturbances. The lack of security cover and overstory cover are believed to be major causes of this (Gillin et al. 1994).

Diet. The grizzly bear is an opportunistic omnivore that uses a wide variety of plant and animal food sources. Grizzly bears in the YGBE have the highest percentage of meat consumption in their diet of any inland grizzly bear population (Hilderbrand *et al.* 1999). Meat constitutes as much as 79% of the diet of male and 45% of the diet of female grizzly bears in the YGBE (Jacoby et al. 1999). Ungulates are an especially important food source for bears in the spring and fall (Knight *et al.* 1984), and use of these carcasses in the YGBE is well documented (Podruzny and Gunther 2001). Grizzly bears also eat small mammals such as pika and marmots, however, these mammals form a relatively minor portion of the bear's diet. Spawning cutthroat trout in streams surrounding Yellowstone Lake in YNP have been documented as an important food source for grizzly bears (Mattson and Reinhart 1995). Army cutworm moths (ACMs) (*Euxoa auxiliaries*) are also an important food source for bears in the YGBE (Mattson *et al.* 1991). ACMs congregate in remote, high altitude alpine talus areas and feed on alpine flowers. These moths provide important dietary fat in the fall, when grizzly bears are preparing for hibernation, and are also positively correlated with bear reproductive success (Bjornlie and Haroldson 2001). During times of great moth abundance, grizzly bears may eat up to 40,000 moths per day totaling 20,000 kilocalories/day (USGS 2005). Surviving moths migrate back to lower elevations to deposit their eggs, leaving the alpine areas between August and October. ACM congregation sites are in remote areas, and therefore potentially reduce human-bear conflicts by isolating the bears. Grizzly bears will also eat ants (Mattson 2001) and earthworms (Mattson *et al.* 2002).

The grizzly bear also makes use of a variety of vegetative food sources. Whitebark pine (*Pinus albicaulis*) seeds are an important fall source of food for grizzly bears in the YGBE, and bears

are known to consume whitebark pine seeds contained in red squirrel cone caches (Mattson and Reinhard 1997). In addition to supplying a food source high in fat, whitebark pine seed crops also serve grizzly bears by keeping them occupied at high elevations far from intense human use. Studies show that in years when the whitebark pine seed crop is low, there is an increase in human-bear conflicts (Haroldson *et al.* 2002) as well as human-caused grizzly bear mortality (Mattson et al. 1992). Other vegetative food source such as exotic clover species, yampa (*Perideridiea gairdneri*), biscuit root (*Lomatium cous*), and sweet cicily (*Osmorhiza chilensis*) are eaten almost exclusively in some years and seasons (Mattson et al. 1991). Other grizzly bear seasonal forage may include graminoids, horsetail, forbs, and fruits (whortleberry and huckleberry) (Knight *et al.* 1984, Mattson and Knight 1991). Bears also eat limited amounts of mushrooms.

Den site selection. Grizzly bears generally construct dens in areas far from human disturbance at an elevation of about 6,500 to 10,000 ft (2,000 to 3,050 m). Grizzly bears in the YGBE den from the end of September to the last week in April or early May, with entrance and emergence dates being affected by the gender and reproductive status of the bears. Denning bears can be disturbed by winter sport activities such as snowmobiling, and current studies are focused on minimizing disturbance by controlling access to important denning areas (Haroldson *et al.* 2002, Podruzny *et al.* 2002). If pregnant female bears are disturbed in their dens and this disturbance causes them to relocate to a new den prior to parturition, negative consequences can occur in the form of reduced cub fitness and survival (Linnell *et al.* 2000, Swenson *et al.* 1997).

Population Dynamic/Status and Distribution

Grizzly bear numbers have greatly declined during the past two centuries. It is believed that the grizzly bear population numbered over 50,000 individuals prior to the 18th Century. More recently, the estimated total population of grizzly bears as of 1993 stood at 800 to 1,000 individuals (USFWS 1993). The exact size of the grizzly bear population in the YGBE is currently unknown, as the very nature of the grizzly bear and the rugged terrain it inhabits makes any census efforts extremely difficult. In 1996, Eberhardt and Knight (1996) used several different estimates of population parameters to determine a minimum total population size of 245 grizzly bears, an estimated population size of 390 grizzly bears using marked females, and an estimated population size of 344 grizzly bears using distinct family groups. In 2003, the Interagency Conservation Strategy team identified the minimum population estimate for the grizzly bear population in the YGBE as of 2001 as 365 grizzly bears with a total population estimate of 531. Haroldson and Frey (2004) determined a minimum population estimate of 416 in both 2002 and 2003. The Interagency Grizzly Bear Study Team more recently estimated the population at 580 bears (USFWS 2005).

The grizzly bear was listed as a threatened species on July 28, 1975 (USFWS 1975). Historically, the grizzly bear ranged from the Great Plains to the Pacific coast, and from the northern U.S. border with Canada to the southern border with Mexico. Currently in the contiguous United States, the grizzly population has been reduced to roughly two percent of its

former range. It presently only occupies portions of Canadian British Columbia and Alberta, and portions of Montana, Idaho, Wyoming, Washington, and Alaska in the United States. In November 2005, the grizzly bear population in the GYE and surrounding area was proposed for delisting in November 2005 from the list of endangered and threatened species (USFWS 2005).

Conservation

In an effort to facilitate consistency in the management of grizzly bear habitat within and across ecosystems, the Interagency Grizzly Bear Guidelines (51 FR 42863, November 26, 1986) were developed by the Interagency Grizzly Bear Committee (IGBC) for use by land managers. The IGBC developed specific land management guidelines for use in each of the five ecosystems including the YGBE.

Recovery zones have been established for the grizzly bear and include areas large enough and of sufficient habitat quality to support a recovered bear population. According to the Grizzly Bear Recovery Plan (USFWS 1993), a recovery zone is defined as that area in each grizzly bear ecosystem within which the population and habitat criteria for achievement of recovery will be measured. Areas outside of recovery zones may provide habitat that grizzly bears will use, but are not considered necessary for the survival and recovery of this species. The area outside the recovery zone, but within the 10-mile buffer area, is managed to consider and protect grizzlies and their habitat whenever possible, recognizing that population and mortality data within this zone are collected and pertinent to recovery criteria. Beyond the 10-mile buffer, grizzly bear mortalities or populations are not considered when determining whether recovery goals have been met; however, protection is still accorded to the grizzly bear under the Act.

The Yellowstone Grizzly Bear Recovery Zone (Recovery Zone) covers approximately 5,438,000 acres (ac) (2,200,681 hectares [ha]) of primarily NPS and National Forest Service (NFS) lands, roughly 89 percent of the currently known distribution of the grizzly bears in the YGBE. YNP and GTNP make up 39.4 percent of the YGBE recovery zone. Private holdings and other ownership make up 2.1 percent of the recovery zone and the remaining 58.5 percent occurs on Forest Service lands (ICST 2003). Grizzly bears also occur in and use areas surrounding the Recovery Zone.

Areas within the Recovery Zone are stratified into Management Situation Zones 1, 2, or 3; each having a specific management direction according to the IGBC Guidelines (IGBC 1986).

> **Management Situation 1** (MS1): lands contain population centers of grizzlies, are key to the survival of the species, and are where management decisions will favor the needs of the bear even when other land use values compete.
>
> **Management Situation 2** (MS2): lands are those areas that lack distinct population centers and the need for this habitat for survival of the grizzly bear is more uncertain. The status of such lands is subject to review. Here, management will at least maintain those habitat conditions that resulted in the area being classified as MS2.

Management Situation 3 (MS3): designation is intended for lands where grizzly bears may occur infrequently. There is high probability that Federal activities here may affect the species survival and recovery. Management focus is on human-bear conflict minimization, rather than habitat maintenance and protection.

Recovery zones are divided into smaller areas called Bear Management Units (BMUs) for the purpose of habitat evaluation and monitoring. BMUs were designed to:

(1) Assess the effects of existing and proposed activities on grizzly bear habitat without having the effects diluted by consideration of too large an area;

(2) address unique habitat characteristics and bear activity and use patterns;

(3) identify contiguous complexes of habitat which meet year-long needs of the grizzly bear; and,

(4) establish priorities for areas where land use management needs would require cumulative effects assessments.

The low survival of adult females was identified as the single most important factor in causing the decline in the Yellowstone population prior to the mid-1980s (Knight and Eberhardt 1985). The current Grizzly Bear Recovery Plan (USFWS 1993) outlined demographic goals to objectively measure and monitor the recovery of the Yellowstone grizzly bear population. That plan defines a recovered population as one that can sustain the existing level of known and unknown human-caused mortality that exists in the ecosystem and is well-distributed throughout the recovery zone. Demographic recovery criteria outlined for the Yellowstone recovery zone include:

(1) Observation of 15 females with cubs of the year annually (unduplicated sightings) over a 6-year running average;

(2) occupation of 16 of the 18 BMUs by females with young from a running 6-year sum of verified observations, and no 2 adjacent BMUs unoccupied with a study to be initiated in the Plateau and Henry's Lake BMUs to determine the capability of these units to support females with cubs;

(3) known, human-caused mortality not to exceed 4 percent of the current population estimate (based on most recent 3-year sum of females with young); with no more than 30 percent of this total mortality limit of 4 percent by females; and,

(4) these mortality limits cannot be exceeded during any 2 consecutive years.

In addition, the existence of adequate regulatory mechanisms for population and habitat management through the development of a conservation strategy must be demonstrated.

In 1994, all population recovery parameters were achieved for the first time, and since 1997 these recovery criteria have not been exceeded in 2 consecutive years. In 2005, a revised method for calculating total population size and sustainable mortality levels for the YGBE was established (IGBST 2005). The revised method was appended to the Recovery Plan and included in the Conservation Strategy. By the end of 2005, the number of unduplicated females with cubs-of-the-year stood at 31 within the recovery zone and 10-mile perimeter (Haroldson 2006), resulting in a 6-year running average of 40 unduplicated females with cubs – more than double the recovery target of 15 females identified in the Recovery Plan (USFWS 1993). Sixteen of 18 BMUs had verified observations of female grizzly bears with young during 2003, 17 of 18 BMUs during 2004 (Podruzny 2005) and 18 of 18 BMUs in 2005 (Schwartz et al. 2006).

Threats

Isolation from human activities is extremely important for bear survival, due to the tendency of grizzly bears to rapidly habituate to human foods and become pests. Pest bears often must be eliminated or removed from developed areas. Avoiding human-caused bear mortality is a goal of the Recovery Plan and is essential to maintaining a viable grizzly bear population (USFWS 1993).

Primary threats to grizzly bears are associated with motorized and dispersed recreational use and forest management activities, including timber harvest. Recreation use includes hunting, fishing, camping, horseback riding, hiking, biking, off-road vehicle (ORV) use, and snowmobiling. Direct human-caused mortality is the most obvious threat to the grizzly bear. This kind of mortality can occur in several ways: (1) mistaken identification by big game hunters, (2) malicious killing, (3) defense of human life or property, or (4) management removals. Bears are removed to defend human life or property, usually because bears have become dangerously bold as a result of food conditioning and habituation at campsites, lodges, resorts, and private residences or they become habituated predators of livestock (Knight and Judd 1983).

Human-grizzly bear interactions have been increasing in the ecosystem due, in part, to increasing human use and development, increasing bear numbers, and bears and people both expanding their range of occupancy, increasing the chances of adverse encounters. The frequency of grizzly bear-human conflicts is inversely associated with the abundance of natural bear foods (Gunther *et al.* 2004a). That is, most grizzly bear mortalities are directly related to grizzly bear-human conflicts. In 2000, The Interagency Conservation Strategy reported known human-caused mortalities from 1992-98. Of 58 human-caused mortalities, 43 percent were hunting-related, 10 percent were poaching, 28 percent were food conditioned bears, 7 percent were related to livestock and 12 percent were accidental deaths. The greatest increase in recent years is self-defense in fall by big game hunters. According to a study by Gunther *et al.* (2004b), three areas were identified as having 71 percent of the 136 conflicts in the GYE in 2003. These were (1) the headwaters region of the Green, Snake, and Wind Rivers, (2) the Crandall Creek/Sunlight Basin area, and (3) the north and south forks of the Shoshone River (Gunther *et al.* 2004b).

There are a number of naturally or semi-naturally occurring factors that also may influence Yellowstone grizzly bear population levels. Whitebark pine provides an important food source

for grizzly bears. Blister rust, which has severe consequences on whitebark pine in the Northern Continental Divide Ecosystem, has been observed in the Yellowstone area. The Yellowstone cutthroat trout, which is an important food source for grizzly bears in the area, has been negatively influenced by introduced lake trout, which are less available to bears due to their deeper water habits (Reinhart *et al.* 2001). Winter killed ungulates are an important food supply, but ungulate populations vary widely in numbers and are influenced by weather conditions. The reintroduction of wolves has increased competition for ungulate prey and winter-killed carrion. Recent fires may have impacts on available food and cover over the short term, particularly to individual bears with heavily burned home ranges. Fire, in general, over time stimulates many forage species and berries preferred by bears, provided alternate food supplies and cover is available to maintain bears through the immediate aftermath of the fire.

ACMs, in some areas could be affected by pesticide use in agricultural areas, and due to their reliance on this food resource, there has been concern that certain pesticides may bioaccumulate in bears. Recent investigation into this possibility indicates that, while pesticides are present in ACMs in trace quantities, they are most likely not sufficient to cause direct adverse effects on, or biomagnify in bears (Robinson et al. 2006). This study cautions, however, that pesticide use is a relevant concern when addressing bear conservation issues. Due to their unique physiology including hyperphagia, brown fat accumulation and torpor, bears may assimilate and excrete certain chemicals in unique ways. Further research is recommended including sampling and analysis of blood, hair and fat samples in order to monitor this potential threat as available pesticides and their listed uses change.

Grizzly bears have also experienced displacement from available habitat (loss of habitat effectiveness due to human disturbance) due to increased human uses from (1) expanding road access in wilderness areas (Kasworm and Manley 1989), (2) ORV use, and (3) recreation use. They have also experienced loss of existing available habitat due to (1) increased development on private land related primarily to residential housing, and (2) potential for increased development on public land related primarily to oil/gas and recreation development. The grizzly bear also faces a decrease in value of available habitat due to (1) a loss of biodiversity (especially early succession related vegetative types), and (2) sub-optimal composition, structure, and juxtaposition of vegetation as a result of fire suppression, management strategies, and advancing succession. Finally, the bear faces isolation due to fragmentation of available habitat due to (1) major development of private land, (2) construction of major highways the produce blockage or restrict movement, (3) inadequate provision for linkage on minor roads and highways, and (4) large blocks of clearcuts.

Gray Wolf

Life History

Home range and dispersal. Wolf packs occur throughout the Greater Yellowstone Area (GYA) and in 1998, territory sizes averaged 359 sq mi (930 sq km) (range: 135-955 sq mi [350-2,473 sq km]); Smith et al. 1999). Based on studies in YNP, territories vary greatly in size, from 54 sq mi (140 sq km) to 552 sq mi. (1,430 sq km) (Bangs et al. 2005). Much of this variability is probably due to prey availability and abundance; in particular, the migratory behavior of elk. Wolf ranges

are concentrated in areas of high prey, consequently ungulate winter and summer range is closely associated with wolf activity. Low elevation river bottoms that are relatively free from human influence provide important winter range for ungulates and, therefore, wolves.

Wolves tend to be habitat generalists and, depending upon prey abundance, may occupy a variety of habitats including grasslands, sagebrush steppes, coniferous and mixed forests, and alpine areas. Despite this relative flexibility in their habitat needs, wolves are nonetheless very sensitive to human disturbance and require sufficient space with minimal exposure to humans (USFWS 1987). Wolf dispersal is highly variable. One wolf, #293F, dispersed a straight-line distance of 446 mi (718 km) from the YNP Swan Lake Pack to 30 mi (48 km) west of Denver, Colorado, in 2004 (USFWS et al. 2005). Bangs et al. (2005) indicated that in YNP, the wolf population (and other wildlife populations) is still adjusting to the environment and, in the future, will likely behave and interact differently. Additional information, including a general description of the species, can be found in Hansen (1986).

Diet. Wolves' selection of prey is variable and dependent on a variety of factors, including season, prey forage quality, and prey species involved and their population age structure, local adaptability and condition. Bangs et al. (2005) indicated that in YNP, wolves subsist mainly on elk and a small percentage of deer, moose, and bison. Elk were chosen 90 percent of the time, with a strong selection for calves and against cows. Wolves are much more successful hunting elk than bison because bison typically stand their ground, often occur in self-protective herds, and are much tougher and larger. Other prey species [than elk] comprise less than 1 percent of the wolves' winter diet and occur infrequently in summer scats. Small mammals also provide an important source of food during the non-winter months. Although it is difficult to identify what wolves are killing in the summer, they may eat as much as 30 percent less during this time.

Den site selection. Characteristics of den sites are highly variable and therefore difficult to qualify. Wolves are especially sensitive to disturbance from humans at den and rendezvous sites during the breeding period. Human activity near den sites can lead to pack displacement or physiological stress perhaps resulting in reproductive failure or pup mortality. Within YNP in 2005, 7 of 11 den sites were reused among packs that had previously denned (Jimenez et al. 2006).

Population Dynamics/Status and Distribution

Historically, the gray wolf occurred in the northern Rocky Mountains, including mountainous portions of Wyoming, Montana, and Idaho. The population decline was directly related to human activities, including elimination of prey species and extensive predator control efforts.

The subspecies of the northern Rocky Mountain wolf (*Canis lupus irremotus*) was initially listed as an endangered species in 1973 (38 FR 14678). Due to taxonomic concerns, the entire species (*Canis lupus*) was listed as endangered in the contiguous United States outside of Minnesota, where it was listed as threatened in 1978 (43 FR 9607). In 1990, Congress directed the appointment of a Wolf Management Committee to develop a plan for wolf restoration in YNP and central Idaho. The following year, Congress directed the Service to prepare an Environmental Impact Statement (EIS) to consider the reintroduction of wolves into these areas.

The final EIS was completed in May 1994 (USFWS 1994) and the final rules for the reintroduction were published in November 1994 (59 FR 60252; USFWS 1994a).

Wolves reintroduced into YNP and central Idaho are classified as "nonessential experimental" according to section 10(j) of the Act. In national parks and wildlife refuges, nonessential experimental populations are treated as threatened species, and all provisions of section 7 of the Act apply (50 CFR 17.83(b). Reintroduction efforts in YNP began in the winter of 1994-1995, when 14 wolves were released; 17 additional wolves were released in 1996 (Phillips and Smith 1996). At the end of 2005 there were at least 325 wolves occupying the GYE (Jimenez et al. 2006)

On April 1, 2003, in its Final Rule to reclassify the gray wolf and to establish two Special Regulations (68 FR 15804-15875; USFWS 2003), the Service announced that it was establishing three Distinct Population Segments (DPS) for the gray wolf. In addition, the Service downlisted wolves to threatened in the Western and Eastern DPS but in the Southwestern DPS wolves were to remain listed as endangered. The experimental population areas in central Idaho, Yellowstone, and the southwest remain unaffected by this listing action. The new threatened status in northern Montana and northern Idaho, Washington, Oregon, California, Nevada and the northern portions of Colorado and Utah [north of I-70] is accompanied by a special 4d rule that allows wolf management very similar but slightly more flexible than that already allowed in the experimental population areas (50 CFR § 17.40(n)).

The recovery criterion for wolf restoration is to maintain at least 30 breeding pairs in the northern Rockies in the 3 recovery areas including the GYA, central Idaho, and northwest Montana. The wolf population recovery objectives for Montana, Idaho and Wyoming were achieved in December 2002 and have been maintained in each successive year through 2006.

In 2005 the total wolf population in the Greater Yellowstone Recovery Area which includes parts of Wyoming, Montana and Idaho was 325 individuals including both adults and pups. The total gray wolf population in Wyoming declined from 272 wolves in 2004 to 252 wolves in 2005. There were a total of 13 wolf packs (7 breeding packs) within YNP, and at least 13 packs (9 breeding) outside YNP (Jimenez et al. 2006).

In 2006 wolf management plans in Montana and Idaho were approved and on January 29, 2007, the Rocky Mountain wolf population was proposed for removal from the list of threatened and endangered species. Wyoming's state law and wolf management plan are currently undergoing debate in the Wyoming State Legislature. A final decision is anticipated in 2007 on their ability to provide for sufficient conservation of Wyoming's portion of the recovered northern Rocky Mountain wolf population.

Conservation

As stated in the final rule for the reintroduction (59 FR 60252), hunting, trapping, and animal control programs are prohibited or strictly regulated in national parks and are also closely regulated by State and Federal law and policy. There are few paved roads, so wolves should encounter fast moving vehicles infrequently. If wolf depredation of livestock is suspected, clear

evidence must be presented to justify potential control actions by authorized personnel only. The use of lethal toxicants in areas occupied by wolves is prohibited.

In general, current wolf management consists of monitoring wolf population dynamics and gathering ecological data relevant to the wolf's return. To determine territory sizes and locate dens, collared wolves are monitored using both ground-based and aerial telemetry. By observing dens, birthing dates are estimated and the number of pups counted. In addition, wolf deaths are investigated, and wolf-prey relationships are documented by observing wolf predation directly and by recording characteristics of wolf prey at kill sites. Collaborative research is ongoing and represents pioneering work on wolf ecology.

Threats

Predator control measures such as poisoning, trapping, and shooting were the primary reasons for the decline of the wolf throughout its range. As the human population in the West grew, hunting pressure on ungulate species increased, causing a decline in wolf prey species (Hansen 1986). At the same time, numbers of livestock increased across the West. Wolves occasionally preyed upon livestock as their natural prey was depleted (Hansen 1986), resulting in aggressive wolf control efforts which greatly contributed to the decline of the species.

Human-caused mortality typically accounts for about 85 percent of all known adult wolf death in Montana, Idaho and Wyoming. The largest causes of wolf death in 2005 were lethal agency control of wolves that attack livestock, intraspecific strife and disease (Jimenez et al. 2006). As human populations in the west, especially in rural areas continue to expand, it is likely that human-wolf conflicts will also increase. In a large part, the continued successful recovery of the gray wolf in the Rocky Mountain west outside of national parks and other protected areas is dependant on the attitudes and actions of private landowners who most often come into contact with the species. Addressing the concerns of those who control lands surrounding conservation areas is vitally important in minimizing threats to the species. It is equally important that landowners understand the very real ecosystem benefits of having healthy gray wolf populations in the west. Future scientific investigation may help to enhance public awareness of the positive role that wolves play in maintaining healthy populations of big game animals through control of disease transmission within wild ungulate populations, and hence between wild and domesticated ungulates; preservation of forest and riparian ecosystems, and perpetuation of many sensitive species of plants. Limiting human-wolf conflict will also require ongoing development, understanding and use of innovative techniques that aid in limiting adverse impacts to the livestock, and livelihood, of residents of the Rocky Mountain west.

ENVIRONMENTAL BASELINE

Regulations implementing the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed State or Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation process.

The action area is defined at 50 CFR 402 as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The ecological impacts of linear developments generally expand beyond the actual physical linear footprint. The width of this zone of influence (ZOI) varies and is influenced by individual species' sensitivity, landscape, topographic features, and the patterns of human use (e.g., type, timing, and frequency). Puchlerz and Servheen (1994) summarized studies regarding the influence of roads on grizzly bear habitat use, documenting a range of distances between 100-914 m wherein bears appear to show avoidance. They recommended 0.3 mi (0.48 km) as a standard buffer for grizzly bear/motorized access management. The Final EIS analysis used 1,312 ft (400 m) as a buffer on either side of the centerline of the primary roads and the centerline of the proposed multi-use pathways. The Service believes this is a sufficient buffer for analysis of the effects of the action on grizzly bears and gray wolves.

Past projects, their effects to the grizzly bear and gray wolf, and the level of incidental take have been considered in the environmental baseline. Previous formal consultation in the vicinity of the Project in GTNP addressed a highway reconstruction project and grazing permits. The projects are: (1) domestic livestock grazing in Grand Teton National Park (WY9351, May 2, 2006); (2) the Federal Highway Administration's Highway 287/26 Reconstruction project, aka Togwotee Pass Highway (WY5998, August 22, 2003); and (3) the Forest Services' issuance of commercial grazing permits on the Shoshone National Forest (WY7155, September 30, 2004) and the Bridger-Teton National Forest (WY4715, December 3, 2002). These projects, their effects to the grizzly bear and gray wolf, and the level of incidental take have been considered in the environmental baseline for this biological opinion.

Grizzly Bear

Status of the Species within the Action Area

GTNP is within the Yellowstone Recovery Zone and 125,000 ac (50,586 ha) are within the Primary Conservation Area (PCA) for grizzly bears identified in the Conservation Strategy for the Grizzly Bears in the Greater Yellowstone Ecosystem (USFWS 2003). The proposed project is within portions of the Bechler Teton, Buffalo Spread Creek (Subunit 1), and Two Ocean Lake BMUs identified in the Conservation Strategy. The PCA, or grizzly bear recovery zone as it was initially described (USFWS 1982), was delineated to define an area within which to focus grizzly bear recovery efforts after the species was listed in 1975. At the time the boundary was delineated, grizzly bears were uncommon in GTNP. Currently, however, grizzly bears are established in large areas outside of the PCA in GTNP (Schwartz et al. 2002), and the line does not represent grizzly bear distribution in the GTNP area.

Grizzly bears are relatively common in the southern GYA, including the Gros Ventre Mountains southeast of GTNP, and are regularly observed in the Teton Mountain Range north of Paintbrush Canyon and the Badger Creek drainage. Grizzly bears have been observed on the valley floor south of Triangle X Ranch, at Jackson Lake, in Death Canyon, and south of GTNP in the vicinity

of Teton Village and along the Snake River south of Jackson (Schwartz et al. 2002). In addition, a young male radiocollared grizzly bear used the Bradley-Taggart Lakes and White Grass areas for several weeks in 2005, providing empirical evidence for the continued southward movement of grizzly bears in the Teton Range.

Management of grizzly bears and their habitat in the Park follows IGBC guidelines (USFS 1986) and the Park's Human-Bear Management Plan (NPS 1989). These guidelines were developed to provide effective direction for the conservation of grizzly bears and their habitat to Federal agencies responsible for managing land within the recovery zone. The objectives for managing grizzly bears in the Park (NPS 1989) are to: (1) restore and maintain the natural integrity, distribution, and behavior of grizzly bears, (2) provide opportunities for visitors to understand, observe, and appreciate grizzly bears, and (3) provide for visitor safety by minimizing bear/human conflicts, by reducing human-generated food sources, and by regulating visitor distribution.

The Park has been highly successful in promoting grizzly bear recovery and reducing bear-human conflicts (e.g., property damages, incidents of bears obtaining human food, bear-inflicted human injuries) and human-caused bear mortalities in the Park. Recreational and administrative facilities, human activities, and human waste (garbage and sewage) in GTNP are managed in a manner that minimizes the potential for human-caused grizzly bear mortalities. Bears that are typically wary of humans will often tolerate people at close distances when carcasses are available due to the high quality of this bear food. Carcasses on or within 330 ft (100 m) of roads may create large "bear-jams" and potentially pose a hazard to bears that could be hit by vehicles while approaching carcasses to scavenge. To reduce these risks, road-killed carcasses of large animals located on and within approximately 330 ft (100 m) of roads are dragged away from roads or are loaded into trucks and hauled to areas away from visitor activity.

In the past 20 years, two grizzly bears have been removed from GTNP for management reasons: one for cattle depredation and one because of human habituation and food conditioning. The latter bear came to GTNP as a nuisance bear after being relocated from the northern to the southern part of the ecosystem. An additional bear that had broken into a cabin at the AMK Ranch in Grand Teton National Park was killed after being relocated from Grand Teton National Park to Montana where it continued its nuisance behavior. Management removals within the PCA and a 10-mile (16.1-km) buffer around it are counted against recovery parameters (USFWS 2003), mortality limits in the Conservation Strategy (USFWS 2003), and likely those associated with the delisting proposal (Interagency Grizzly Bear Study Team 2005).

Eighteen grizzly bears have been road-killed within the GYA since 1977 (S. Cain 2007, pers. comm.), including two within GTNP. Additionally, a young male grizzly bear found dead within 330 ft (100 m) of Teton Park Road near Jackson Lake Junction in May 2003 may have been struck by a vehicle. Although the cause of death was undetermined, injuries sustained by the bear and believed to contribute to its death were, in part, consistent with expected trauma associated with a vehicle collision.

Status of Species Habitat within the Action Area

The following is a brief description of the habitat and cover types associated with the four road segments (U.S. Highway 26/89/919, Teton Park Road, North Park Road, Moose-Wilson Road) associated with the proposed action and their potential to provide grizzly habitat,

U.S. Highway 26/89/191

This segment of the road is from the south boundary of the Park north to Antelope Flats Road (approximately 9.4 mile (15.1 km)). This segment of the roadway system is not prime habitat for grizzly bears because of the openness and lack of cover. However, grizzly bears could move through these areas in search of food or security.

Teton Park Road

This segment of the road is along Teton Road from Moose Junction to North Jenny Lake Junction (approximately 10.6 mi [17.1 km]): west to String Lake (approximately 1.0 mi [1.6 km]), and from Gros Ventre Junction to an existing pathway at Jackson Hole Golf and Tennis via Sagebrush Drive and Spring Gulch Road (approximately 1.0 mi [1.6 km]). This segment of the roadway system is not prime habitat for grizzly bears because of the openness and lack of cover. However, grizzly bears could move through these areas in search of food or security.

North Park Road

This segment of the road is along the Teton Park Road from Jenny Lake Junction to Coulter Bay (approximately 15.5 mi [25 km]). This area supports a well-established population of grizzly bears and the proposed pathway passes through willow, sage/grass, and mixed lodgepole, spruce-fir cover types where grizzly bears are common. Beginning with Jackson Lake Junction and heading north, the pathway would occur immediately adjacent to the grizzly bear Recovery Zone (USFWS 2003).

Moose-Wilson Road

This section of the proposed project traverses habitat types preferred by grizzly bears. The scattered aspen, tall shrublands, and spruce/fir cover types provide food and cover for grizzly bears in the southern parts of the Park, but at this time they occur infrequently in this area.

Factors Affecting Species Environment Within the Action Area

General Factors

Past and ongoing actions outside the action area and within the grizzly bear Recovery Zone are likely to affect resident grizzly bears moving through the action area whether their home range is within or adjacent to the Park. These actions include:

- livestock grazing (which would impact grizzly bears through management actions),

- private land development,
- firewood cutting,
- road use/management,
- timber harvest,
- recreation activities that lead to human-bear conflicts (especially big game hunting),
- vegetation management,
- wildland and prescribed fire, and
- loss or decline of important food sources (e.g., whitebark pine seeds due to fire suppression).

Existing Road System within Grizzly Bear Habitat

There are approximately 140 mi (225 km) of paved and 70 mi (113 km) of unpaved roadway within the Park. Key paved roadways include U.S. Highway 26/89/191, North Park Road (U.S. Highway 89/191/287), and the Teton Park Road. Other paved roads include Gros Ventre Road, most of Antelope Flats Road, most of the Moose-Wilson Road, and various access roads to campgrounds, trailheads, and Forest Service lands. Unpaved roadways include a mix of improved (i.e., a portion of the Moose-Wilson Road, Two Ocean Lake Road, and Mormon Row) and unimproved facilities (i.e., RKO Road). Over most of U.S. Highway 26/89/191, the speed limit is 55 miles per hour (mph), slowing to 45 mph at intersections. On the Teton Park Road and North Park Road, the speed limit is mostly 45 mph. Speed limits on other roadways vary depending on the facility type and location.

Direct effects of existing roads within the action area are primarily associated with permanent loss of habitat caused by paving of roads and pullouts. Roads in the Park cover 1,819 ac (736 ha) within the designated grizzly recovery zone and 22,220 ac (8,992 ha) within the remainder of the Park. This is a historic and on-going direct effect. Grizzly bears in the Park are habituated to these existing roads, but vehicle-bear collisions are not uncommon.

Gray Wolf

Status of the Gray Wolf within the Action Area

The following information is taken from the FEIS unless otherwise indicated. From 1999 to 2005, the Teton Pack was the only wolf pack using GTNP consistently, although observations of other wolves with unknown pack affiliations were regularly reported in the Park. In 2006 there were 10 adult individuals that made up the Teton Pack. The traditional home range of the Teton Pack includes a small portion of GTNP, with the remainder of its territory within the Gros Ventre River drainage. However, in 2006 wolf dynamics in the Park changed considerably. The Teton Pack's territory was usurped by a new pack, now known as the Buffalo Pack (consisting of 10-11 adult individuals), which denned in an area traditionally used by the Teton Pack. Two other new packs also denned in the Park in 2006, one in the Pacific Creek area (Pacific Creek Pack made up of 9-10 adult individuals) and another in the south end of the Park (Sage Pack made up of 5 adult individuals).

In 2006, the Teton Pack used areas mostly south and east of the Park and is not believed to have denned. Other packs in the area include the Gros Ventre, Flat Creek, and Victor-Driggs Packs. The Gros Ventre Pack resided in the vicinity of the Park from 1999-2001 and may have ventured into the Park from time to time. However, the pack stopped producing pups after two adult Gros Ventre wolves were killed in control actions in summer 2000. Based on the lack of visual observations, winter track counts, and reported sightings, the Gros Ventre Pack is believed to have been defunct until 2006. Wolf activity in Jackson Hole is concentrated in areas with dense populations of big game; and in the winter, wolves frequent elk feeding grounds on the National Elk Refuge and in the Gros Ventre River drainage, Elk Ranch, and Buffalo Valley areas, and some parts of the south end of the Park. Thus, wolves are considered present in small numbers throughout the project area.

Wolf management in the Park consists of monitoring wolf population dynamics and gathering ecological data relevant to the species' return to the GYA. To determine territory sizes and locate dens, collared wolves are monitored using both ground-based and aerial telemetry. By observing dens, birthing dates are estimated and the number of pups counted. In addition, wolf deaths are investigated and wolf-prey relationships are documented by observing wolf predation directly and by recording characteristics of wolf prey at kill sites. Collaborative research is ongoing and represents pioneering work on wolf ecology. All management and monitoring activities are closely coordinated with the Service.

Factors Affecting the Environment of the Gray Wolf

In the vicinity of the Project, activities currently occurring that may adversely affect the wolf and/or its environment are limited. These activities include livestock grazing, private land development, vegetation management, high levels of human presence associated with recreational activities, and use of roads. However, the effects of these types of activities appear to be localized in nature. Given the continued expansion of the wolf population, these activities do not appear to have had population level effects nor have they adversely affected wolf recovery efforts.

EFFECTS OF THE ACTION

Under section 7(a)(2) of the Act, "effects of the action" refers to the direct and indirect effects of an action on the species or critical habitat, with the effects of other activities interrelated or interdependent with that action. Direct effects are immediate effects of the proposed action on the species or its habitat. Indirect effects are those caused by the proposed action and are later in time, but still are reasonably certain to occur (50 CFR 402.02). The effects of the action are added to the environmental baseline to determine the future baseline and to form the basis for the determination in this opinion. Should the Federal action result in a jeopardy situation and/or adverse modification conclusion, the Service may propose reasonable and prudent alternatives that the Federal agency can take to avoid violation of section 7(a)(2). The effects discussed below are the result of direct and indirect impacts of implementing the proposed project.

Grizzly Bear

Roads

The IGBC Taskforce provided standardized definitions for primary and secondary roads and standardized methods to measure road densities and define analysis areas as a result of grizzly bear research information on open and total road densities and grizzly bear core areas (IGBC 1994, 1998). The Service considers the management of roads one of the most important factors in grizzly bear habitat conservation and the IGBC Taskforce guidelines as the best direction with which to manage roads on Federal lands.

Research has confirmed the adverse impacts of roads on grizzly bears (Mace et al. 1996). Negative impacts associated with roads and excessive road densities influences grizzly bear population and habitat use patterns in numerous, widespread areas. The Grizzly Bear Compendium (IGBC 1987) summarized impacts reported in the literature including:

- Avoidance/displacement of grizzly bears away from roads and road activity;
- Changes in grizzly bear behavior, especially habituation to humans, due to ongoing contact with roads and human activities conducted along roads;
- Habitat loss, modification, and fragmentation due to roads and road construction, including vegetative and topographic disturbances; and
- Direct mortality from road kills and other factors resulting from increased human-bear encounters.

Mortality is the most serious consequence of roads in grizzly bear habitat. Mortalities result directly from collisions with vehicles and illegal shooting or indirectly through habituation to human presence.

Habituation

Continuous exposure to human presence, activity, noise, and other elements can result in habituation, which is essentially the loss of a grizzly bear's natural wariness of humans. Increases in human access into grizzly bear habitat can lead to the habituation of grizzly bears to humans. Habituation in turn increases the potential for conflicts between people and grizzly bears. Habituated grizzly bears often obtain human food or garbage and become involved in nuisance bear incidences, and/or threaten human life or property. Such grizzly bears generally experience high mortality rates as they are eventually destroyed or removed from the population through management actions. Habituated grizzly bears are also more vulnerable to illegal killing because of their increased exposure to people. In the Yellowstone region, human-caused mortality of habituated grizzly bears occurs over three times as often as non-habituated grizzly bears (Mattson et al. 1992).

The specific relationship between roads and the mortality risk to grizzly bears is difficult to quantify. The level of human use of roads is one of several factors influencing the mortality risk associated with any road. Research supports the premise that roads facilitate human access into grizzly bear habitat, which directly and indirectly increases the risk of mortality to grizzly bears.

Subadult grizzly bears frequently traverse long distances or unknown territory, increasing the likelihood of encountering roads, human residences or other developments where human food or other attractants are available, increasing the potential for habituation and/or conflicts with people. In the Yellowstone ecosystem, roads impacted individual age and sex classes of grizzly bears differently. Subadults and females with young were most often located near roads, perhaps displaced into roaded, marginal habitat by dominant grizzly bears (Mattson et al. 1987, Mattson et al. 1992).

The presence of Park roads alone does not necessarily result in direct mortality of grizzly bears. However, the proximity to human population centers, resulting in increased human use of Park roads and multi-use pathways, and dispersed recreation in habitat around roads can pose considerable risks to grizzly bears.

Displacement

Some grizzly bears, particularly subadults, readily habituate to humans and consequently suffer increased mortality risk. Conversely, other grizzly bears under-utilize or avoid otherwise preferred habitats that are frequented by people. Such under-utilization of preferred habitat represents modification of normal grizzly bear behavior. Negative association with roads arises from the grizzly bears' fear of vehicles, vehicle noise and other human-related noise around roads, human scent along roads and hunting and shooting along or from roads. Grizzly bears that experience such negative consequences learn to avoid the disturbance and annoyance generated by roads. Such animals may not change this resultant avoidance behavior for long periods after road closures. Even occasional human-related vehicle noise may continue to cause grizzly bears to avoid roads.

All the factors contributing to direct links between roads and displacement from habitat have not been quantified. As with mortality risk, the level of road-use by people is likely an important factor in assessing the potential displacement caused by any road. Contemporary research, however, indicates that grizzly bears consistently were displaced from roads and habitat surrounding roads, often despite relatively low levels of human use (Mattson et al. 1987, McLellan and Shackleton 1988, Aune and Kasworm 1989, Kasworm and Manley 1990, Mace and Manley 1993, Mace et al.1996).

Grizzly bears can also become conditioned to human activity and show a high degree of tolerance especially if the location and nature of human use are predictable and do not result in overtly negative impacts for grizzly bears (Mattson 1993). In Glacier National Park, Jope (1983) suggested grizzly bears in parks habituate to high human use and showed less displacement, even in open habitats. Yonge (2001) found that grizzly bears near Cooke City, Montana, were willing to consistently forage in very close proximity to areas experiencing high levels of human use if cover was sufficient and energetically efficient feeding opportunities were present. Both Mattson (1993) and Yonge (2001) postulated that areas with higher levels of human activity might have a positive effect for bears by serving as a kind of refugia for weaker population cohorts (subadults and females with cubs) seeking to avoid intra-specific competition (adult males). However, Mattson qualified this observation by adding that the beneficial effects vary

depending on whether hunting is allowed, and how closely the human population is regulated. Further, food conditioned grizzly bears were much more likely to be killed by humans.

Road shoulder improvements are not expected to significantly impact grizzly bear habitat. The roads have been in place for many years and grizzly bears in the area are habituated to the location and activities on the roadways within the Park. The shoulder improvements would be a short-term construction activity that would not decrease habitat and

Multi-Use Pathways

Effects to grizzly bears of the proposed multi-use pathway would have similar effects to *Habituation* and *Displacement* as discussed above for roads. In addition, people traveling on trails during the day are likely a predictable occurrence to which grizzly bears could readily habituate, minimizing the amount of energy-demanding responses (Jope 1985, 1982). During her study on the interactions of grizzly bears to hikers in Glacier National Park, Jope (1982) found that grizzly bears were more aggressive towards hikers on trails with less use. The reactions of grizzly bears to people on foot are stronger in low human-use areas than in high human-use areas (McClellan and Shackleton 1988, McLellan and Mace 1985). Grizzly bears tended to move away from small (1-2 people) groups of hikers more often than from larger (>8 people) groups (Jope 1985).

When bears were within 150 m of humans, the strongest reactions were to people on foot as opposed to moving vehicles, heavy industrial equipment, fixed-wing aircraft, and helicopters (McLellan and Shackleton 1989). Their subsequent behavior was much different than their initial behavior, resulting in some type of movement in most cases (Jope 1982). McLellan and Mace (1985) reported that grizzly bears displayed strong flight responses to people on foot in areas more than 500 m from a primary or secondary road. They also found that grizzly bears displayed a more moderate response to people walking on primary or secondary roads or at a residence. Jope (1985, 1982) found that initial and subsequent behavior of grizzly bears did not differ when the bears were greater than 150 m away from humans. However, McClellan and Shackleton (1989) found that in these areas of low human use, grizzly bears fled every interaction. They also found that grizzly bears displayed stronger reactions to people on foot when they were greater than 490 ft (150 m) away (likely to be remote areas) than when they were closer than 490 ft (150 m) (likely to be near roads and residences). No difference in reactions was found between people on foot and other motorized equipment at this distance (McLellan and Shackleton 1988). Responses to people on foot were greater when grizzly bears were in the open rather than in cover (McLellan and Shackleton 1988, Haroldson and Mattson 1985).

In addition to aggressive behavior, grizzly bears may also respond to high human non-motorized use through modification of temporal activity patterns, modification of activity to a time when contact with humans is least likely, or withdrawal from habitat that is heavily used by people (Jope 1982). All of these possibilities may result in direct mortality, displacement of grizzly bears and decreased habitat effectiveness (McLellan and Shackleton 1989, IGBC 1987). These responses may be result in high costs energetically and may be disruptive to grizzly bears. During their study on the potential energetic effects of mountain climbers on grizzly bears, White et al. (1999) indicate that the disturbance of

foraging grizzly bears may displace bears from feeding areas and possibly reduce their food intake. A reduction in the amount of food and an increase in energy expended as a result of the disturbance could affect the bear's ability to acquire nutrient reserves needed for successful reproduction (White et al. 1999).

Providing multi-use pathways in the Park presents new human safety challenges for Park managers and the public. Wildlife hazards associated with pathways would be similar to those associated with trails, with one important exception: bicycles and other wheeled vehicles, which are not permitted on trails but would be permitted on pathways, are able to move quickly and quietly through the landscape. This would greatly increase the probability of sudden, surprise encounters between bicyclists and wildlife and increase the chances of aggressive responses. These encounters take place due to the absence of two important mitigating factors: the slow speed of pedestrians and loud noise of motorized vehicles. Areas near noisy streams or where sight distances are minimized by terrain, daylight, or vegetation would have increased hazards, as would using any portion of a pathway after dark.

Encounters with grizzly bears are of particular concern because of their propensity to respond to surprise encounters with aggression that can result in serious human injuries or death. Higher frequencies of encounters can be expected in higher quality habitats for each of the species concerned. Pathway alignments that stay as close to the road as possible, maximize sight distances, and avoid high quality habitat can help mitigate, but not eliminate, these hazards (Herrero et al. 1986). Signage and other forms of education would also mitigate risk. However, few data exist from which to base predictions of encounter rates because precedents for combining pathways with large protected areas and high densities of large, dangerous mammals are rare.

Some information on bicyclist encounters with grizzly bears is available from Herrero and Herrero (2000), from which the following information was taken. In North America, 33 records were found for bicyclist encounters with grizzly bears in which the bear responded aggressively. Five of these encounters occurred on roads used by cars and the remaining occurred on trails or nearby. In most cases, grizzly bears charged or chased bicyclists. In 12 percent (4 of 33) of encounters, bicyclists were injured by grizzly bears; in 75 percent of these cases (3 of 4), injuries were serious (requiring more than 24 hours in a hospital). The majority (22 of 33) of encounters occurred in Banff and Jasper National parks, where mountain biking is allowed on some trails. Ninety-five percent of encounters in which distance was estimated, the bicyclist first became aware of the bear at less than 163.8 ft (50 m), which Herrero (1985) defined as a "sudden encounter." Importantly, while not conclusive, the data suggest that rates of sudden encounters with bears are much higher among bicyclists than pedestrians. Indeed, in Canada's Kluane National Park (Kluane National Park 1997), park managers state that "Mountain bikers travel quickly and quietly on the trails. As a result, they are much more likely to have surprise encounters with bears and other wildlife than with hikers and horses." Most of the encounters documented by Herrero and Herrero (2000) and discussed above occurred on dirt trails where bicycles would be expected to travel more slowly and make more noise than they would on a paved pathway.

Gray Wolf

Roads

As stated in the FEIS, direct effects of roads include vehicle-caused mortality, as well as permanent loss of habitat resulting from the paved roads and pullouts. Individuals from the Teton and Sage packs regularly cross U.S. Highway 89/191 between Moran and Moose and between Moose and the Park's east boundary. Additionally, other wolves, with unknown pack affiliations, have been observed crossing Park roads. Thirteen wolves have been killed as a result of vehicle collisions in the GYA from 1995 to 2001, including 3 wolves killed within the Park between 2004 and 2005. Therefore, it is reasonable to expect that one or more wolves could be struck and killed by vehicles using Park roads during the life of the Plan. Furthermore, road way realignment along the Moose-Wilson Road will result in additional permanent loss of up to 15.3 ac (6.2 ha) of habitat for wolves and their prey. However, some of this construction may occur in areas within the zone of influence of existing roads, thus currently receiving a limited amount of use since wolves and their prey tend to avoid road corridors.

Indirect effects of road use and maintenance likely include a reduction in habitat effectiveness within the zone of influence of the road, affecting approximately 14,500 ac (5,868 ha). Wolves and their prey are likely currently displaced from much of this area and will continue to be. Additional areas of displacement are likely to occur during construction activities, possibly expanding outside the current zone of influence of the roads. None of the proposed activities are within 1 mile of known wolf dens or rendezvous sites.

Multi-Use Pathways

The primary direct effect of the multi-use pathways is the loss of 67.57 ac (27.3 ha) of habitat for the wolf and its prey. However, much of this lost habitat will be adjacent to or within the existing zone of influence of existing roads, so the loss of habitat is less significant that it would be if the area were currently unaffected by roads.

Indirect effects associated with the construction of the pathways and use by pedestrians and bicyclists include human-caused displacement of wolves from adjacent areas, potential habituation to humans, and possibly other behavior modifications. An increase in off-trail use associated with pathway access may further reduce habitat effectiveness. None of the multi-use pathways are within 1 mile (1.6 km) of known wolf dens or rendezvous sites.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Grizzly Bear

Cumulative Effects within the Action Area

Several privately owned and State of Wyoming-owned in-holdings are present in Grand Teton National Park; depending upon future human activities occurring on these properties, grizzly bears could be negatively affected. For many years, GTNP has attempted to secure these in-holdings with lifetime leases and out-right purchases and has been very successful in doing so. No large-scale developments or land-based projects have been proposed for these in-holdings.

There are plans to convey the LSR Preserve (approximately 1,100 ac [445 ha]) in southern Grand Teton National Park) to the Federal government in 2007. However, the LSR Preserve is presently a private in-holding in the Park. Although the future plans include removal of most of the development that has been present on the ranch, the current owners will develop an interpretive facility and trail system prior to the conveyance of the property.

Cumulative Effects Adjacent to the Action Area and Grizzly Bear Recovery Zone

Cumulative effects of actions outside the action area and within the grizzly bear Recovery Zone are likely to affect resident grizzly bears moving through the action area whether their home range is within or adjacent to the Park. These actions include:

- livestock grazing (which would impact grizzly bears through management actions),
- private land development,
- firewood cutting,
- road use/management,
- timber harvest,
- recreation activities that lead to human-bear conflicts (especially big game hunting),
- vegetation management,
- wildland and prescribed fire,
- loss or decline of important food sources (e.g., whitebark pine seeds due to fire suppression),
- potential reduction in elk and bison populations.

The recent Teton County, Wyoming, approval of the Snake River Associates development plan for Teton Village on private land adjacent to the Park's southern boundary could have additional cumulative, long term impacts on grizzly bears. This development will likely result in a higher number of visitors to the Park and greater associated dispersed recreational use. This may be particularly true in the southwest corner of the Park, where excellent bear habitat exists. Grizzly bears will likely colonize this area, even though it is several miles outside of the PCA.

These activities would cumulatively contribute to increased mortality risks, reduce availability of secure habitat, and diminish habitat effectiveness for grizzly bears. However, the total cumulative impact of

the above-listed activities, as well as other unidentified actions occurring within the grizzly bear recovery zone, do not appear to be adversely affecting population recovery, as evidenced by the expanding grizzly bear population in the GYA (Eberhardt and Knight 1996; Schwartz et al. 2002; Pyare et al. 2004).

Eighteen grizzly bears have been road-killed within the GYA since 1977, including two within the Park. The cumulative impacts of these actual losses and possible future road kills are likely to be minor because road kills are not a significant source of mortality to the GYA population.

Elk hunting, as part of the Park's annual elk reduction, occurs on approximately 66,600 ac (26,952 ha) of the Park's backcountry, 29,100 ac (11,776.4 ha) of which is in the recovery zone. Increases in backcountry recreation by humans in and around the Park would negatively affect grizzly bears if human-bear encounters increase. Hunting of elk and other big game also occurs outside of and adjacent to the Park's boundaries. Conflicts between grizzly bears and hunters appear to be increasing (Gunther et al. 2004) and these encounters are a potential source of bear mortality. In 2004, seven of 19 (37 percent) human-caused grizzly bear mortalities in the Yellowstone ecosystem were attributed to hunter conflicts. In 2005 mortalities attributed to hunters dropped to 4 of 14 (29 percent). However, unless hunter-related conflicts increase substantially, the cumulative adverse effects of these conflicts at current grizzly bear population levels are likely to be minor. Land and wildlife management agencies, including Grand Teton National Park, have active programs designed to educate backcountry users about grizzly bears and the requirements designed to reduce human-bear conflicts.

Gray Wolf

Cumulative Effects within the Action Area

Cumulative effects within the action area are the same as has been discussed above for the grizzly bear. Activities on privately owned and State of Wyoming-owned in-holdings could negatively affect the gray wolf. Grand Teton National Park's success in future attempts to secure these in-holdings with lifetime leases and out-right purchases may lessen the potential effect to the gray wolf from activities on these in-holdings.

Cumulative Effects Adjacent to the Action Area

Cumulative effects adjacent to the action area are largely the same as has been discussed above for the grizzly bear, although there is little concern regarding wolf/human interactions that may result from many of the activities discussed in the grizzly bear section. Activities most likely to affect wolves include livestock grazing and associated management actions, private land development, road use/management, timber harvest, and potential reduction in elk and bison populations. In 2005, 41 gray wolves were killed in control actions in the GYA to reduce livestock depredations (Jimenez et al. 2006). It is probable that similar levels of control will occur in the future. These activities will likely cumulatively contribute to increased mortality risks, reduce availability of secure habitat, and diminish habitat effectiveness for the gray wolf in the GYA. However, the total cumulative effect of the above-mentioned activities, as well as others yet to be identified, does not appear to be adversely affecting population recovery, as evidence by the expanding gray wolf population in the GYA (Jimenz et al. 2006).

CONCLUSION

After reviewing the current status of the threatened grizzly bear and the nonessential, experimental population of the gray wolf, the environmental baseline for both species in the action areas, the effects of the action and the cumulative effects, it is the Service's opinion that the Transportation Plan, as proposed, is not likely to jeopardize the continued existence of the grizzly bear or the gray wolf. No critical habitat has been designated for grizzly bears or gray wolves, therefore, none will be affected. Implementing regulations for section 7 (50 CFR 402) define "jeopardize the continued existence of" as to "engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species." Our conclusion that the proposed action is not likely to jeopardize the continued existence of grizzly bears or gray wolves is based primarily on the information presented in the FEIS prepared for the proposed Transportation Plan, information in our files, and informal discussions between the Service, the Park and other personnel from other agencies and groups. Our rationale for these non-jeopardy conclusions is summarized below.

Grizzly Bear

Grizzly bears in the GYE have increased in numbers and expanded in range during the past two decades (Schwartz et al. 2006). Female grizzly bears with young have been observed, leading to the assumption that females are able to establish home ranges and find the resources needed to survive and reproduce outside the recovery zone.

The Service concludes that some adverse affects may occur to grizzly bears as a result of the proposed Transportation Plan. The existing level of impacts of roads apparently has not been of serious consequence to the GTNP grizzly bear population and the proposed Transportation Plan with the construction of multi-use pathways would slightly increase the current level of impact of paved roads within the Park. The best available information suggests the YGBE grizzly bear population is stable to increasing and is apparently expanding its range to the south to GTNP.

Gray Wolf

Project effects on the gray wolf are anticipated to be minor. Although the Project could result in the loss of up to two wolves through automobile collisions on Project-associated roads, this loss is consistent with ongoing road-associated loss of wolves in the GYA. This level of effect, even when combined with effects form other activities in the GYA, has not resulted in population level effects, as is evidenced by an increasing and expanding wolf population.

As previously discussed, wolves reintroduced into the GYA are designated as a nonessential experimental population in accordance with section 10(j) of the Act. In the final rule establishing the nonessential experimental population of gray wolves in YNP in Wyoming, Idaho, and Montana, the Service reviewed all ongoing and proposed use of the parks and refuges and determined that none are likely to jeopardize the continued existence of the gray wolf nor will they adversely affect the success of the reintroduction program (59 FR 60252). Additionally, by definition, a "nonessential experimental

population" is not essential to the continued existence of the species. Therefore, no proposed action impacting a population so designated could lead to a jeopardy determination.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation when it actually kills or injures listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as intentional or negligent act or omission which creates the likelihood of injury to listed species by annoying it such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

Although we have anticipated the possible loss of up to two wolves through vehicle collisions on roads associated with the Project and considered the loss in the accompanying biological opinion, this incidental take statement does not address the loss of wolves. As indicated previously, incidental take of wolves was addressed in the final rule establishing the nonessential experimental population of gray wolves in YNP in Wyoming, Idaho, and Montana (59 FR 60252). The final rule states, "There would be no violation of the Act for unintentional, non-negligent, and accidental taking of wolves by the public, provided the take was incidental to otherwise lawful activities, it did not result from negligent conduct lacking reasonable due care or was in defense of human life."

The measures described below are non-discretionary and must be implemented by the Park so that they become binding conditions of any permit issued by the Park, as appropriate, in order for the exemption in section 7(o)(2) to apply. The Park has continuing duty to regulate the activity covered by this incidental take statement. If the Park (1) fails to assume and implement the terms and conditions or (2) fails to require permittees to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or other documents, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Park must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement [50 CFR §402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

Grizzly Bears

The Service anticipates 2 grizzly bears (adult or juvenile) in a 10-year period could be incidentally taken as a result of the proposed action. One grizzly bear is expected to be lethally taken through a vehicle collision associated with primary roads, and; one lethally taken through management removal associated

with the multi-use pathway.

Considering the history of vehicle-bear collisions on Park roads, the Service anticipates the proposed action will not exacerbate or alleviate the potential for vehicle-bear encounters and these mortalities will continue; one grizzly bear is expected to be taken as a result of the roads. The proposed multi-use pathway is expected to increase grizzly bear-human encounters and potentially result in the management removal and ultimate mortality of one grizzly bear.

EFFECT OF THE TAKE

As analyzed in this biological opinion, the Service concludes that this level of anticipated incidental take is not likely to result in jeopardy to the species. Critical habitat has not been designated for the grizzly bear; therefore none would be affected.

REASONABLE AND PRUDENT MEASURES

The Service believes the following Reasonable and Prudent Measures (RPM) are necessary and appropriate to minimize impacts of incidental take of grizzly bears:

RPM 1	The Park shall reduce the possibility of human/grizzly bear interactions.
RPM 2	The Park shall provide education to visitors, particularly those using the multi-use pathways, regarding how to limit and reduce interactions with grizzly bears in the action area.
RPM 3	The Park shall monitor the effects of project construction activities, as well as ongoing use of roads and multi-use pathways, on the grizzly bear.

TERMS AND CONDITIONS

The Service believes no more than 2 grizzly bears will be incidentally taken as a result of the proposed action. The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take is reached, such incidental take represents new information requiring re-initiation of consultation and review of the reasonable and prudent measures provided. The Federal agency must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

To Implement Reasonable and Prudent Measure #1:

1. The Park will close multi-use pathways from 0.5 hours before sunset until 0.5 hours after dawn for all sections of the pathway system for public safety and to protect Park resources. Pathway use during non-daylight hours and the hours before sunset and after dawn (crepuscular period)

poses a safety risk to visitors and grizzly bears by increasing the probability of grizzly bear and other wildlife encounters.

2. In the event of a grizzly bear-human encounter during the crepuscular period (2 hours before dusk and 2 hours after dawn) on any portion of the multi-use pathway, the Park will contact the Service to determine if reinitiation of consultation may be necessary to determine more appropriate hours of closure for the multi-use pathway.

3. The Park will retain flexibility to implement pathway closures as needed, such as wintering wildlife and high bear use areas, but would strive to place multi-use pathways such that impacts to wildlife and grizzly bear-human encounters would be minimized.

4. The Park will provide bear-proof garbage containers along multi-use pathways

5. The Park will remove all road-killed wildlife carcasses found less than 100 yards from the roadside within 24 hours to a location away from roads, multi-use pathways and other human activities.

6. Park regulations will prohibit pets on multi-use pathways. However, guide dogs, used for the sole purpose of aiding a disabled person, would be allowed.

7. The Park will continue to allow only small personal vehicles (automobiles, pickup trucks, motorcycles, etc.) on the Moose-Wilson Road to lessen the effect of grizzly bear-vehicle collisions.

8. The park will implement the following terms and conditions associated with construction activities:
   a. Require construction personnel to adhere to park regulations concerning food storage and refuse management.
   b. All food and other attractants would be properly stored at all times, and all food materials, garbage, and other attractants would be packed out on a daily basis if they cannot be stored in bear-resistant containers.
   c. Project crews (other than law enforcement personnel) would not carry firearms.
   d. Project crews would carry bear pepper spray when conducting project activities and would be trained in bear safety.
   e. All project crews working in grizzly bear habitat would meet standards for sanitation, attractant storage, and access.
   f. The Park would provide adequate cleaning of construction-related areas and garbage pick-up to limit wildlife access to human food.

To Implement Reasonable and Prudent Measure #2:

9. The Park will educate visitors and multi-use pathway users on appropriate behavior when recreating in bear habitat, especially appropriate responses to surprise encounters with grizzly bears.

10. "Bearwise" education would be conducted with all personnel involved in road and pathway construction and maintenance projects.

11. All construction and maintenance personnel will be instructed in the proper use of pepper spray in case of grizzly bear encounters.

To Implement Reasonable and Prudent Measure #3:

12. The NPS will employ a comprehensive monitoring program upon implementation of any part of the proposed action involving construction and maintenance of multi-use pathways. This program would include collection of information on pathway users (i.e., number, type, etc.) and impacts of use, as well as effects of pathways on grizzly bears and grizzly bear-human encounters.

13. The Park will report all grizzly bear/human confrontations to Science and Resource Management personnel

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation Recommendations (CR) are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

CR1. The Park should participate in ongoing interagency efforts to identify, map and manage linkage habitats essential to grizzly bear movement. Please contact the Service's grizzly bear recovery coordinator at (406) 243-4903 or the Montana Ecological Services Field Office at (406) 449-5225 for information.

CR2. The Park should monitor the use of multi-use pathway during the crepuscular period (2 hours before dusk and 2 hours after dawn) to determine the potential for grizzly bear-human encounters during this period when grizzly bear prey (ungulates) may be more available and could attract bears to portions of the multi-use trail.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects of benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION REQUIREMENT

This concludes formal consultation on the action outlined in your September 26, 2006, request for formal consultation on the Grand Teton National Park Transportation Plan. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your assistance in the conservation of endangered, threatened, and proposed species. If you have any questions or comments on this final biological opinion or your responsibilities under the Act, please contact Jan McKee of our staff at the letterhead address or by phone at (307) 772-2374, extension 242.

cc: FWS, Grizzly Bear Recovery Coordinator, Montana (C.Servheen)
GTNP, Management Assistant, Moose, WY (G. Pollock)
GTNP, Senior Wildlife Biologist, Moose, WY (S. Cain)
WGFD, Statewide Habitat Protection Coordinator, Cheyenne, WY (V. Stelter)
WGFD, Non-Game Coordinator, Lander, WY (B. Oakleaf)

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Wyoming Department of State Parks and Cultural Resources
WYOMING STATE HISTORIC PRESERVATION OFFICE
BARRETT BUILDING, 3rd FLOOR, 2301 CENTRAL AVE, CHEYENNE, WY 82002
Phone: (307) 777-7697 Fax: (307) 777-6421
http://wyoshpo.state.wy.us

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Mary Gibson Scott, Superintendent
Grand Teton National Park
National Park Service
P.O. Drawer 170
Moose, WY 83012

RE: Cultural Resource Inventory Report recording the Moose Wilson Road (SHPO File # 0804JPP004)

Dear Superintendent Scott:

Thank you for consulting with the Wyoming State Historic Preservation Office (SHPO) regarding the above referenced project. We have reviewed the project report and find the documentation meets the Secretary of the Interior's Standards for Archaeology and Historic Preservation (48 FR 44716-42). We concur with your finding that site 48TE1205 (Moose Wilson Road) is eligible for listing in the National Register of Historic Places.

This letter should be retained in your files as documentation of a SHPO concurrence. Please refer to SHPO project #0806JPP004 on any future correspondence regarding this project. If you have any questions, please contact Jeff Pappas at 307-777-7828.

Sincerely,

Jeff Pappas

Jeff Pappas, Ph.D.
Historian & National Register Coordinator