

National Park Service
U.S. Department of the Interior

GLACIER NATIONAL PARK

Montana

Waterton-Glacier International Peace Park



Construction of Park Housing at East Glacier and Swiftcurrent Developed Areas Environmental Assessment

December 2015



*Swiftcurrent Housing Area, Glacier National Park.
GNP GIS image.*



*Swiftcurrent Housing Fire Cache, Glacier
National Park. NPS photo.*



*East Glacier Ranger Station Apartment Duplex,
Glacier National Park. NPS photo.*

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Construction of Park Housing at East Glacier and Swiftcurrent

Environmental Assessment

Summary

Glacier National Park proposes to build three new residential structures on the east side of the park; one at East Glacier and two at Swiftcurrent. The new housing would replace beds lost when 10 dilapidated residential trailers were removed from the St. Mary housing area. Communities outside the park are currently not able to provide adequate housing options. Therefore, additional NPS housing is needed on the east side of the park to accommodate seasonal staff during the summer.

This Environmental Assessment (EA) evaluates two alternatives: A no action alternative and an action alternative. Under no action, no new housing would be built. Under the action alternative, a one-story fourplex and a two-story eightplex would be constructed in the Swiftcurrent housing area at Many Glacier, and a one-story duplex would be constructed at the East Glacier NPS developed area.

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) to provide the decision-making framework that 1) analyzes a reasonable range of alternatives to meet the objectives of the proposal, 2) evaluates potential issues and impacts to Glacier National Park's resources, and 3) identifies mitigation measures to lessen the degree or extent of these impacts.

Resource topics analyzed include park operations, historic structures, wildlife, Canada lynx and grizzly bears, and vegetation and soils. All other resource topics were dismissed because the project would result in little to no impact to those resources. No major effects are anticipated as a result of this project. Public scoping was conducted in accordance with NEPA.

Public Comment – How to Participate

If you wish to comment on this EA, you may post comments online at <http://parkplanning.nps.gov/EastSideHousing> or mail or hand deliver comments to Superintendent, Glacier National Park, Attention: *East Side Housing EA*, PO Box 128, West Glacier, Montana 59936. This EA will be on public review for 30 days. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. Although you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. Comments will not be accepted by fax, email, or in any other way than those specified above. Bulk comments in any format (hard copy or electronic) submitted on behalf of others will not be accepted.

Table of Contents

PURPOSE AND NEED	1
Introduction	1
Background	2
Impact Topics Retained for Further Analysis	4
Impact Topics Dismissed from Further Analysis	4
ALTERNATIVES	8
Alternatives Carried Forward	8
Alternative A – No Action (No New Housing)	8
Alternative B – Construct Replacement Housing at Swiftcurrent and at the East Glacier NPS Developed Area	8
Mitigation Measures.....	11
Alternatives Considered and Dismissed.....	13
Alternative Summaries	15
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES	17
Cumulative Impact Scenario.....	17
Park Operations	19
Affected Environment	19
Impacts of Alternative A—No Action	20
Impacts of Alternative B—Construct Replacement Housing at Swiftcurrent and East Glacier	21
Historic Structures and Cultural Landscapes.....	22
Affected Environment	22
Impacts of Alternative A—No Action	24
Impacts of Alternative B—Construct Replacement Housing at Swiftcurrent and East Glacier	25
Wildlife	27
Affected Environment	27
Impacts of Alternative A—No Action	29
Impacts of Alternative B—Construct Replacement Housing at Swiftcurrent and East Glacier	29
Canada Lynx and Grizzly Bears (federally listed as threatened).....	31
Affected Environment	31
Impact of Alternative A—No Action.....	34
Impacts of Alternative B—Construct Replacement Housing at Swiftcurrent and East Glacier	34
Vegetation and Soils	37
Affected Environment.....	37
Impacts of Alternative A—No Action	38
Impacts of Alternative B—Construct Replacement Housing at Swiftcurrent and East Glacier	38
COMPLIANCE REQUIREMENTS, CONSULTATION, AND COORDINATION	40
Internal and External Scoping.....	40
Agency Consultation	40
Native American Consultation	40
Environmental Assessment Review and Recipients	41
List of Preparers and Contributors	41
REFERENCES.....	43
APPENDIX A	1
Alternatives, Suggestions, and Concerns from Public Scoping	1

List of Figures and Tables

Figure 1: Glacier National Park housing areas and nearby communities.	3
Figure 2: Locations for proposed housing at Swiftcurrent.	9
Figure 3: Location for proposed housing at East Glacier.	10
Figure 4: Project area and Swiftcurrent Ranger Station Historic District.	23
Figure 5: Project area and East Glacier Ranger Station Historic District.....	24
Figure 6: The Many Glacier Valley and Swiftcurrent housing area (project area).	27
Figure 7: Wildlife connectivity area between the Swiftcurrent housing area and Many Glacier picnic area.	29
Table 1: Suggestions and alternative locations dismissed from further consideration.....	13
Table 2: Summary of alternatives	15
Table 3: Environmental impact summary by alternative.....	15

PURPOSE AND NEED

The purpose of Glacier National Park is to:

- preserve and protect natural and cultural resources unimpaired for future generations (1916 Organic Act);
- provide opportunities to experience, understand, appreciate, and enjoy Glacier National Park consistent with the preservation of resources in a state of nature (1910 legislation establishing Glacier National Park); and
- celebrate the on-going peace, friendship, and goodwill among nations, recognizing the need for cooperation in a world of shared resources (1932 International Peace Park legislation).

The significance of Glacier National Park is explained relative to its natural and cultural heritage:

- Glacier's scenery dramatically illustrates an exceptionally long geological history and the many geological processes associated with mountain building and glaciation;
- Glacier offers relatively accessible, spectacular scenery and an increasingly rare primitive wilderness experience;
- Glacier is at the core of the "Crown of the Continent" ecosystem, one of the most ecologically intact areas remaining in the temperate regions of the world;
- Glacier's cultural resources chronicle the history of human activities (prehistoric people, Native Americans, early explorers, railroad development, and modern use and visitation) and show that people have long placed high value on the area's natural features; and
- Waterton-Glacier is the world's first international peace park.

Introduction

Glacier National Park (GNP) is an approximately one million acre park in the Northern Rockies of northwestern Montana, along the United States-Canadian border. The park straddles the rugged mountains of the Continental Divide, and is at the center of the Crown of the Continent Ecosystem. The Crown of the Continent ecosystem encompasses nearly 18 million acres (72,000 square kilometers) of mountainous terrain between the southern regions of British Columbia and Alberta in Canada and the Blackfoot River south of Montana's Scapegoat Wilderness. Together with Canada's Waterton Lakes National Park, Glacier National Park forms the Waterton-Glacier International Peace Park, the world's first international peace park. The parks are listed together as a World Heritage Site and separately as International Biosphere Reserves. Outstanding natural and cultural resources are found in both parks.

During the peak visitor season, Glacier National Park adds approximately 300-350 seasonal employees to its staff of approximately 150 permanent and term employees, with over 130 seasonal employees stationed on the park's east side in recent years (the number of seasonal employees hired each year varies, depending on funding and administrative needs). Many seasonal employees require housing within the park. Over the last few years, the removal of 10 deteriorated trailers from the housing area in St. Mary has resulted in a shortage of employee housing on the east side of the park.

The National Park Service (NPS) is therefore proposing to build additional residential structures in the Swiftcurrent housing area at Many Glacier and the NPS developed area at East Glacier. The purpose of the proposal is to provide needed housing for seasonal and permanent NPS employees on the east side of Glacier National Park. New residential structures are necessary to replace beds lost from the removal of 10 trailers from the St. Mary housing area, and to begin implementing a decision in the park's 1999 GMP to relocate NPS infrastructure off the Divide Creek floodplain. In accordance with the 2006 NPS Management Policies (section 9.4.3), the park is authorized to provide housing necessary to support the NPS mission.

The purpose of this Environmental Assessment (EA) is to examine alternatives and environmental impacts associated with the proposal. This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, Council on

Environmental Quality regulations for the implementation of NEPA (40 CFR § 1500-1508), DOI regulations for the implementation of NEPA, (43 CFR §46), and the NPS Director's Order (DO)-12 (*Conservation Planning, Environmental Impact Analysis, and Decision-Making*).

Background

Seasonal employees constitute over half of all park employees at peak season. Seasonal personnel (as well as interns and volunteers) provide critical visitor services, monitor and protect natural and cultural resources, and perform essential facility maintenance and administrative functions. The park's seasonal workforce has included many long-time returning employees, and the availability of suitable housing is necessary to attract and retain qualified seasonal and permanent employees. The lack of safe and functional housing on the park's east side has been problematic for several years, especially for seasonal employees. Inadequate housing on the east side of the park has contributed to low employee morale, and may influence some seasonal employees' decision not to return.

While outlying communities on the east side of the park may be within a reasonable commuting distance, they do not provide a reliable source of short-term housing. The park's east boundary abuts the Blackfeet Indian Reservation, and Browning is the largest nearby town (population approximately 1000) at approximately 30 miles from St. Mary and 47 miles from Swiftcurrent (Figure 1). Babb (population approximately 175) is 9 miles from St. Mary and 13 miles from Swiftcurrent. East Glacier Park (population approximately 200) is 30 miles or more from St. Mary and 50 to 60 miles from Swiftcurrent, depending on the route. Cut Bank (population approximately 3,000) offers basic services but is located over 60 miles from St. Mary and 80 to 100 miles from Swiftcurrent, depending on the route.

In the 1960s, 10 NPS-owned trailers were placed in the St. Mary housing area, intended as a temporary means to provide employee housing. The 10 trailers provided 23 beds, primarily for seasonal employees, and housed staff working in St. Mary as well as other areas on the east side of the park. Although the trailers received basic maintenance, over time they became severely dilapidated. Lack of funding for permanent housing led to the trailers' continued use, and they finally deteriorated from age, rodent infestations, mold, leaks, safety issues, and other factors. Two trailers were condemned in 2009 and the others were removed from use before the 2010 summer season.

In 1991, the NPS established a funding source to replace trailers across the Service (The Housing Initiative Program for Trailer and Obsolete Housing Replacement), and the park began efforts to replace trailers throughout the park. In the 1990s, new residential structures were built in the Swiftcurrent housing area, replacing trailers at Many Glacier. More recently, funding for new housing was used to construct housing at Polebridge and Walton on the west side of the park, and at Two Medicine on the east side of the park (Figure 1).

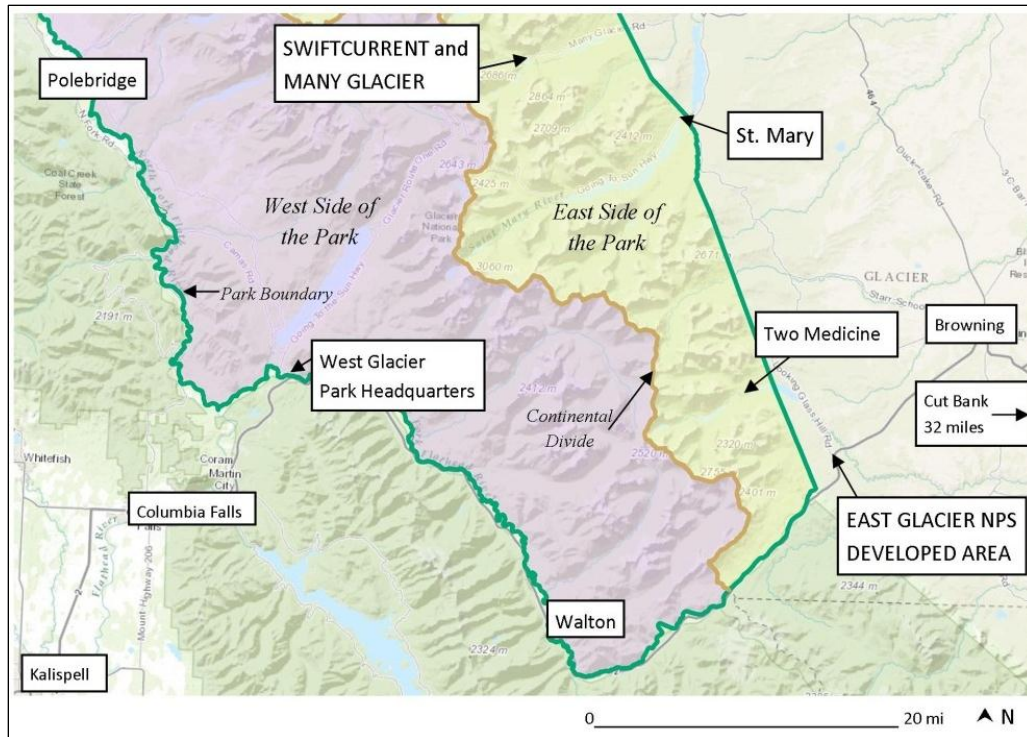


Figure 1: Glacier National Park housing areas and nearby communities.

Replacing the trailers at St. Mary has been problematic because the trailer sites and most of the St. Mary developed area are within the 100-year floodplain of Divide Creek, one of the most active floodplains in the lower 48 states (Nelson Engineering 2010). The park investigated options to build new housing at St. Mary, but life safety and infrastructure concerns, regulations, policies, and the decision in the park's 1999 *General Management Plan* (GMP) to move park infrastructure off the Divide Creek floodplain led to seeking alternate locations. Additionally, guidelines for future development at St. Mary (as described in the EA and Finding of No Significant Impact (FONSI) for construction of a fire cache and radio equipment building at St. Mary) include no overnight use and specify that developments occur only if they cannot be located outside the floodplain, do not appreciably increase the hazard to people from flooding, and avoid, minimize or reduce adverse impacts on natural and cultural resources (NPS 2003). Constructing replacement housing at St. Mary would not meet these guidelines.

A local market analysis in 2011 (LMI 2012) determined that opportunities to rent or buy private market housing in communities adjacent to the east side of the park are inadequate. The analysis determined that most private market housing on the east side of the park is in "very poor condition", with seasonal rental rates exceeding \$750 per month and 6-month leases required for most units (NPS 2012a). The park considered leasing private and/or federally owned land outside the park for housing, but this would have required cost prohibitive utility and infrastructure upgrades.

Since the removal of the St. Mary trailers, the park has made up for the lost beds by doubling employee occupancy in remaining quarters. This has led to crowded and challenging living conditions, especially in the St. Mary dormitory, where 12 x 14 foot rooms (approximate) are frequently occupied by two employees, and limited shower, toilet, and laundry facilities are shared (in the past, 35 occupants in 25 rooms have shared two toilets and three showers on the men's side, two toilets and two showers on the women's side, and three washers/dryers). Additionally, more permanent employees are occupying housing on the east side of the park than in the past, which has led to a shortage of housing for the

seasonal workforce. In East Glacier, park housing for seasonal and permanent employees is limited to historic buildings with poor insulation and other issues.

Given the legal, policy, and life-safety prohibitions on building housing infrastructure at St. Mary, however, and the infeasibility of establishing housing outside the park, the Swiftcurrent housing area and East Glacier NPS compound have emerged as the best options.

Impact Topics Retained for Further Analysis

The following topics are carried forward for further analysis in this EA:

- Park Operations
- Historic Structures and Cultural Landscapes
- Wildlife
- Canada Lynx and Grizzly Bears (federally listed as threatened under the Endangered Species Act [ESA])
- Vegetation and Soils

Impact Topics Dismissed from Further Analysis

The following impact topics are not analyzed because they do not exist in the analysis area, would not be affected by the proposal or the likelihood of impacts are not reasonably expected, or through the application of mitigations measures, there would be no measurable effects from the proposal.

Air Quality

The proposal would cause temporary and slightly increased emissions of pollutants in the project areas during construction. After construction, there would be some emissions associated with the structures due to utility use and building maintenance. However, the increase would be too slight to quantify, and visibility would not be impacted. The majority of long-term, indirect impacts would result from use of electricity, with associated emissions occurring off-site. Air quality in the park would therefore not be measurably affected by the proposed action.

Archeology and Ethnographic Resources

The Areas of Potential Effect (Figure 2) have been previously surveyed for archeological resources and none were identified (Guthrie 1978; Connor and Scott 1984; Reeves 1995 and 2003; Hards 2007). A recent survey was conducted at Swiftcurrent in August of 2015, and no archeological resources were identified. A recent ground survey at East Glacier Ranger Station compound was attempted but could not be completed due to the heavily compacted ground surface. Due to the possible presence of an historic maintenance dump site beneath the compound, the East Glacier project area would be surveyed prior to ground disturbing activities, and excavation would be monitored by an archeologist. If cultural data recovery is necessary, ground disturbing activities would cease until the data is recovered, and there would therefore be no impacts to archeological resources. Similarly, project activities would also cease if cultural material is discovered during excavation or construction at Swiftcurrent. The park's Cultural Resources staff would be notified and additional consultation with the State Historic Preservation Office (SHPO) and Tribal Historic Preservation Offices (THPO) would occur in accordance with federal legislation, regulations, and NPS policy.

The proposed action is not expected to impact ethnographic resources. The Blackfeet and the Confederated Salish and Kootenai Tribes were notified on December 18, 2014 and March 12, 2015, respectively, and did not raise concerns about the proposed action.

Environmental Justice

If the proposed action is implemented, 18 east side employees (or up to 36 if the maximum possible number of employees share quarters in the new residences), could be required to commute between St. Mary and Swiftcurrent, and up to 4 employees may need to commute between St. Mary and East Glacier. This would be approximately 5 percent (maximum of 12 percent) of seasonal employees in the park, and 4 percent (maximum of 7 percent) of staff overall. The commutes would be less than 60 minutes one-way, which is considered reasonable according to the park's Housing Needs Assessment (LMI 2012). Affected employees would be negatively impacted because of an increase in living expenses; this would likely be felt most by seasonal employees, who are within the lowest pay bands in the park. The increase in living expenses would not undermine the overall financial benefit of employment with the park, however. Also, seasonal employment does not usually meet year-round living expenses, and seasonal employees have the ability to pursue other income opportunities for the remaining months of the year. Residential quarters would not be assigned to NPS employees on the basis of race or income, and the construction workforce would be hired in accordance with federal law and contracting law and procedures. For these reasons, Alternative B would not cause disproportionately high or adverse effects on minority or low-income populations.

Indian Trust Resources

The project neither directly nor indirectly affects Indian Trust Resources because there are no known resources in the project area, and neither the Blackfoot nor Confederated Salish-Kootenai Tribes raised this as a concern.

Socioeconomics

There would be no appreciable change to socioeconomics under either alternative. The project would not change visitor numbers, and park concession operations and local businesses would not be impacted. There could be small increases in gasoline sales in the local community due to more employees commuting to work, but not to the extent that business revenue would be noticeably affected. There could be some decrease in rental and real estate income to the local community but these opportunities have historically been minimal. Providing additional year-round housing at the East Glacier NPS developed area could possibly augment business revenues in the nearby community, but not measurably.

Special Status Species

Bull Trout (*Salvelinus confluentus*). Federally listed as threatened. Some portions of the Swiftcurrent drainage in the Many Glacier Valley have recently been designated as Proposed Critical Habitat (USFWS 2010), but they do not include reaches in the vicinity of the Swiftcurrent project area. The proposal would not involve instream work or result in impacts to streams or lakes. The East Glacier project area is not located near any streams or water bodies. The project would therefore not impact bull trout or bull trout habitat. Under section 7 of the ESA, the determination of effects to bull trout would be "no effect".

Water Howellia and Spalding's Catchfly. Federally listed as threatened. While present in Flathead County, there are no known locations of the threatened Spalding's catchfly (*Silene spaldingii*) or the threatened water howellia (*Howellia aquatilis*) within GNP. There are no recorded observations of the species in the vicinity of the project areas, nor is there suitable habitat that could potentially support the species. Consequently, there would be no effect to Spalding's catchfly or water howellia from the proposed project. If locations of listed plant species become known within the vicinity of the project areas, the plants would be avoided. Under section 7 of the ESA, the determination of effects to water howellia and Spalding's catchfly would be "no effect".

Meltwater Stonefly (*Lednia tumana*). Candidate species. Meltwater stonefly habitat does not exist within or near the Swiftcurrent housing area or the NPS developed area in East Glacier. The meltwater stonefly would therefore not be impacted by the project.

Whitebark Pine (*Pinus albicaulis*). Candidate species. Whitebark pine generally occurs near treeline in subalpine zones between 5000 and 7000 feet in elevation. At elevations of approximately 4800-4900 feet, the Swiftcurrent housing area and East Glacier developed area are too low for whitebark pine, and the species does not occur at either site. There would be no impacts to whitebark pine.

State Listed Species of Concern

There are 36 state-listed wildlife species of concern associated with the Many Glacier watershed (MNHP 2015). Some may use the Swiftcurrent project area for nesting and/or foraging, and some individuals may be displaced by new construction and additional residents. The project site is within a developed area, where habitat quality is already affected by infrastructure and high levels of human activity. The additional structures would not measurably increase existing impacts to state-listed species of concern that may use the area. Additionally, mitigation measures calling for additional vegetation east of the Swiftcurrent project area would provide a habitat buffer for displaced individuals. None of the impacts would affect state-listed species of concern at the population level, and impacts are expected to be minor or less.

The East Glacier project area is in town, on a small, developed lot. The small amount of habitat is unlikely to support species of concern.

Water Resources, including Floodplains, Wetlands, and Fisheries

The proposal would not occur near or within waterways, and water resources and fisheries would not be affected. At Swiftcurrent, the proposed action would be outside the 100-year floodplain for Swiftcurrent Creek. At East Glacier, there are no wetlands or floodplains in the project area. Because the project would be a step toward reducing the need for infrastructure on the Divide Creek floodplain, there would be a slight, indirect benefit to floodplains.

Recommended Wilderness

The project would be entirely outside recommended wilderness and within existing developed areas. There could be some intermittent, temporary, indirect noise effects to recommended wilderness beyond the Swiftcurrent housing area during the construction period, but noise intrusions would likely only occur during the use of heavy equipment and would cease altogether once construction is complete.

Natural Soundscapes

The project would cause temporary and intermittent negative impacts to natural soundscapes during construction, and a longer term increase in human-caused noise from additional residents in the housing area, especially at Swiftcurrent. Long-term noise would not be uncharacteristic of existing human-caused noise in the area, and would not deviate from the type and level of noise expected within the park's visitor service zone.

Climate Change

The project would result in some increase in Green House Gas (GHG) emissions from additional employee commutes, and to a lesser degree from utilities associated with the new residential structures. Any new GHG emissions would be very small relative to those produced from visitor highway transportation within the park, and would make a negligible contribution to the park's overall emissions profile. A temporary increase in GHG emissions during the construction phase would cease once construction is complete. The project would not undermine or cancel the benefits of ongoing efforts to reduce GHG emissions parkwide.

Visitor Use and Experience

The housing areas are for administrative use and do not provide visitor services, except for services available at the adjacent ranger stations. Visitors to the Swiftcurrent and East Glacier Ranger Stations would likely be able to detect construction noise and activity during the construction phase of the project, as would campers at the Many Glacier Campground. Project related noise and activity would be temporary and intermittent, however, and would cease after the construction period.

ALTERNATIVES

Two alternatives, action and no action, are carried forward for evaluation in this EA. A number of suggestions and alternate locations for park housing were considered and dismissed (see *Alternatives Considered and Dismissed*).

Alternatives Carried Forward

Alternative A – No Action (No New Housing)

Alternative A describes the conditions that would exist if no replacement housing were built. Under Alternative A, the NPS would not replace housing lost from the removal of ten dilapidated trailers (providing 23 beds) from the St. Mary housing area. No replacement housing would be built, and double occupancy would continue in existing quarters.

Alternative B – Construct Replacement Housing at Swiftcurrent and at the East Glacier NPS Developed Area (Proposed Action and NPS Preferred)

Under Alternative B, replacement housing would be constructed in the Swiftcurrent housing area (Many Glacier) and at the NPS developed area in East Glacier. A one-story fourplex and a two-story eightplex would be built at the Swiftcurrent housing area, and a one-story duplex would be built at the East Glacier NPS developed area. The three proposed residential structures would replace 22 of the 23 beds lost in the removal of the trailers. The structures would include laundry facilities for use by employees housed in the new units. Utilities for the new structures would be tied into existing utilities. Construction would take place as funding becomes available, most likely in three phases. Funding is currently available for the fourplex at Swiftcurrent and the duplex at East Glacier.

The park's *General Management Plan (GMP)* (NPS 1999) established management zones that delineate land uses for the park. The zones are: visitor service, day use, rustic, and backcountry. However, the GMP did not identify a management zone for the park administrative site in East Glacier Park, Montana. Alternative B defines the East Glacier NPS Developed Area (inclusive of the East Glacier Ranger Station Historic District (Figure 5), to be the full extent of parcel 20-106, in East Glacier Park, Montana. Further, this alternative uses the conceptual management designations put forward in the 1999 *GMP* to define the East Glacier NPS Developed Area as a visitor service zone.

Swiftcurrent

At Swiftcurrent, the fourplex (two 2-bedroom, 2-bath units and two 1-bedroom, 1-bath units) would be constructed immediately north of the Swiftcurrent Loop Road, across from the east end of the historic district (Figure 2 and Figure 4). To minimize long-term impacts on the wildlife connectivity area immediately east (Figure 7), additional infrastructure east of the fourplex would be limited to an entry sidewalk, which is required for compliance with the Architectural Barriers Act (ABA) (i.e. there would be no parking or other outdoor use facilities, such as picnic tables, east of the fourplex). Parking for the fourplex would be in front of the building, along the Swiftcurrent Loop Road; approximately 8 parking spaces would be anticipated.

The eightplex (four 2-bedroom, 2-bath units and four 1-bedroom, 1-bath units) would be located west of the Swiftcurrent Ranger Station and north of four housing structures built in the 1990s. Parking for the eightplex would be developed on the north and east sides of the building; approximately sixteen parking spaces would be anticipated.

Parking for both the eightplex and the fourplex would accommodate no more than a single row of vehicles and would be along existing road segments in order to minimize loss of vegetation and visual

impacts on the historic district. The existing entry to the Swiftcurrent Loop Road (from the campground entry) would be closed at its west end, and access to the eightplex's north parking area would be from the east. The original entry to the Swiftcurrent Ranger Station (from the north) would be restored to its historic condition and reopened.

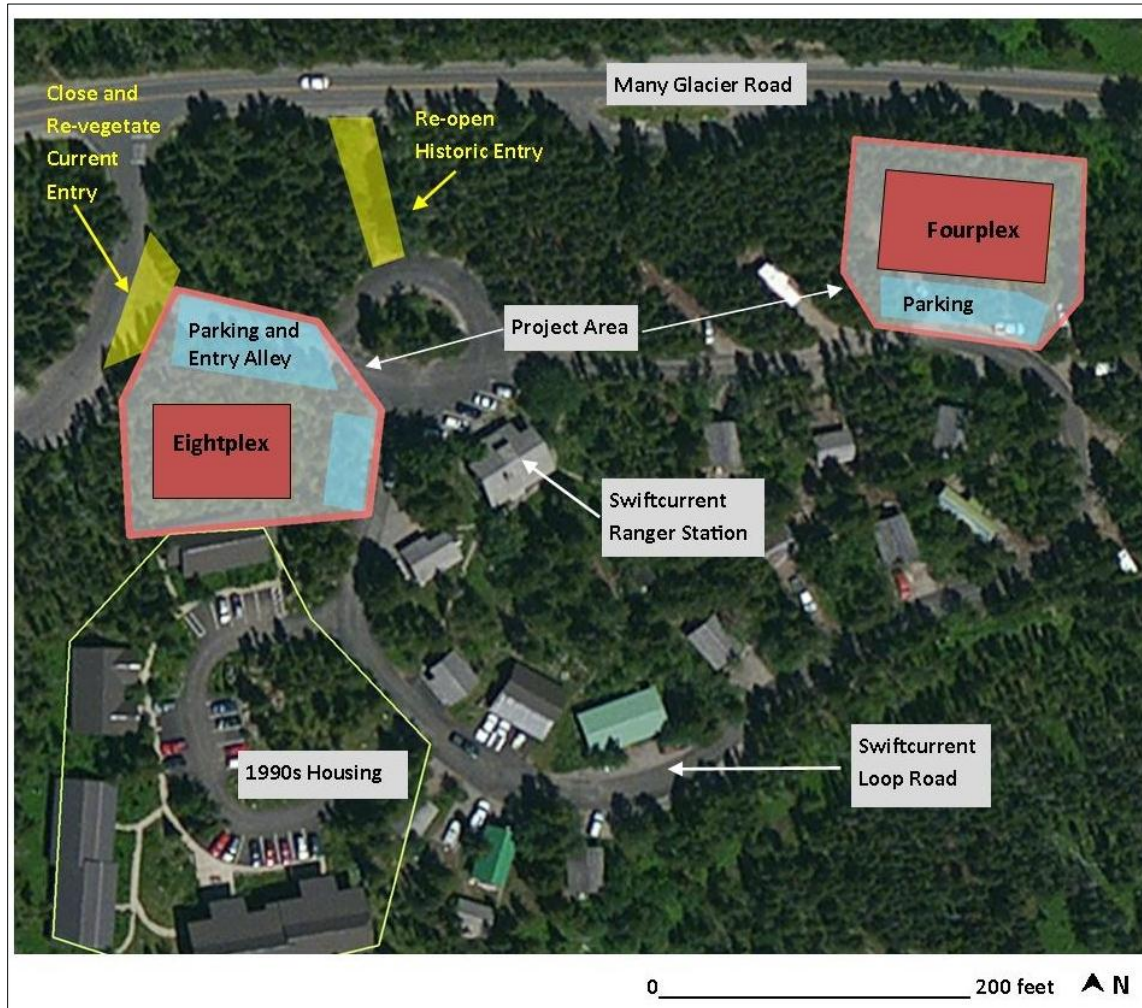


Figure 2: Locations for proposed housing at Swiftcurrent.

The permanent footprint for the fourplex and eightplex and associated parking areas would be approximately 0.3 acre at each site, with a total of approximately 0.6 acre. Additionally, approximately 0.1 acre adjacent to the building footprint at each site would be temporarily occupied by construction equipment and staging during the construction period. Construction staging would likely occur entirely within the local vicinity of the building sites, including areas that would be developed for parking. It is possible that an existing pullout(s) along the Many Glacier Road may be needed for staging purposes, but this is unlikely. Otherwise, no satellite staging areas away from the project area are anticipated.

Additional native vegetation would be planted within the 10-meter buffer zone on the west side of the wildlife connectivity area east of the housing area (Figure 7) to increase screening, absorb/disperse disturbance effects, and limit human use to foot traffic between the fourplex and the connectivity area.

Housing at Swiftcurrent would provide quarters for at least 18 and up to 36 seasonal employees, depending on the number of employees assigned to each unit. Housing would be available during the summer season, approximately 4.5 months per year, with access dependent on wildlife closures and weather.

East Glacier

The duplex at East Glacier (two 2-bedroom, 2-bath units) would be located within the East Glacier Ranger Station Historic District, at the south edge of the current maintenance yard/parking area (Figure 3). Each unit would have an attached garage. The permanent footprint for the duplex would be approximately 0.3 acre; approximately 0.1 acre would be temporarily occupied during the construction period. Construction staging would likely occur entirely within the existing maintenance yard/parking area.

New housing at East Glacier would provide quarters for at least two and up to four employees, and would be available year-round.

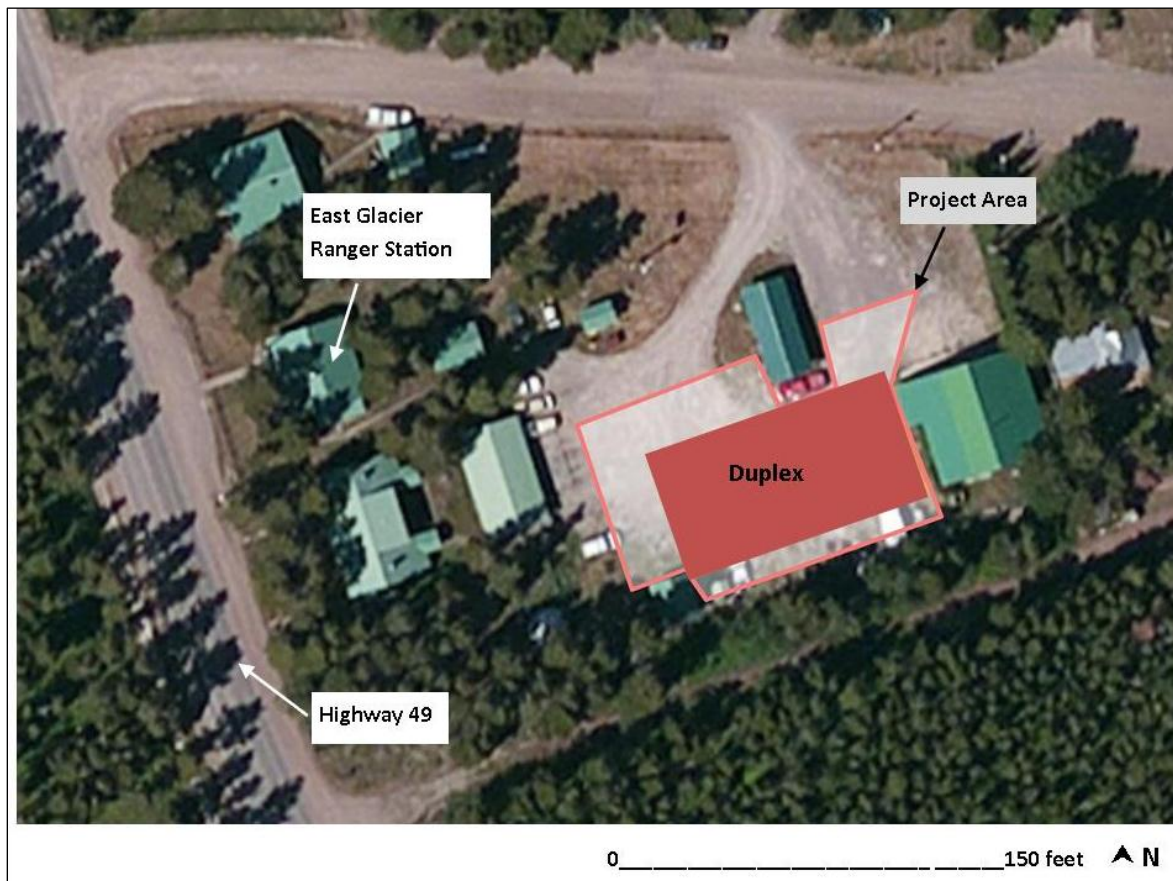


Figure 3: Location for proposed housing at East Glacier.

Construction would take an estimated six months for each building. Construction could occur at any time of year at East Glacier. The construction period at Swiftcurrent would only be from April 1 until December 31, when the Many Glacier Road is open for administrative access; no construction would occur at Swiftcurrent when the road is closed to administrative access (January 1 to March 31). At Swiftcurrent, no construction activity or staging would be permitted within the wildlife connectivity area, except for temporary work necessary to connect the fourplex to the existing utility line that

already bisects the connectivity area (Figure 7). Otherwise, all construction activity would occur west of the wildlife connectivity area.

In accordance with the NPS *Green Parks Plan* (NPS 2012) and the *DOI Sustainable Buildings Implementation Plan* (DOI 2008), the NPS incorporates green building approaches into site choice, design, construction, and maintenance/sustainability features of new structures. This project would use green construction materials as much as possible, optimize energy performance, minimize resource damage, and minimize construction and maintenance costs. Although the park would not seek Leadership in Energy and Environmental Design (LEED) certification due to the high cost, LEED design principals would be used in the design of the facility. The park has recently completed LEED Gold Certification for construction of the Apgar Transit Center and similar emphasis on green practices would be applied, such as the use of recycled materials when possible, high R-value insulation, avoiding the use of an irrigation system, and finishes with low volatile organic content (VOC), i.e. finishes that do not give off a lot of fumes.

In compliance with NPS Reference Manual 36: Housing Management, and Glacier National Park's 2011 Housing Management Plan (NPS 2011), each building would have units accommodating persons with mobility, hearing and vision impairment.

Mitigation Measures

The following mitigation measures would minimize the degree and/or extent of adverse impacts and would be implemented during the project.

Historic Structures and Cultural Landscapes

- Building and site design would be as compatible as practicable with the historic architectural characteristics of the historic districts through similar architectural features, materials, and color.
- Parking areas would accommodate no more than a single row of vehicles and would be along existing road segments in order to minimize visual impacts on the historic districts.
- Landscaping and revegetation would be implemented to reduce the visual impacts of the new residences on the historic district at each location.

Wildlife, Habitat, and Threatened Wildlife Species

- Storage requirements for food, garbage, and other attractants would be strictly enforced during both the construction period and when the housing area is in use.
- Construction crews would be trained on attractant storage regulations and appropriate behavior in the presence of wildlife. The handbook "*Bear Safety, Site Sanitation and Other Requirements While Working in Glacier National Park: a Handbook for Construction Contractors*" would be provided to all contractors and work crews.
- During construction, park staff (e.g. wildlife technicians and law enforcement rangers) would monitor work and staging areas.
- The fourplex would be at least 30 feet (9 meters) from the west boundary of the wildlife connectivity area (Figure 7) in order to minimize disturbance and displacement of wildlife.
- Additional infrastructure east of the fourplex at Swiftcurrent would be limited to an entry sidewalk (i.e. there would be no parking or other outdoor facilities, such as picnic tables, east of the fourplex).

- No construction activity or staging would be permitted within the wildlife connectivity area, except for temporary work necessary to connect the fourplex to the existing utility line that already bisects the connectivity area. Otherwise, all construction activity would occur west of the wildlife connectivity area. The west boundary of the wildlife connectivity area at Swiftcurrent would be flagged to discourage entry.
- Native vegetation east of the fourplex would be retained.
- Additional vegetation would be planted within the 10-meter buffer zone on the west side of the wildlife connectivity area to increase screening, absorb/disperse disturbance effects, and limit human use to foot traffic between the fourplex and the connectivity area.
- The remnant trailer pads in the wildlife connectivity area at Swiftcurrent (Figure 7) would be revegetated.
- No construction activity would occur at Swiftcurrent during the core wildlife security period, when the Many Glacier Road is closed to vehicle access for wildlife security between January 1 and March 31.
- Hours of outside construction would be limited to between 8 am and 5 pm. There would be no hourly limits on interior construction.
- Equipment would be inspected for fluid leaks prior to use. Leaking equipment would not be permitted in the park. Any equipment that develops leaks would be repaired immediately or removed from the park. Absorbent materials manufactured specifically for the containment and clean-up of hazardous materials would be kept onsite in case a spill should occur.
- Contractors would provide portable toilets for construction workers. All portable toilets onsite during construction would be securely anchored to prevent them from blowing or tipping over. Toilet fluids would be fully contained. In the event of a spill, all contaminated fluids would be contained, collected and disposed of.

Natural Soundscapes and Air Quality

- Equipment operators would be encouraged to limit idling time to no longer than 15 minutes.

Vegetation and Soils (See also *Historic Structures and Cultural Landscapes, Wildlife, and Visual Resources in Mitigations*)

- Construction area would be flagged to minimize impacts to vegetation.
- Parking areas would accommodate no more than a single row of vehicles and would be along existing road segments in order to minimize loss of vegetation.
- Topsoil would be evaluated for non-native invasive plant infestations. Heavily infested topsoil would be removed. Non-infested topsoil would be salvaged, stored according to Glacier National Park soil conservation guidelines, and used on site once construction is complete.
- Small trees and shrubs would be salvaged before construction and replanted in disturbed areas after construction.
- Erosion control measures would be implemented, such as silt fencing.
- After construction, compaction and further erosion would be mitigated by aerating disturbed ground and replanting/reseeding with native vegetation, and performing non-native invasive plant control.

- Native trees would be planted at the east end of the Many Glacier Campground (Figure 7) to retain vegetative screening and minimize the effects of cleared forest in the adjacent Swiftcurrent housing area.
- At East Glacier, areas adjacent to the duplex would be landscaped with native plants.

Archeological and Ethnographic Resources

- Tribes hold a body of knowledge that may result in the identification of ethnographic resources in the area in the future. If ethnographic resources are identified later, consultation would occur in accordance with federal legislation and regulations and NPS policy.
- Should construction unearth cultural resources, work would be stopped in the area of discovery and the park would consult with the State Historic Preservation Officer and the Tribal Historic Preservation Officers in accordance with §36 CFR 800.13, Post Review Discoveries. In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) would be followed.
- All contractors and subcontractors would be informed of the penalties for collecting artifacts or intentionally damaging paleontological materials, archeological sites, or historic properties.

Lightscape Management and Night Skies

- Outdoor lighting associated with the residences would be for safety only and directed toward the buildings.
 - Only full cut off or lighted bollards with timers would be installed for safety.
 - At Swiftcurrent, exterior light fixtures would be oriented so that no artificial light spreads into the wildlife connectivity area.

Visual Resources

- New construction would be designed to blend with existing structures as much as possible through similar architectural features, materials, and color.
- Existing vegetation would be preserved and landscaping would be done to screen the new infrastructure as much as possible.

Alternatives Considered and Dismissed

The following suggestions and alternative locations for replacement housing were considered but dismissed from further consideration, as described below. These include suggestions from public scoping as well as the project planning team.

Table 1: Suggestions and alternative locations dismissed from further consideration.

Suggestions/Alternative Locations Dismissed	Reason for Dismissal
Purchase or lease property outside the park. Properties considered included the US Customs and Border Protection site at Piegan, property used by the former Malstrom Air Force Base for recreation, and private property.	Properties considered were dismissed due to lack of access and utility infrastructure, possible security issues, the possible presence of hazardous materials, and a history of mold issues due to a high groundwater table. Leasing must conform to the delegation of authority from the General Services Administration (GSA); infrastructure, including utilities and access roads, needs to be in place before a lease can be entered into. Funding for both property leasing and infrastructure development is not currently available, and new housing is an immediate necessity. No private property nearby had the necessary infrastructure.

Construct housing at Rising Sun.	The Rising Sun area is committed for use as additional concessioner housing, as described in the <i>Commercial Services Plan/FEIS</i> (NPS 2004) and Record of Decision.
Construct housing within the St. Mary Campground or on the bench above the campground.	Constructing within the St. Mary Campground would reduce the size of a popular campground, and the presence of housing in the middle of the campground would adversely affect visitor use and experience. The close proximity of campers would also impact the quality of a residential atmosphere for employees. Separating housing from visitor camping is in keeping with other actions the park has taken to separate different uses (such as concession housing and visitor accommodations). Also, portions of the campground are within the floodplain for Wild Creek, and the bench above the campground is an undeveloped area. Locating housing on the bench would result in the development of infrastructure, including a road and utilities, to an undeveloped area.
Relocate the St. Mary Campground to the St. Mary housing area, and move housing to the campground site.	Portions of the St. Mary Campground are within the Wild Creek floodplain. There is not enough space outside the floodplain to accommodate infrastructure for housing and district operations.
Construct housing above the 1913 Ranger Station (west of the St. Mary administrative area).	A new road and utilities would be required at the site, which is in an undeveloped area. Construction would cause noticeable new disturbance and result in loss of wildlife habitat and vegetation. Historic property would be impacted. The new housing would be visible from the Going-to-the-Sun Road and the St. Mary Visitor Center.
Construct housing at the former St. Mary trailers site.	The former trailer site is within the Divide Creek floodplain, posing safety and resource issues. The State of Montana, the EPA, and the Blackfeet Tribe have all expressed concerns about further development of this area. The <i>GMP Record of Decision</i> (NPS 1999) committed the park to moving out of St. Mary. Relocating overnight use has been the park's first priority.
Construct housing above the St. Mary boneyard in an undeveloped wooded area.	While the site above the boneyard is outside the Divide Creek floodplain, access would be through the floodplain, and residents could become stranded during a flood event. The site is too small to accommodate other structures, and would not be practical as part of a long-term plan to relocate infrastructure off the floodplain.
Install additional RV pads at St. Mary.	Relying on additional RV pads to meet all housing needs would not be practical because only employees with RVs could be housed.
Construct raised housing structures in the existing St. Mary housing area.	Raised housing structures would still result in overnight use of the floodplain, and would not be in keeping with the long-term commitment to relocate infrastructure as described in the 1999 GMP.
Construct housing east of the Swiftcurrent housing area and west of the picnic area.	This would impact an important connectivity area for Canada lynx and other wildlife.
Construct housing south of the Swiftcurrent housing area or near the fire cache.	This would require relocating historic buildings in a historic district and would have an adverse effect under Section 106 of the National Historic Preservation Act.
Construct the eightplex at Swiftcurrent just west of the fourplex.	Locating the eightplex next to the fourplex would increase negative impacts to the Swiftcurrent Ranger Station Historic District (Figure 4) and the wildlife connectivity area east of the housing area (Figure 7), and would require the removal of two trailer pads that are currently available for employees with RVs.

Construct housing near the Many Glacier horse concession and corral.	This site is undesirable due to the presence of livestock and a busy concessioner operation.
Construct housing at East Glacier at the old NPS fish hatchery site.	There is no sufficiently level ground at the site.

Alternative Summaries

Table 2 summarizes the major components of Alternatives A and B. Alternative B (proposed action and NPS preferred) achieves the project objectives while Alternative A (no action) does not.

Table 2: Summary of alternatives.

Alternative Elements	Alternative A: No Action	Alternative B: Construct Replacement Housing at Swiftcurrent and East Glacier
Construction of NPS employee housing at Swiftcurrent.	Park employee housing would not be constructed at Swiftcurrent.	Park employee housing would be constructed at Swiftcurrent. The housing would consist of an eightplex and a fourplex and would follow prototypes modified, to the extent practicable, to be compatible with the Swiftcurrent Ranger Station Historic District.
Construction of NPS employee housing at East Glacier.	Park employee housing would not be constructed at East Glacier.	Park employee housing would be constructed at East Glacier. The housing would consist of a duplex and would follow prototypes modified, to the extent practicable, be compatible with the East Glacier Ranger Station Historic District.

Table 3 summarizes the anticipated environmental impacts for Alternatives A and B. Only those impact topics that have been carried forward for further analysis are included in this table. The *Affected Environment and Environmental Consequences* chapter provides a more detailed explanation of these impacts.

Table 3: Environmental impact summary by alternative.

Impact Topic	Alternative A – No Action	Alternative B – Construct Three New Residential Structures
Park Operations	A continued shortage of housing would negatively affect park operations on the east side of the park.	New housing at Swiftcurrent and East Glacier would benefit park operations by relieving over-crowded living conditions and providing safe, functional, reliable housing. There could be temporary adverse effects to park operations as employees adjust to commutes and changes to residential communities, but overall park operations are expected to continue normally.
Historic Structures and Cultural Landscapes	With no new construction, there would be no new impacts to historic structures and cultural landscapes.	The new structures would be out of mass and scale with buildings in the historic districts (Figures 4 and 5), and would adversely impact viewshed elements (especially at Swiftcurrent).

Wildlife	There would be no new construction and no new impacts to wildlife.	Construction activity, an increased number of residents in the Swiftcurrent housing area, and increased traffic on the Many Glacier Road could disturb and/or displace wildlife. Population level effects are not anticipated, and the project would occur in an already developed area with typically high levels of human activity.
Canada Lynx and Grizzly Bears (federally listed as threatened)	With no new construction, there would be no new impacts to Canada lynx and grizzly bears. Under section 7 of the ESA, the determination of effect would be “no effect”.	<p>Additional housing could displace lynx for the long term, and noise and construction activity could disturb lynx for the shorter term. Effects would not be expected at the population level, and there would be no additional physical fragmentation of critical lynx habitat.</p> <p>There would therefore be little if any change in the degree to which bears would be displaced from the project area, given already high levels of human occupation and management actions that discourage grizzlies from frequenting the project area.</p>
Vegetation and Soils	There would be no new construction or disturbance, and therefore no new impacts to soils or vegetation.	<p>At Swiftcurrent, the project would adversely affect approximately 0.8 acre of primarily previously disturbed and revegetated ground. Plant species would not be affected at the population level, and no sensitive species would be affected.</p> <p>At East Glacier, construction would occur entirely within a previously disturbed parking area, and there would be no negative impacts to vegetation and soils. There would be some beneficial effects from landscaping.</p>

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the affected environment (existing setting or baseline conditions) and analyzes the potential environmental consequences (impacts or effects) that would occur as a result of implementing the proposed action. Cumulative effects are analyzed for each resource topic carried forward.

Cumulative Impact Scenario

Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for both the no action and the preferred alternative. The geographic scope for the cumulative impacts analyses is primarily specific to East Glacier Park and the Swiftcurrent area west of Swiftcurrent Lake; for the discussion of cumulative impacts to wildlife and threatened and Canada lynx and grizzly bears, the geographic scope includes areas west of the lake and in the greater Many Glacier Valley. The temporal scope is generally ten to fifteen years, but also includes earlier projects. The following projects were identified for the purpose of conducting the cumulative effects analysis.

Past Actions – Swiftcurrent/Many Glacier

- Construct new apartments in the Swiftcurrent housing area in the 1990s as part of the 1986 Swiftcurrent Development Concept Plan.
- Rehabilitate housing in the Swiftcurrent housing area, including the Trails Dormitory (building 0186); housing units 177, 178, 179, 180, and 181; housing fire cache (182); woodshed (483); trails storage shed (484); and wildland fire cache (485).
- Rehabilitate historic flagstone walkways at Many Glacier (Swiftcurrent) Ranger Station.
- Many Glacier/Swiftcurrent Sewage System and wastewater treatment improvements (EA done in 2007)
- Rehabilitate the wastewater distribution (replace the sewer line) in the Swiftcurrent Motor Inn area (2011).
- Improve accessibility of the trail from the Many Glacier picnic area to the footbridge at Swiftcurrent Creek, including an accessible ramp at the footbridge.
- Rehabilitate interior of Housing Unit B#1356 within the Swiftcurrent Ranger Station Historic District (Figure 4), included excavation of shallow 60-foot long trench for underground water supply.
- Replacement of the Natural Resources Conservation Service (NRCS) SNOTEL (Snow Telemetry) communications tower (installed in 1976) between the housing area and Many Glacier picnic area. Install telecommunications data cable between the Many Glacier Ranger Station, telecommunications building, and SAR cache.
- Install satellite dishes at the Many Glacier Ranger Station and Swiftcurrent store/restaurant.
- Replace the restroom facility at the Many Glacier Ranger Station.
- A number of actions to repair/rehabilitate facilities in the vicinity of the Swiftcurrent Motor Inn (Swiftcurrent Auto Camp Historic District), such as the construction of seven replacement cabins in Loop I at the Swiftcurrent Motor Inn (as part of the 2004 *Commercial Services Plan*), construction of accessible ramps, rehabilitation of the Bear Room Building, reroofing the motel and campstore, and drainage correction at the campstore.
- Actions at the Many Glacier Campground, including rehabilitation or remodeling of comfort stations, walkways, and campsites for accessibility; installation of RV hookups for additional campground host; and RV dump sewer line repair.

- More generally, additional past actions include rehabilitation of the Many Glacier Hotel (ongoing); replacement of the Swiftcurrent Bridge; repairs/upgrades to structures in the vicinity of the hotel and the bridge, including the Lower Dorm, Upper Dorm, Jammer Dorm, and other buildings; repairs to the Windy and Apikuni Creek Bridges; repairs/upgrades to structures in the vicinity of the Many Glacier wastewater treatment area; utility repairs/improvements and the installation of satellite dishes, telecommunication cable, and a radio repeater in the vicinity of the hotel; clearing the Glacier Electric power line right-of-way; and maintenance of the Many Glacier Road (ongoing), including geotechnical exploration for landslide mitigation at milepost 6.2.

Past Actions – East Glacier

- Two Medicine water project, a 22 million dollar project which resulted in additional water treatment infrastructure and provides clean water to Browning and East Glacier Park
- Rehabilitate housing structure (134) and apartment duplex (136).
- Re-roof residential garage (396), garage (397), gas and oil house (400), workshop (401), fire cache (402), and apartment/ranger dormitory (135).
- Reinstall porch to building 135.
- Convert an unused garage to a fitness room.
- Install radio communications tower.
- Clean up the East Glacier dump site.
- Cultural cyclic maintenance for buildings 400, 401, and 402
- Replace siding and trim on housing structure 134.

On-going Actions – Swiftcurrent/Many Glacier and East Glacier

- Rehabilitation of the Many Glacier Hotel
- Maintenance of the Many Glacier Road, including ditch clearing and seasonal snow plowing
- Wildlife management actions, including actions taken under the *Bear Management Plan*
- Routine building maintenance and emergency repairs to facilities
- Repair work on Highway 49 near East Glacier, at the railroad underpass and north of town

Future Actions– Swiftcurrent/Many Glacier and East Glacier

- Continued rehabilitation of the Many Glacier Hotel, and continued maintenance and upgrades to concessioner facilities and utilities, including historic buildings
- Snow removal along the Many Glacier Road beginning March 15 (two weeks earlier than the normal April 1 administrative access date), during the spring of 2016 and 2017 to enable contractor access to the Many Glacier Hotel. Early snow removal operations will occur during 2016 and 2017, and will not proceed into the Swiftcurrent area. Only NPS crews will be permitted early access; contractor access will not be permitted until April 1.
- Rehabilitation of the Many Glacier Road Implement actions identified in the Many Glacier Wildlife Viewing Plan—enlarge and/or improve four designated pullouts along the Many Glacier Road, formalize four undesignated pullouts, remove three pullouts and develop one new pullout, construct a short trail to the meadow at Apikuni Flat, develop a wildlife viewing area at the Swiftcurrent Motor Inn parking lot, and possibly construct an observation terrace just west of the Many Glacier Hotel T intersection.
- Continue to construct an accessible trail at Swiftcurrent Lake Rehabilitate the Many Glacier lift station
- Replace sewer lines at the Many Glacier Campground and Swiftcurrent housing area
- Add a vault toilet in the Many Glacier Campground

- Rehabilitate the interior of housing unit 175 in the Many Glacier Campground
- Install water quality monitoring wells near the Many Glacier Wastewater Treatment Plant
- Install telecommunication cable from the East Glacier Ranger Station to the garage/storage building (barn)

Park Operations

Affected Environment

Park operations on the east side of the park include visitor services, law enforcement, emergency response, road and facility maintenance, resources management and protection, trail and campground maintenance, and basic administrative functions, including housing management, among others. This discussion and analysis focuses on housing management and park operations influenced by housing.

Nearly all employees with east side duty stations live in the park due to the lack of housing available on the private market in adjacent and outlying communities. Most east side employees are housed at St. Mary, Swiftcurrent, or East Glacier, with St. Mary currently providing the majority of residential space. Employees housed in these areas sometimes work in one or more different areas in the park. St. Mary houses 16 permanent and 51 seasonal employees in a number of houses, apartments, and one dormitory. Since the removal of 10 trailers from the St. Mary housing area, the park has often needed to house two employees per bedroom, although this is generally recognized as undesirable from an employee perspective. Twelve trailer pads (10 of which were previously used for the trailers) have been available at St. Mary since 2011 for seasonal employees to hook up personally owned RVs as an alternative to park housing. In 2015, the park filled several longstanding vacancies for permanent positions on the east side, which further decreased the availability of seasonal housing at St. Mary because previously seasonal housing was used for these permanent employees. As a result, some seasonal employees with duty station at St. Mary were housed elsewhere and commuted to St. Mary for work.

The Swiftcurrent housing area currently accommodates two to three permanent and 31 seasonal employees in six efficiency cabins, a three bedroom dorm, a one bedroom home, two duplexes with two bedrooms each, a four bedroom fourplex and an eight bedroom eightplex. Maximum capacity (with some employees required to share bedrooms) is 32 seasonal employees. There are also two trailer pads used by seasonal employees who bring their own RVs; six other previously used trailer pads have been revegetated and are no longer available for use. At East Glacier, two buildings with three housing units and a total of eight bedrooms provide housing for 6 seasonal and two permanent employees year-round. An existing trailer pad for personal RV hookup was also brought back into use at the East Glacier housing area. Seasonal housing is also available at Two Medicine, with some employees travelling between East Glacier and Two Medicine. Housing at Two Medicine includes a triplex, a duplex, and a cabin, with a total capacity for eight or more employees (depending on whether employees are doubled to a room).

Employees in certain mission critical positions are required to live within a certain response time of their duty station in order to provide timely responses to emergencies. These “Required Occupant” (RO) positions protect government property and provide essential services, including law enforcement, emergency medical response, search and rescue, structural and wildland fire response, and emergency maintenance of facilities. Permanent RO employees may live outside the park as long as their commute does not exceed their required response time. Seasonal RO employees must live in park housing at their duty station. Due to the difficulty in obtaining housing outside the park and commuting distances that exceed required response times, both permanent and seasonal RO employees on the park’s east side are obligated to live in park housing at their duty station. St. Mary currently has ten RO positions (5

permanent, 5 seasonal); Many Glacier has 9 RO positions (2 permanent in summer, 7 seasonal); and East Glacier shares 7 RO positions with Two Medicine (2 permanent, 5 seasonal).

Impacts of Alternative A—No Action

Under no action, the current shortage of housing on the east side of the park would persist, perpetuating crowded and unpopular living conditions, especially in St. Mary. Seasonal employees at St. Mary would continue to be required to share quarters. In the St. Mary dormitory, 35 occupants in 25 rooms have shared two toilets and three showers on the men's side, two toilets and two showers on the women's side, and three washers/dryers. The dorm has 15 rooms on the men's side and 10 rooms on the women's side. Exact housing arrangements cannot be predicted, since staffing levels may vary from one year to the next based on funding and changing administrative needs. But at maximum capacity and without alternative housing, as many as 50 employees could be required to share quarters and limited facilities in the dorm. The park could also have to double up more employees in existing housing at Swiftcurrent, depending on the need.

Securing private market housing outside the east side of the park is extremely difficult, if not altogether impossible (LMI 2012). If outside housing could be secured, it would likely be outside the maximum 60-minute commute time identified in the park's Housing Needs Assessment (LMI 2012), would impose higher rental costs on seasonal employees, and would increase uncertainty as to whether the same housing would be available from one year to the next. Cut Bank would have the greatest likelihood of providing appropriate housing outside the park, but is over 60 highway miles from St. Mary. Speeds under 60 mph are often required along the way, due to a frequently winding roadway near the park boundary, and the distance would likely take more than 60 minutes to travel, especially in inclement weather.

The park has received a number of complaints over the years from seasonal employees indicating they would not return to work at the park due to current housing conditions. Mounting housing challenges could discourage additional seasonal employees from returning to the park, and east side park operations overall could suffer if employee retention drops to the point where new employees that need to be trained and oriented every season exceed the number of returning employees who know the park, are familiar with their duties, and require minimal orientation. Low morale among east side employees as a result of housing challenges could eventually affect the quality of work, including visitor services. Overall park operations would also be negatively affected if the housing shortage eventually forces the park to hire fewer east side employees. As the NPS follows through on the 1999 GMP decision to relocate all infrastructure off the Divide Creek floodplain, housing options for employees with duty stations at St. Mary will become even more limited. The absence of alternative housing would limit the park's ability to hire employees for mission critical roles in resource protection, infrastructure maintenance, and visitor services, severely impacting park operations at a large scale.

Cumulative effects

Past, ongoing, and future actions to increase residential space or rehabilitate existing housing structures have directly benefitted housing management on the east side of the park. These actions have also indirectly benefitted other park operations, because housing improvements help maintain the seasonal and permanent workforce necessary to undertake those operations. The no action alternative would neither diminish nor further the benefits of these actions. But while benefits would continue, they alone would not be enough to remedy the current housing shortage.

Conclusion

Under no action, the current housing shortage would persist. Park operations on the east side would be negatively affected by employees frustrated by crowded, poor, costly, or uncertain housing conditions,

and if those employees do not return to the park from one season to the next or if the park is forced to reduce its east side work force due to a lack of housing. The absence of alternative housing could severely impact the park's ability to hire employees for mission critical park operations as St. Mary infrastructure is relocated from the Divide Creek floodplain, as called for in the 1999 GMP.

Impacts of Alternative B—Construct Replacement Housing at Swiftcurrent and East Glacier (Proposed Action and NPS Preferred)

The preferred alternative would enable the relocation of seasonal housing from over-crowded residences in St. Mary to more appropriate housing, and would accommodate any future staff increases that may occur in an area where housing is not readily available on the private market. Including both Swiftcurrent and East Glacier, 18 to as many as 44 employees could be relocated, depending on staffing levels and housing arrangements, which can vary from one year to the next. The new housing would reduce the need for employees to share quarters and/or seek more costly housing outside the park and outside the 60-minute commute identified in the park's Housing Needs Assessment (LMI 2012).

Depending on the need, bedrooms in the new housing units could be used for double occupancy. This would not undermine the overall benefit of the new housing, however, given the improved living space and better access to shower, toilet, and laundry facilities. Alternative B would facilitate the process of arranging housing for seasonal employees each summer and directly benefit housing management operations for the long term because the availability of housing would be more predictable and reliable from one year to the next. Other, mission critical east side park operations, including resource protection, facility maintenance, and visitor services, would also benefit because safe, reliable, functional housing would help maintain the workforce necessary to continue those operations. Positive effects on employee morale would also improve the likelihood that seasonal employees would return, minimizing the potential for employee retention to drop to the point where new employees who need to be trained and oriented every season exceed the number of returning employees who are familiar with the park and their duties.

Alternative B could also adversely affect morale for employees faced with longer commutes (approximately 21 miles between St. Mary and Swiftcurrent; approximately 30 miles or more between St. Mary and East Glacier) to their duty station. Some seasonal employees living at St. Mary have also raised concerns about a disrupted sense of community from moving away from friends and a familiar place if they are asked to live elsewhere. Construction activity would temporarily disrupt housing communities in Swiftcurrent and East Glacier for an estimated total of six months for each structure (with construction months possibly occurring non-consecutively); changes to the neighborhood from the addition of new buildings, new residents, and increased activity would be permanent, but only noticeable to employees housed at Swiftcurrent and East Glacier prior to the addition of the new residences. These concerns could discourage some long-time seasonal employees from returning, which would temporarily impact park operations that have benefitted from their skills and experience. There may be a temporary adjustment period due to new commuting schedules and logistics, but overall, park operations are expected to continue normally. No RO positions would be relocated from St. Mary under this alternative, and St. Mary's emergency response capabilities would not be affected.

Cumulative effects

Past, ongoing, and future actions to increase residential space or rehabilitate existing housing structures have directly benefitted housing management on the east side of the park. These actions have also indirectly benefitted other park operations, because housing improvements help maintain the seasonal and permanent workforce necessary to undertake those operations. The preferred alternative would increase beneficial impacts of past, ongoing, and future actions to improve housing conditions, and the cumulative effects to park operations would be positive.

Conclusion

New housing at Swiftcurrent and East Glacier would directly benefit housing operations on the east side of the park by relieving over-crowded living conditions and providing safe, functional, reliable housing. Mission critical park operations would benefit, as the new housing would support the workforce they depend upon and would have positive effects on employee morale. There could be temporary adverse effects to park operations as employees adjust to commutes and changes to residential communities, but overall park operations are expected to continue normally. Cumulatively, the preferred alternative would increase beneficial impacts to housing and park operations.

Historic Structures and Cultural Landscapes

Affected Environment

SWIFTCURRENT (MANY GLACIER) RANGER STATION HISTORIC DISTRICT

The Swiftcurrent Ranger Station Historic District (Figure 4) is located in the Swiftcurrent vicinity of the park's Many Glacier Valley and was listed in the National Register of Historic Places in 1986 (Historical Research Associates 1984a and NPS 2015a). In 1996, an addendum to the nomination described and evaluated the building interiors (NPS 1996a). All twelve original buildings are features contributing to the significance of the district, which represents an important park administrative site. The buildings were constructed in 1938 in the wake of a wildfire in 1936 that destroyed an earlier ranger station and some concessioner facilities. At the time, the Many Glacier Valley was (as it is today) one of the most popular visitor use areas in the park, and replacement of the ranger station was an immediate necessity.

The Swiftcurrent Ranger Station Historic District is significant for its unusual design and materials, and because all the buildings were built within a year of each other. The architects abandoned standardized plans that had been used repeatedly throughout the park, which called for log buildings. The buildings at Swiftcurrent are of frame construction with understated Swiss-inspired elements, such as carved eave brackets, decorative truss work, and small gable end balconies on the ranger station.

The district retains all of its original buildings, including the ranger station, six identical cabins, three duplex woodsheds, a fire cache, and a combination garage/woodshed. Four residential buildings (two duplexes, a fourplex, and an eightplex) were built outside but adjacent to the west boundary of the historic district in the 1990s (Figure 4). The new buildings replaced trailer houses that detracted substantially from the historic setting and were designed to be compatible with the rustic architecture of the neighboring historic district.

Cultural landscape characteristics were not addressed in the 1986 National Register nomination or in the 1996 amendment. However, in addition to the original buildings, the historic district includes several other cultural landscape features, including flagstone paths, a children's play area, barbecue area, and horseshoe pit. The forested viewshed and rustic setting are also important features of the cultural landscape.



Figure 4: Project area and Swiftcurrent Ranger Station Historic District.

EAST GLACIER RANGER STATION HISTORIC DISTRICT

The East Glacier Ranger Station Historic District (Figure 5) is located outside the park boundary but is part of the NPS developed area established at East Glacier in the early 1920s as an administrative complex at Glacier Park Station (the original name of the town of East Glacier). Listed in the National Register of Historic Places in 1986 (Historical Research Associates 1984b and NPS 2015b), the historic district represents an important early park administrative site. Prior to the construction of Highway 2 and the Going-to-the-Sun Road, the East Glacier Ranger Station was the main administrative site for the east side of the park, and provided living quarters and stables in addition to administrative, carpentry, and blacksmithing services. Upon completion of Going-to-the-Sun Road in 1933, St. Mary became the main administrative site on the park's east side, but East Glacier still retained important functions.

Nine of the district's ten buildings are contributing features. The district includes the ranger station/residence, two additional residences, three employee garages, an equipment shop, an ice house, a fire cache, and a gas and oil house. Four original buildings, including an equipment shed, bunkhouse/mess house, warehouse, and garage, were demolished by the Civilian Conservation Corps in

1937. One of the early employee garages, included in the original nomination, was demolished in 1984; its replacement is now the only non-contributing building in the district. The historic buildings contribute to the architectural significance of the site, as the materials and design are characteristic of many NPS rustic buildings built in the 1920s and 1930s. An addendum was added to the National Register nomination in 1996 to describe and evaluate the interior of the buildings (NPS 1996a).

Cultural landscape characteristics were not addressed in the 1986 National Register nomination for the East Glacier Ranger Station, nor in the 1996 amendment. Landscape features include the spatial arrangement of the historic buildings, circulation, and a forested viewshed.



Figure 5: Project area and East Glacier Ranger Station Historic District.

Impacts of Alternative A—No Action

No action would be taken, and there would be no new impacts to historic structures or cultural landscape features within the Swiftcurrent Ranger Station or the East Glacier Ranger Station Historic District.

Cumulative Effects

Because there would be no new impacts, there would be no cumulative impacts to either historic district.

Conclusion

No action would be taken, and there would be no new direct, indirect, or cumulative impacts to historic structures and cultural landscape features within the Swiftcurrent Ranger Station and East Glacier Ranger Station Historic Districts.

For purposes of Section 106 of the NHPA, Alternative A is not considered an undertaking and would have no effects on historic properties.

Impacts of Alternative B—Construct Replacement Housing at Swiftcurrent and East Glacier (Proposed Action and NPS Preferred)

SWIFTCURRENT (MANY GLACIER) RANGER STATION HISTORIC DISTRICT

New housing at Swiftcurrent would be constructed outside but adjacent to and visible from the Swiftcurrent Ranger Station Historic District, with a slight overlap at the northwest corner (Figure 4). The project would have an adverse visual impact on the district because the mass and scale of the two-story eightplex and, to a lesser degree, the one-story fourplex would be out of proportion with existing buildings. Additional multiple car parking areas would also not be characteristic features of the district's era. Locating the eightplex near (just north of) housing built in the 1990s would group the new structure with other non-historic buildings of similar mass and scale and minimize its disproportionate appearance as much as possible.

The nomination for the Swiftcurrent Ranger Station Historic District to the National Register of Historic Places states that "The architectural and historical significance of the Swiftcurrent ranger station derives from its unique design and materials, different from any ranger station in Glacier, and the fact that all structures were constructed within a year of each other" (Historical Research Associates 1984a). Under Alternative B, no physical changes would be made to any of the historic buildings within the district; unique architectural features (such as frame construction with understated Swiss-inspired elements, carved eave brackets, decorative truss work, and board-and-batten gable ends with decorative cuts) would remain unchanged. The project would therefore not affect the architectural and historical significance of the district and its contributing structures, and would not change the district's eligibility for listing in the National Register of Historic Places.

The new infrastructure would add non-contributing elements to the west and east ends of the historic district's northern viewshed. The fourplex (at the east end of the viewshed) would only be one story tall and therefore minimally visible from other locations within the district. The eightplex (at the west end of the viewshed) would be a two-story structure and more visible with more noticeable effects on the northwest viewshed. The visibility of the new buildings and the removal of vegetation (including some mature lodgepole pine trees) within an approximately 0.3-acre area at both building sites would alter landscape characteristics and intrude on the rustic aesthetic of the small, remote, and forested setting, but the integrity of the historic district would not be affected to the degree that its eligibility for listing in the National Register would be affected. The east, west, and south viewsheds would remain unchanged, and the project would not alter the spatial organization of historic structures nor affect notable cultural landscape features, including flagstone paths between buildings, a children's play area, horseshoe pits, a barbecue, and most of the roads. The district's historic integrity would also be preserved through the use of materials and design features for the new buildings that are compatible with the historic district's architectural character. Also, restoring the historic entry to the district would benefit the cultural landscape by restoring historic circulation patterns in the vicinity of the ranger station.

The project would cause non-historic audible impacts during the estimated six-month long construction period for each structure (with construction possibly occurring over non-consecutive months). Permanent non-historic audible impacts during the summer months, such as vehicle noise and noise

from social activities, for example, from 18 to a maximum of 36 additional residents (depending on the number of employees required to share quarters) may also occur, but are not expected to differ much from existing human-caused noise.

EAST GLACIER RANGER STATION HISTORIC DISTRICT

The proposed duplex would be constructed within the boundaries of East Glacier Ranger Station Historic District (Figure 5) and would be out of mass and scale with most of the buildings. Negative visual effects would be minimal, however, since the new building would be placed in the maintenance yard behind the district's main features and next to the equipment shop, which is the district's largest building. The new duplex would therefore be located adjacent to an existing building of the same general mass and scale. The duplex would also be designed to be compatible with the historic district's architectural features.

The project would have minimal adverse, as well as some beneficial impacts to the district's cultural landscape. The duplex would not affect the spatial arrangement of the district's historic buildings. The location of the structure would likely influence circulation patterns within the maintenance yard, as pedestrians and vehicles would have to skirt the new building, but impacts would be small since the essential function of the maintenance yard would remain unchanged. Because the duplex would be located next to an existing building of similar size, there would be little visual intrusion on the district's southeast viewshed. Landscaping and the addition of native vegetation to the duplex site would have positive impacts to the cultural landscape.

The project would introduce non-historic audible impacts during the estimated six-month construction period. Permanent non-historic audible impacts from the addition of up to four more residents would not noticeably differ from noise caused by existing levels of residential activity.

Cumulative Effects

Previous actions, such as replacement cabins at Swiftcurrent Motor Inn, the installation of satellite dishes and radio communications equipment, and actions to improve accessibility, have negatively affected historic structures and settings through the incremental introduction of non-historic elements. For most of these actions, the intensity of negative impacts has been kept fairly low with mitigation measures, such as vegetative or structural screening and architecturally compatible designs. One of the projects listed in the cumulative action scenario, the replacement of the Swiftcurrent Bridge, resulted in an adverse effect to the Swiftcurrent Bridge under Section 106 of the NHPA. Other actions, such as rehabilitation of walkways at the Many Glacier Ranger Station, rehabilitation/repair and cyclic maintenance of historic structures (including structures in the housing areas), and ongoing rehabilitation of the Many Glacier Hotel, have benefitted historic structures and settings through the reintroduction of historic elements and/or the removal of non-historic elements. Utility improvements have prevented potentially damaging sewage leaks and ensured water tightness. While new housing built in the 1990s introduced non-historic elements to the Swiftcurrent Ranger Station Historic District (Figure 4), the structures were designed to be compatible with the rustic architecture of the existing historic buildings and replaced trailer houses that detracted substantially from the historic setting. Similarly, ongoing and future activities in Many Glacier and at East Glacier will also result in both positive and negative effects to historic properties.

The proposed new housing would be another introduction of non-historic elements to the Swiftcurrent Ranger Station and East Glacier Ranger Station Historic Districts (Figures 4 and 5), and would negatively impact the districts' historic visual and aesthetic character, especially at Swiftcurrent. These impacts from Alternative B, when combined with overall low intensity negative impacts from other past, present, and reasonably foreseeable future actions, as well as beneficial effects, would result in a minimal level of adverse cumulative impacts.

Conclusion

The proposed new housing structures would be out of mass and scale with historic buildings in the Swiftcurrent Ranger Station and East Glacier Ranger Station Historic Districts (Figures 4 and 5), and would adversely impact viewshed elements that contribute to the districts' cultural landscapes (especially at Swiftcurrent). There would also be temporary adverse impacts to the historic settings from noise during the construction period. While the project would introduce non-historic elements, the new buildings would be as compatible as practicable with historic architectural characteristics. Adverse impacts, including cumulative effects, are therefore not likely to be significant.

Wildlife

Affected Environment

The Many Glacier Valley is a long, narrow valley stretching between the foothills of the Continental Divide and the park's eastern boundary. The drainage is approximately seven miles long and three miles wide between Swiftcurrent Ridge to the north and Boulder Ridge to south, widening at the head of the valley where Swiftcurrent, Wilbur, and Cataract Creeks converge. Lake Sherburne, a more than five-mile long reservoir, extends along much of the valley's length, from Sherburne Dam just outside the park's east boundary to the Swiftcurrent Creek inlet and confluence with two other major drainages, Apikuni and Canyon Creeks. Primary developments include the Many Glacier Road, which runs along most of the length of the valley, the Many Glacier developed area on the east shore of Swiftcurrent Lake, the Many Glacier Picnic area west of Swiftcurrent Lake, and the Swiftcurrent developed area at the west end of the Many Glacier Road. The Swiftcurrent housing area is at the east end of the Swiftcurrent developed area (Figure 6).

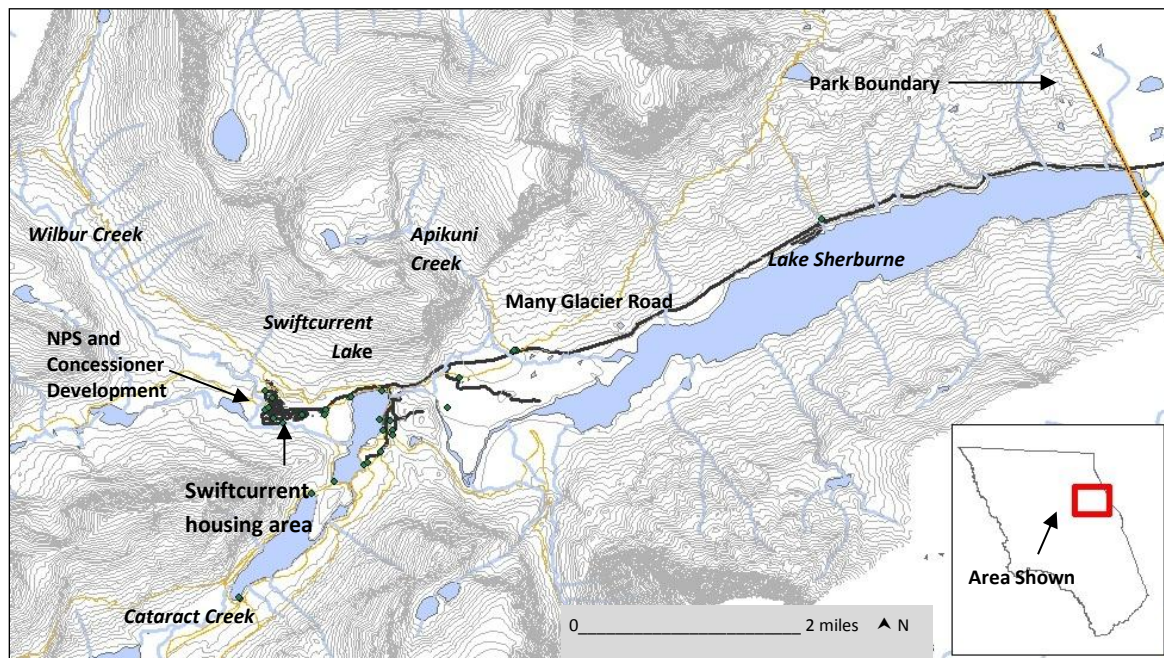


Figure 6: The Many Glacier Valley and Swiftcurrent housing area (project area).

The Many Glacier Valley is made up of diverse and productive habitat types that support numerous wildlife species year-round and provide connectivity between several primary wildlife travel corridors. Avalanche chutes and shrub-fields contain essential grizzly and black bear forage in spring, summer, and

fall. Riparian woodlands, sedge meadows, and wetlands provide denning, nesting, and foraging habitat for marten, mink, beaver, small mammals, bats, songbirds, raptors, and amphibians. Nesting bald eagles forage at the valley's numerous lakes, and golden eagles and prairie falcons nest along the cliff bands. The steep talus fields, high elevation ridges, and cirque basins of the alpine zone are home to wolverines, mountain goats, and bighorn sheep. Moose, whitetail deer, and mule deer inhabit the valley year-round, and isolated, forested mountain ridges provide secure habitat for large herds of elk throughout the spring, summer, and fall. Most of the park's large carnivores including grizzly and black bears, mountain lions, Canada lynx, wolverines, and gray wolves are found here, partly because of the healthy ungulate populations.

The Sherburne Dam, constructed in 1919, flooded several small lakes, reaches of Swiftcurrent Creek, and highly productive riparian/wetland areas. Today, the immediate shoreline surrounding Lake Sherburne supports little vegetation because of fluctuating water levels and is marginally important wildlife habitat. But lakeside meadows provide late fall, winter, and spring habitat for elk and there is a bald eagle nesting territory with two known nest sites on the slopes above Lake Sherburne. North-south movement of many species of wildlife occurs within the limited forested habitat between Lake Sherburne and Swiftcurrent Lake.

Many wildlife species utilize valuable habitat within the Many Glacier Road corridor and near developed areas. Wild animals regularly cross the Many Glacier Road, which bisects year-round wildlife habitat and primary wildlife travel corridors. To provide secure wildlife habitat during winter, the Many Glacier Road is closed to all vehicle use from January 1st to March 31st, and to public vehicle access from the third weekend of November until the third weekend of April.

Some elusive species of wildlife, such as mountain lions, wolverines, and lynx, tend to avoid Many Glacier's developed areas during the high visitor use period, which is generally between Memorial Day and Labor Day. Park managers discourage some wildlife species, including black bears, grizzly bears, and mountain lions from frequenting human developed areas during the visitor season. During the late fall, winter, and early spring, the remoteness of the Many Glacier Valley and relative lack of human activity encourage shy species like lynx, marten, and wolverine to use all available habitats, including those found within the developed areas.

Undeveloped areas provide important security and habitat connectivity for wildlife. Animals utilize these areas as travel corridors, for foraging opportunities, and for shelter from human-caused disturbances. Between Lake Sherburne and the head of the Many Glacier Valley, there are a limited number of places where wildlife can make a full north-south traverse across the valley. An approximately two-acre area of mature lodgepole pine forest between the Swiftcurrent housing complex and the Many Glacier picnic area is one of these crossings, and may be essential in maintaining connectivity between the north and south sides of the valley west of Lake Sherburne (Figure 7).

The NPS developed area in East Glacier is in town on a small lot of approximately two acres that is bounded by roads. The lot includes approximately one-half acre of fragmented vegetation, which may be used by a few nesting birds and other common wildlife species (such as squirrels, other rodents, and small mammals). An approximately 30-foot wide swath of diverse vegetation (willow, mountain ash, serviceberry, spirea, and woods rose) along the south edge of the site likely provides additional habitat for similar species of wildlife.

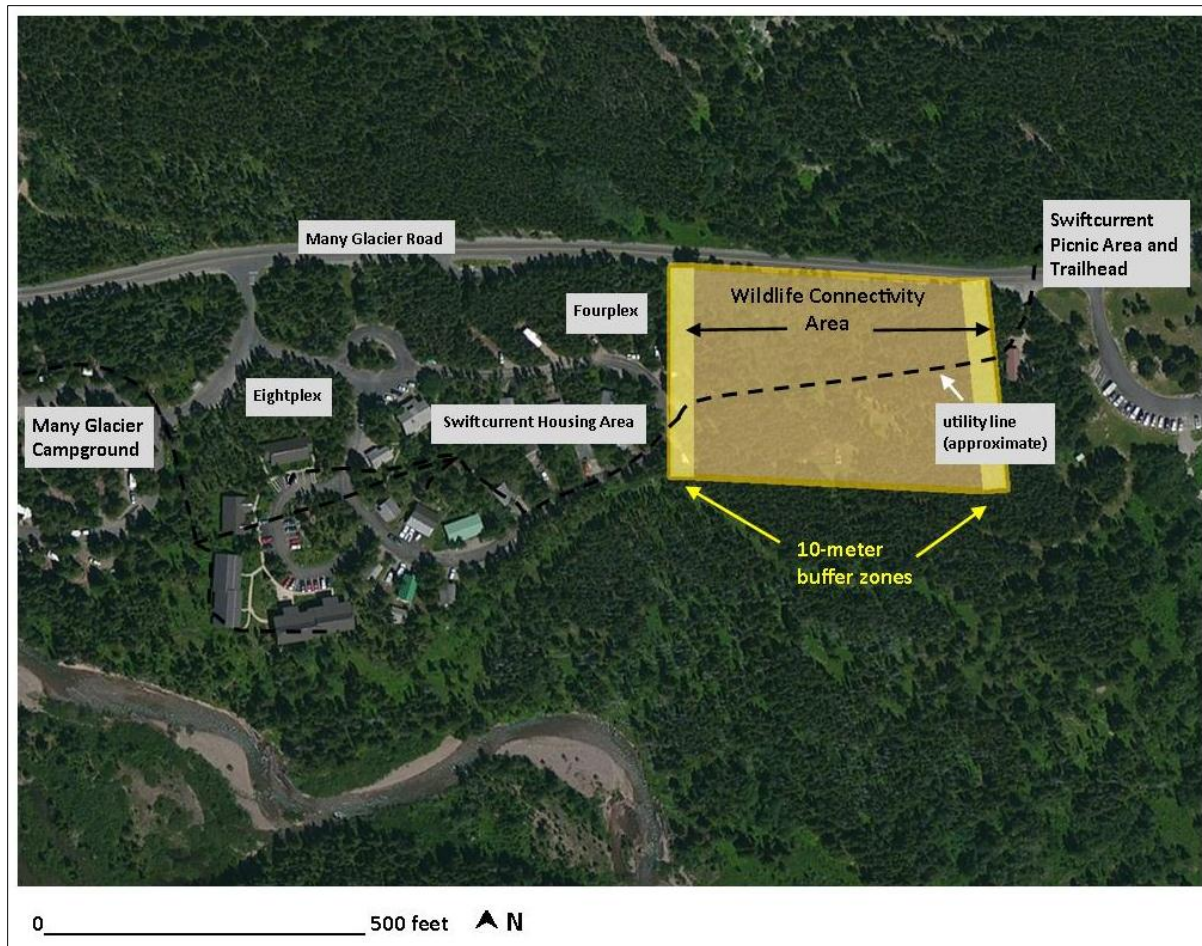


Figure 7: Wildlife connectivity area between the Swiftcurrent housing area and Many Glacier picnic area.

Impacts of Alternative A—No Action

There would be no action and no new effects on wildlife under Alternative A.

Cumulative Effects

Because there would be no new impacts, there would be no cumulative impacts to wildlife.

Conclusion

No action would be taken under Alternative A, and there would be no new direct, indirect, or cumulative impacts to wildlife.

Impacts of Alternative B—Construct Replacement Housing at Swiftcurrent and East Glacier (Proposed Action and NPS Preferred)

The potential for wildlife to be disturbed by human activity would increase temporarily during the estimated six-month construction period for each structure (with construction possibly occurring over non-consecutive months), and for the longer term due to the addition of more seasonal residents to the Swiftcurrent housing area. Disturbance effects may include energetically costly physiologic responses, nesting and foraging interruptions, avoidance or disruption of travel routes, or displacement from habitat. Higher levels of noise and human activity from an additional 18 to 36 (depending on staffing levels and housing arrangements) seasonal residents could displace wildlife using nearby areas during the summer, including the approximately 2-acre wildlife connectivity area immediately east of the project area (Figure 7). Large, wide ranging species could be displaced from using the connectivity area

as a travel corridor to access alternative forage and denning habitat or areas that are secure from human caused disturbance. Species with small ranges would likely still be able to use the connectivity area, and may be able to access alternative habitat at a reduced geographic scale. Small patches of undisturbed habitat at the building sites that are potentially used by smaller species, such as nesting birds and small mammals, would be permanently lost to the new development. Effects to wildlife are not likely to increase significantly beyond existing levels, however, since the project would occur in an already developed area with typically high levels of human activity. Impacts would also not affect any wildlife species at the population level. Disturbance and displacement of wildlife would be most likely during the summer months, when the housing area is in use. During winter, when the housing area is not in use and human occupation of the Swiftcurrent developed area is much reduced, wildlife would be able to utilize surrounding habitat with minimal, if any, human-caused disturbances or displacement.

The overall development footprint at the housing area would increase by approximately 0.6 acre (0.3 acre estimated for both the eightplex and fourplex), but would not encroach into the wildlife connectivity area (Figure 7). This would be accomplished by building the new housing units between existing structures. A mitigation measure that calls for planting additional vegetation at the western-most edge of the wildlife connectivity area would increase screening and minimize the potential for increased residential activity to disturb wildlife within the connectivity area. Wildlife using the wildlife connectivity area could be disturbed during excavation to connect the fourplex to the existing utility line at the west end of the wildlife connectivity area (Figure 7). Impacts to wildlife would be negligible, however, given that only an estimated 10-foot x 2-foot trench just inside the west edge of the connectivity area would be excavated, with disturbance effects anticipated to last for only one to two weeks. No work would occur at night-time hours when wildlife use of the connectivity corridor could be higher.

With potentially more employees commuting from Swiftcurrent to duty stations outside of Many Glacier, traffic on the Many Glacier Road could increase, putting wildlife at a greater risk of injury or mortality from motor vehicles. Depending on how many employees are required to commute, traffic on the road could increase by up to 72 one-way vehicle trips per day, five days a week, perhaps more. Current traffic counts on the Many Glacier Road show approximately 1,000 vehicles per day entering the park, resulting in 2,000 one-way trips; thus there could be an approximately 3.5 to 4 percent increase in the number of vehicle round trips ($72/2000 = 0.36$). The park does not have data for the temporal distribution of traffic volume on the Many Glacier Road, so it is difficult to quantify how this increase would impact vehicle-wildlife collision probabilities. It is safe to say that the probability of being hit by a vehicle would increase the most for species with small ranges that include the Many Glacier Road (such as ground squirrels and red squirrels, for example). The risk of collisions could also be higher during early morning and late evening, when many animals are most likely to be active and crossing or travelling the road, and when commuting is also most likely to occur. Additionally, there would be a potential increase in traffic and activity during the shoulder seasons and closure periods due to routine and emergency maintenance and repairs (e.g., frozen pipes) of the additional infrastructure. The increased level of risk to wildlife would be small, however, relative to that associated with existing traffic volumes, with no population-level effects.

At East Glacier, effects on wildlife would be negligible or less because the proposed project area is in town on a small lot of approximately two acres that is bounded by roads. Fragmented vegetation within the lot and a swath of vegetation along the south edge of the site may be used by nesting birds and other common wildlife species (such as squirrels, other rodents and small mammals). Noise and activity from construction could displace individual animals, but displacement effects would be limited to the estimated six-month construction period. A negligible amount of habitat would be permanently lost,

because the new building footprint would occupy approximately 0.3 acre of ground or less, very little of which is considered usable wildlife habitat. Wildlife at the East Glacier project area would therefore not be affected beyond the temporary displacement of a small number of individuals.

Cumulative Effects

Depending on the scale of the project, previous actions in the Many Glacier Valley may have resulted in the intermittent disturbance and/or displacement of wildlife within the valley's approximately 75-acre, non-contiguous development footprint. Combined effects from small-scale projects (such as rehabilitating walkways) have typically been localized to the project areas, while larger projects (rehabilitation of the Many Glacier Road, for example) may have had more widespread effects while project activity is underway. Permanent changes to the localized distribution of some small species have likely resulted from new construction (such as new housing constructed in the 1990s, for example). Onsite monitoring by park staff has been in place to ensure compliance with requirements, such as proper attractant storage, and mitigation measures, such as reduced speed limits. Mitigation combined with restricting vehicle access to the Many Glacier Valley during the core wildlife security period (January 1 to March 31) has minimized adverse impacts to wildlife such that the cumulative effects from other actions have not affected wildlife at the population level nor measurably changed overall species distribution and abundance.

The level of disturbance to wildlife from other projects would increase slightly with the addition of more residents to the Swiftcurrent housing area, and with increased traffic levels on the Many Glacier Road. The increase would be incremental, with little difference from existing impacts given already high levels of human activity in the Swiftcurrent developed area and the amount of traffic on the road. Disturbance levels would be elevated somewhat during projects near Swiftcurrent, especially for projects that require heavy equipment, result in increased traffic volume, or take place during the spring and fall shoulder seasons. A slightly elevated level of disturbance to wildlife could also be expected if ongoing and future projects occur at the same time the new housing structures are being built. If rehabilitation of the Many Glacier Road takes place during the summer, the increase in human activity from the new housing would add to the number of vehicles and people encountered by wildlife during road work. There would be no additional impacts from early plowing to the Many Glacier Hotel in 2016 and 2017. Overall, cumulative impacts to wildlife from the proposed action combined with past, ongoing, and reasonably foreseeable actions would not affect wildlife population levels or change the overall distribution and abundance of wildlife species in the Many Glacier Valley or Swiftcurrent area.

Conclusion

Construction activity, an increased number of residents in the Swiftcurrent housing area, and increased traffic on the Many Glacier Road due to commuting employees would result in some disturbance and displacement effects to wildlife. These impacts would incrementally increase existing adverse impacts. Population level effects are not anticipated, however, and the project would occur in an already developed area with typically high levels of human activity. Displacement effects and adverse impacts to wildlife are therefore not likely to be significant.

Canada Lynx and Grizzly Bears (federally listed as threatened)

Affected Environment

CANADA LYNX

Historically, Canada lynx were considered "more or less common" throughout the park (Bailey and Bailey 1918). Sightings declined during the 1970s and 1980s and have increased in recent years (NPS files). Sightings may not be particularly sensitive to population changes, however, and should be interpreted with caution. Systematic lynx surveys via snow tracking in 1994 and hair-snare/DNA

sampling in 1999 and 2000 detected lynx in several drainages throughout the park, including the Many Glacier Valley.

Lynx typically inhabit gentle, rolling topography (Maletzke et al. 2008, Squires et al. 2013) with dense horizontal cover, persistent snow, and moderate to high snowshoe hare densities. In the western United States, lynx are most closely associated with Engelmann spruce, subalpine fir and lodgepole pine forest types between elevations of 4,920 to 6,560 feet (McKelvey et al. 2000). Dry forest cover types (e.g., ponderosa pine, dry Douglas-fir) do not provide lynx habitat (Koehler et al. 2008, Maletzke et al. 2008, Squires et al. 2010). Snowshoe hare are the primary prey of lynx. Berg et al. (2012) found that some of the highest snowshoe hare densities in Wyoming occur in multi-story mixed aspen/spruce-fir forests. Aspen/tall forb community types may be productive habitat for snowshoe hares, grouse, and other potential lynx prey.

Preliminary lynx habitat modeling for the park defined moist conifer forest above 4,000 feet elevation as most likely to support lynx. Little is known about lynx habitat use in the park and these criteria are general in nature. Habitat throughout the park meets these criteria and the park's wildlife observation database contains records of Canada lynx including sightings and tracks in the North Fork, McDonald, Saint Mary, Two Medicine, and Many Glacier Valleys. Although no lynx den sites have been documented in the park, lynx family groups have been observed via remote camera stations, and winter tracking efforts have indicated the presence of resident lynx populations in the North Fork, Middle Fork, Many Glacier, and Two Medicine Valleys and elsewhere on the east side of the Continental Divide.

Lynx and lynx sign have been recorded in the Many Glacier Valley for over 40 years. The park's wildlife observation database contains many records of Canada lynx from Many Glacier, including several observations of family groups. During the wolverine population study in the winters of 2004-2007, lynx were captured and released from wolverine live-traps approximately 35 times, representing an unknown number of individuals (Copeland and Yates 2008). Over the last ten years, lynx and lynx tracks have been observed in or near the Swiftcurrent housing area during winter and early spring (December – April) (GNP files). Critical habitat for lynx was designated by the US Fish and Wildlife Service (USFWS) in 2006 and revised in 2014 (USFWS 2015), and the Many Glacier Valley is included in the designation.

Few studies have examined how lynx react to human presence. Some anecdotal information suggests that lynx are quite tolerant of humans, although given differences in individuals and contexts, a variety of behavioral responses to human presence may be expected (Staples 1995, Mowat et al. 2000). Preliminary information from winter recreation studies in Colorado indicates that some recreation uses are compatible, but lynx may avoid some developed ski areas (J. Squires, personal communication 2012). Olson et al. (2011) noted that lynx dens were located in more remote areas and unlikely to be disturbed by humans.

GRIZZLY BEAR

Glacier National Park is part of the Northern Continental Divide Ecosystem (NCDE) Grizzly Bear Recovery Zone. The northern third of the NCDE is occupied by the Greater Glacier Area (GGA), which includes the park and is defined from north to south by the Canadian border and the park's southern boundary, and from east to west by the Blackfeet Indian Reservation and the Whitefish Mountains (Kendall et al. 2008). Genetic analysis of hair samples collected during 1998-2000 resulted in a population estimate of 241 grizzly bears in the GGA (Kendall et al. 2008). No population estimate has been developed exclusively for Glacier National Park. The current NCDE population estimate is approximately 1,000 grizzly bears (USFWS 2015b). Data from the NCDE grizzly bear population trend monitoring project indicates that the ecosystem's grizzly bear population trend is increasing at 3% per year (data from 2004-2011; Mace and Roberts 2012 and Mace et al. 2012).

Grizzly bear habitat is found throughout the park from the lowest valley bottoms to the summits of the highest peaks. Grizzly bears require large areas of undeveloped habitat, including a mixture of forests, moist meadows, grasslands, and riparian habitats, and a substantial amount of solitude from human interactions (USFWS 1993). They have home ranges of 130 to 1,300 square kilometers (USFWS 1993). Grizzly bear seasonal movements and habitat use are tied to the availability of different food sources. In spring, grizzly bears feed on winter-killed ungulates and early greening herbaceous vegetation at lower elevations (Martinka 1972). During the summer, some bears move to higher elevations in search of glacier lilies and other roots, berries, and army cutworm moths. Avalanche chutes provide an important source of herbaceous forage for grizzly bears in the early summer and fall (Mace and Waller 1997). In the fall, bears will continue to forage for berries, roots, insects, and carrion and will broaden their search for food considerably in order to build up enough fat reserves for the winter denning period. During the winter, grizzly bears hibernate in dens away from human disturbance, typically at higher elevations on steep slopes where wind and topography cause an accumulation of deep snow. The denning season in the western portion of the NCDE usually begins in early October, and upon emergence, females may linger near dens until late May (Mace and Waller 1997).

Glacier National Park was placed into grizzly bear management “situations” in accordance with Interagency Grizzly Bear Committee (IGBC) guidelines (USFS 1986), and as directed by the Grizzly Bear Recovery Plan (USFWS 1993). Over one million acres of the park (recommended wilderness) are established as Management Situation 1, in which management decisions favor the needs of the grizzly bear when grizzly habitat and other land-use values compete, and grizzly-human conflicts are resolved in favor of grizzlies unless a bear is determined to be a nuisance (NPS 2010a). The remainder of the park is developed front-country and established as Management Situation 3, where grizzly habitat maintenance and improvement are not the highest management considerations, grizzly bear presence is actively discouraged, and any grizzly involved in a grizzly-human conflict is controlled (NPS 2010a). The Swiftcurrent housing area is within Management Situation 3 (Figure 5); however, Management Situation 1 habitat is within 200 meters.

A search of the park’s grizzly bear sightings database reveals that over 2400 grizzly bear observations have occurred throughout the park within the last five years, including sightings of both grizzly bear family groups (females with young) and individual bears (NPS files). Of those, over 1300 are from the Many Glacier district, more than any other district in the park. Grizzly bear sightings in the park are most frequently reported from May through August. The number of reported observations is likely correlated with visitor use, and is not necessarily an indicator of relative grizzly bear presence and habitat use. Some bears have habituated to the high level of human activity during the summer, and continue to use open habitats along roads and within sight of facilities and areas where people are present. Bears that are more sensitive to human disturbance may avoid developed areas entirely or concentrate their activity at night or in remote areas relatively free from human influence.

Grizzly bears make extensive use of the Many Glacier Valley throughout the year. From August through October, grizzly and black bears typically forage on the southerly slopes of Mt. Altyn and other sites, feeding on serviceberry, kinnikinnik berries and other plants. In addition to diverse foraging habitat, grizzly bears require natural habitat that provides connectivity, or travel corridors, between foraging sites. Grizzly bears have been observed moving through the Many Glacier developed area as they travel to seasonally important habitats in more remote areas. Park biologists have identified important grizzly bear travel corridors near the Many Glacier Hotel and the Swiftcurrent Motor Inn. Grizzly bear habitat modeling by the Cumulative Effects Model (CEM) Working Group indicates that grizzly bear habitat values in the vicinity of the project area are generally moderate during spring and fall and low to

moderate during summer, with higher values in the wildlife connectivity area (Figure 7) in the spring (CEM 2004, based on findings from Mace et al. 1999).

The NPS developed area at East Glacier is within the town of East Glacier Park and therefore does not contain grizzly bear habitat; bears are discouraged from entering the town, and when they do, they are actively encouraged to leave the area.

Grizzly bear/human interaction is a management concern that can threaten bears as well as employee and visitor safety. Bears that are familiar with humans have the potential to become habituated to human presence, leading to further habituation and increased potential for bear/human encounters. Habituated bears are at greater risk of becoming food conditioned and may aggressively seek human food. Habituated bears are usually relocated or hazed from developed areas, and food conditioned bears are oftentimes removed from the population. Bears not habituated to humans are likely displaced from foraging areas and travel routes in proximity to hiking trails and developed areas.

The goal for grizzly bear management in Glacier National Park is to provide sufficient quality habitat to facilitate grizzly bear recovery. Implementing measures within the authority of the NPS to minimize human caused grizzly bear mortalities is an integral part of this goal. The *Glacier National Park Bear Management Plan* (NPS 2010a and b) guides the management of grizzly bears by prescribing actions that are necessary for the protection of the species and the safety of the park visitor.

Impact of Alternative A—No Action

There would be no action under Alternative A, and therefore no new impacts to Canada lynx or grizzly bears.

Cumulative Effects

Because there would be no action and no new impacts to Canada lynx and grizzly bears, there would be no cumulative effects from this alternative combined with past, ongoing, and future actions.

Conclusion

There would be no action under Alternative A, and therefore no new direct, indirect, or cumulative impacts to Canada lynx or grizzly bears. The determination of effects under section 7 of the ESA would be “no effect”.

Impacts of Alternative B—Construct Replacement Housing at Swiftcurrent and East Glacier (Proposed Action and NPS Preferred)

CANADA LYNX

While there is a lack of research describing lynx behavior in developed areas and their use of fine scale habitat patches, the slight increase in noise and human activity in the Swiftcurrent housing area due to the addition of 18 to 36 (depending on whether the maximum possible number of employees share quarters in the new residences) could possibly disturb or displace individual lynx from adjacent undeveloped areas during the summer months. The wildlife connectivity area between the housing complex and the picnic area is of particular concern (Figure 7), as it is one of the few places west of Lake Sherburne where lynx can make a full north-south traverse of the Many Glacier Valley. In addition to serving as a travel corridor, the connectivity area likely provides lynx with important hunting opportunities. The additional housing and associated activity could displace individual lynx from using the connectivity area during the summer, funneling lynx to other foraging areas and undisturbed north-south travel corridors further to the west, toward the head of the Swiftcurrent drainage, or possibly east to a narrow corridor between Swiftcurrent Lake and Lake Sherburne. During the core security wildlife period between January 1 and March 31, when vehicle access to the Many Glacier Valley is restricted, lynx would be able to use the wildlife connectivity area without disturbance. Displacement effects would not be expected to impact lynx at the population level, because lynx in the Many Glacier Valley are part of a parkwide population that utilizes habitat throughout the park. The small, incremental increase in disturbance would not appreciably alter habitat characteristics and prey densities in the area, and Many

Glacier supports some of the highest snowshoe hare (a primary prey species for lynx) densities in the park (Cheng 2011). Other research has suggested that lynx are relatively tolerant of human disturbance and that prey availability is more important in terms of maintaining habitat viability and population sustainability (Poole 2003).

Due to high existing levels of human activity at the housing and picnic areas, the east and westernmost edges of the wildlife connectivity area are likely of fairly low habitat value for lynx (Figure 7). The most functional portion in terms of distance from human activity areas and suitable habitat for lynx prey species, such as snowshoe hare, is considered to exist roughly between 10 meters east of the housing complex and 10 meters west of the picnic area (Figure 7). These 10-meter zones may also act as buffers, absorbing and dispersing impacts from noise and human activity and leaving the interior portion of the connectivity area relatively undisturbed. Planting additional vegetation within the westernmost 10-meter zone would increase screening and the capacity for disturbance effects to be absorbed and dispersed, thereby preserving the connectivity area for lynx use as much as possible.

The footprint for the housing infrastructure would not encroach into the wildlife connectivity area (Figure 7). The development footprint would increase by approximately 0.6 acre (0.3 acre estimated for both the eightplex and fourplex), but the increase would be confined to relatively small patches of undisturbed ground (of little to no habitat value for lynx) within the existing developed area. Therefore, the project would not create additional physical fragmentation of critical lynx habitat. Excavation to connect the fourplex to the existing utility line that bisects the wildlife connectivity area (Figure 7) could disturb or displace any lynx that might be using the connectivity area at the time. Effects would be slight, however, since only an estimated 10-foot x 2-foot trench just inside the west edge of the connectivity area and within the aforementioned 10-meter buffer zone would be excavated, with disturbance effects to lynx anticipated to last for just one to two weeks. No work would occur at night when human activity and traffic are at lower levels and wildlife use of the corridor may be more likely.

Lynx are not likely at high risk of human habituation due to their reclusive nature, although it is not known if they frequent the Many Glacier Road corridor and developed areas during the summer, when visitor use is high. Lynx are most vulnerable to disturbance during their denning season. While no den sites have been documented within the Many Glacier Valley, there is suitable lynx denning habitat in the drainage. The lynx denning period (May to August) correlates with the Many Glacier Valley's high visitor use season, when the number of seasonal employees at the Swiftcurrent housing area would also be at its highest. Lynx are not likely to use the wildlife connectivity area (Figure 7) between the housing complex and picnic area for denning due to its small size and proximity to developments, and because the habitat type is predominantly mature lodgepole pine forest with little horizontal cover. The area may provide lynx with important foraging opportunities during the denning season, and lynx that use the area for hunting may be displaced to less optimal foraging habitat adjacent to the developed area or to undisturbed habitat to the west, toward the head of the Swiftcurrent drainage, or to the east to forested areas near the head of Lake Sherburne. This movement to less optimal foraging areas may expose the animals to increased risk of predation or interactions with humans as a result of the necessity to travel further to new areas.

Noise and construction activity could disturb or displace lynx during the estimated six-month construction period for each structure (with construction possibly occurring over non-consecutive months). Prohibiting construction activity to between the hours of 8 a.m. and 5 p.m. and other measures to protect the connectivity area (such as prohibiting staging or other construction activity within the area and clearly marking the boundary during construction) would minimize impacts to lynx and critical lynx habitat such that the wildlife connectivity area would be preserved for lynx use as much as possible.

Construction would not be underway during the Many Glacier Valley core wildlife security period between January 1st and March 31st, when vehicle access to the valley and the Swiftcurrent area is restricted, and lynx would be able to use the area undisturbed. Prohibiting construction activity during the core wildlife security period would minimize impacts to lynx by decreasing the level to which they may be displaced by human activity and traffic. As a result, lynx would not be forced to avoid the landscape to avoid human activity, and would expend less energy at a critical time of the year when they are recovering from the stress of winter. Lynx would therefore be more likely to reproduce and survive into the coming winter season.

The East Glacier project area does not contain habitat for lynx, and lynx would not be affected by the construction of the duplex.

GRIZZLY BEARS

The proposed new housing structures would be constructed within an existing developed area with typically high existing levels of human activity, especially during the summer months. In accordance with the Management Situation 3 designation for developed areas in the Many Glacier Valley, grizzly bears are discouraged from using the Swiftcurrent housing area. There would therefore be little if any change in the degree to which bears would be displaced from the project area. Many bears likely avoid the area without management intervention. Bears using the wildlife connectivity area between the housing area and the picnic area (Figure 7) to forage or as a travel corridor could be displaced by increased human activity, especially during the construction period. Given its small size, however, the wildlife connectivity area (also within the Management Situation 3 designation) is presumed to be minimally used by grizzly bears, and most likely as a travel corridor only. If frequent grizzly activity was documented in this area (Management Situation 3), the park would actively manage the bears to encourage them to leave. Therefore, impacts to grizzlies as a result of the construction would be no more detrimental than negligible impacts from management actions taken in the area, whether construction occurs or not.

The Swiftcurrent housing area is surrounded by Management Situation 1 habitat that is heavily used by grizzly bears and, while bears are discouraged from using the Swiftcurrent housing area, the potential remains for bears to enter the project area. While most bears in this vicinity may avoid the developed area, there are always a few that will continue to attempt to enter the Management 3 area. Additional residents living in the housing area may result in the increased habituation of wild bears and lead to increased conflicts. This chance of this would be low, however, due to bear management practices as well as the implementation of food and attractant storage requirements that all park housing residents are required to follow.

Grizzly bears are unlikely to venture into the town of East Glacier, and are actively discouraged from frequenting the NPS developed area or other adjacent developments. The construction of the duplex at East Glacier would therefore not affect grizzly bears.

Cumulative Effects

CANADA LYNX

Depending on the scale of the project, previous actions in the Many Glacier Valley may have resulted in the intermittent disturbance and/or displacement of individual lynx in areas adjacent to the valley's approximately 75-acre, non-contiguous development footprint. Combined effects from small-scale projects (such as rehabilitating walkways) have typically been localized to the project areas, and have not likely affected lynx. Larger projects (such as rehabilitation of the Many Glacier Road), especially those with increased vehicle traffic, may have altered the movement patterns of individual lynx in the vicinity of the road and project area during the construction period. Measures such as strict enforcement of speed limits, timing construction activity for less sensitive periods when possible and appropriate (outside the critical lynx denning period, for example), and restricting vehicle access to the

Many Glacier Valley during the core wildlife security period (January 1 to March 31) have minimized adverse impacts to lynx such that the cumulative effects from past and ongoing actions have not affected the species at the population level nor measurably affected lynx habitat or changed lynx distribution.

The level of disturbance to Canada lynx from other projects would increase slightly with the addition of more residents to the Swiftcurrent housing area, and with increased traffic on the Many Glacier Road. The increase would be incremental, with little difference from existing impacts given already high levels of human activity in the Swiftcurrent developed area and the amount of traffic on the road. Disturbance levels would be elevated somewhat during other projects near Swiftcurrent, especially for projects that require heavy equipment, result in increased traffic volume, or take place during the spring and fall shoulder seasons. A slightly elevated level of disturbance to lynx could also be expected if other projects occur at the same time that the new housing structures are being built. If rehabilitation of the Many Glacier Road takes place during the summer, the increase in human activity from the new housing would add to the number of vehicles and people along the road. There would be no additional impacts from early plowing of the Many Glacier Road to the Many Glacier Hotel in 2016 and 2017. Overall, cumulative impacts to lynx from the proposed action combined with past, ongoing, and reasonably foreseeable actions would not affect the species' population or change the overall distribution of lynx in the Many Glacier Valley or Swiftcurrent area.

GRIZZLY BEARS

Previous actions in the Many Glacier Valley and Swiftcurrent area have primarily occurred in areas designated as Management Situation 3, where the presence of bears is actively discouraged. Onsite monitoring by park staff to ensure compliance with requirements (such as proper attractant storage), and restricting vehicle access to the Many Glacier Valley during the core wildlife security period (January 1 to March 31) have minimized adverse impacts to grizzly bears such that the effects from other actions have not affected grizzlies at the population level nor measurably changed their distribution. There would be little if any change in the degree to which bears would be displaced from the project area due to the proposed action, and cumulative impacts to grizzly bears from Alternative B combined with past, ongoing, and reasonably foreseeable actions would not affect bears at the population level or change the overall distribution of grizzly bears in the Many Glacier Valley or Swiftcurrent area.

Conclusion

The additional housing would increase the potential for long-term disturbances that could displace individual lynx from the adjacent wildlife connectivity area. Noise and construction activity during construction could disturb lynx for the shorter term. Displacement effects would not be expected to impact lynx at the population level, and the project would not create additional physical fragmentation of critical lynx habitat.

There would therefore be little if any change in the degree to which bears would be displaced from the project area, given already high levels of human occupation and management actions that discourage grizzlies from frequenting the project area. Implementation of food and attractant storage requirements would reduce the potential for increased bear-human conflicts.

Vegetation and Soils

Affected Environment

The project area is within a nearly 40-acre developed area that is part of a non-contiguous, 75-acre development footprint along the Many Glacier Valley floor (not including the approximately 7.6 miles of the Many Glacier Road from the park boundary to Swiftcurrent). The majority of the Swiftcurrent area is densely wooded in second-growth lodgepole pine, interspersed with black cottonwood, quaking aspen,

subalpine fir, Englemann spruce, and Douglas fir. A fire burned much of the Many Glacier Valley in 1936, followed by the subsequent replanting of 40,000-50,000 lodgepole pine trees. As a result, vegetation within the Swiftcurrent housing area is currently characterized by an overstory of uniform age-class lodgepole pine, with an understory of primarily bear grass and other grasses, forbs, and shrubs.

The proposed site for the eightplex near the ranger station was likely disturbed in the past, but has not been disturbed for some time and vegetation at the site is fairly intact. The site for the fourplex and possibly the eightplex at the northeast end of the housing area is within an impacted and restored area, with some undisturbed ground. Six of eight trailer pads at the northeast end of the housing area along the Swiftcurrent Loop Road were revegetated in 1995, along with an access road. Portions of the two west-most trailer pads were also revegetated, with the remainder left unvegetated for employees to use. Over the years, employees have informally parked trailers and other equipment on some of the revegetated pads, impacting restored vegetation, including an approximately 15 to 20-meter wide strip just east of the housing area that forms the westernmost edge of an important wildlife connectivity area (Figure 7) (see also Wildlife, Canada Lynx, and Grizzly Bear sections of this EA).

The proposed site for the duplex at the East Glacier NPS developed area is in a previously disturbed maintenance yard / parking lot (Figure 3). An approximately 30-foot wide swath of diverse vegetation (willow, mountain ash, serviceberry, spirea, and woods rose) along the south edge of the site contributes visually to the rustic ambiance of the historic district.

Impacts of Alternative A—No Action

There would be no action and therefore no new impacts to vegetation and soils under Alternative A.

Cumulative Effects

Because there would be no new impacts to vegetation and soils, there would be no cumulative effects.

Conclusion

Under no action, there would be no new direct, indirect, or cumulative impacts to vegetation and soils.

Impacts of Alternative B—Construct Replacement Housing at Swiftcurrent and East Glacier (Proposed Action and NPS Preferred)

Approximately 0.4 acre would be disturbed at each of the two building sites in the Swiftcurrent housing area, including the footprint for the buildings and associated parking areas, for a total disturbed area of 0.8 acre. An estimated 25% (0.1 acre at each site; 0.2 acre total) of the disturbed area would be temporarily impacted by construction activity during the estimated six-month construction period for each site (with construction possibly occurring over non-consecutive months), then revegetated and restored. The remainder (0.3 acre at each site; 0.6 acre total) would be permanently lost to the building footprints and parking areas. In terms of acreage, the loss of 0.6 acre would have less than negligible effects on soils and vegetation because it would occur within an approximately 40-acre developed area that is part of a non-contiguous, 75-acre development footprint along the Many Glacier Valley floor, and because the surrounding Many Glacier Management Area is over 65,000 acres of otherwise largely undeveloped land (the Many Glacier Road runs for approximately 7.6 miles from the park boundary to Swiftcurrent, and a number of hiking trails and small facilities, such as backcountry cabins are also scattered across the Many Glacier Management Area).

Impacts would primarily occur on ground that has been previously disturbed and restored, but undisturbed ground and areas where disturbance has not occurred for some time would also be impacted. Negative effects at the building sites and parking areas would include soil compaction and the loss of ground cover and understory species, as well as the removal of some trees. Overall, adverse impacts would not affect plant species at the population level, because the disturbance would be

localized to the building sites and the species affected are present throughout the Swiftcurrent area. The USGS-NPS Vegetation Mapping Program reports that there are 83,896 acres of lodgepole pine forest in the park (GNP GIS files). Developed areas do not represent intact vegetation communities, and the vegetation mapping characterizes the Swiftcurrent developed area (including the project area) as “non-vegetated”. Lodgepole pine at the building sites is therefore not included in the parkwide acreage of lodgepole pine forest, and the removal of lodgepole pine trees from 0.6 acre of land under Alternative B would not affect lodgepole pine at a parkwide or district-wide level. No sensitive plants would be disturbed at either the fourplex or eightplex site.

Locating the eightplex near the ranger station and reopening the historic road would result in the loss of native vegetation that was restored in the 1990s. But closing and revegetating the existing entry road would restore native vegetation to disturbed ground. Landscaping with native vegetation near the new residences would benefit visual aesthetics, protect soil function, reduce the potential for non-native weed infestation, and provide habitat for pollinating insects. This combined with restoration/revegetation along the west edge of the wildlife connectivity area (Figure 7) and planting trees along the east end of the Many Glacier Campground (Figure 7) would minimize impacts from the project such that, overall, there would be no meaningful change to the species composition and functionality of vegetative communities within the project area.

Construction at the East Glacier site would occur entirely within the previously disturbed parking area. There would be no new disturbance and therefore no negative impacts to vegetation and soils. Landscaping near the duplex would result in the addition of up to an estimated 0.25 acre of native vegetation to the site, benefitting visual aesthetics, protecting soil function, reducing the chance for non-native weed infestations, and providing a small amount of habitat for pollinating insects.

Cumulative Effects

Past and ongoing actions in the Swiftcurrent area have resulted in a minor amount of soil compaction and vegetation loss due to effects that are primarily localized and specific to the respective project areas. Most projects (aside from project on trails, for example) affecting vegetation and soils in the Swiftcurrent vicinity have occurred (and most future projects would be expected to occur) within or adjacent to existing developed areas in an approximately 75-acre, non-contiguous footprint within the over 65,000-acre, mostly undeveloped Many Glacier Management Area. Alternative B would contribute to the loss of soils and vegetation occurring from other actions that involve new construction (such as new housing built in the 1990s), or other permanent disturbances (such as remodeling walkways or rehabilitating campsites). Restoration efforts have minimized the adverse effects of previous ground disturbing activities such that cumulative impacts have not affected plants at the population level nor changed overall species composition and diversity, and have not diminished soil function. Cumulative impacts from Alternative B combined with past, ongoing, and reasonably foreseeable future actions would have little effect to vegetation and soils due to the small area affected and subsequent restoration efforts.

Conclusion

At Swiftcurrent, the project would adversely affect a total of approximately 0.8 acre of primarily previously disturbed and revegetated ground; some undisturbed ground and areas that have not been disturbed for some time would also be negatively affected. Restoration would minimize adverse impacts, plant species would not be affected at the population level, and no sensitive species would be affected.

At East Glacier, construction would occur entirely within a previously disturbed parking area, and there would be no negative impacts to vegetation and soils. Landscaping would have some beneficial effects.

COMPLIANCE REQUIREMENTS, CONSULTATION, AND COORDINATION

Internal and External Scoping

Scoping is an early and open process to determine the breadth of environmental issues and alternatives to be addressed in an EA. Glacier National Park conducted both internal scoping with park staff and external scoping with the public and interested and affected groups and agencies. The scoping process helped identify potential issues, alternatives, resource impacts, and cumulative effects.

Public scoping began on July 3, 2012 and the comment period closed on August 6, 2012. A press release was distributed to several media outlets and a scoping brochure was mailed to individuals and organizations on the park's EA mailing list, including members of Congress and various federal, state, and local agencies. An email announcement was sent to a number of interested parties, with a link to the brochure on the NPS Planning, Environment, and Public Comment (PEPC) website.

Forty-two correspondences were received during scoping. Forty were from individuals, one was from an organization (National Parks Conservation Association) and one was from a federal agency (US Army Corps of Engineers). Four letters were supportive of the proposal, 37 were opposed, and one did not reflect a position.

Agency Consultation

The Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.) is designed to ensure that any action authorized, funded, or carried out by a federal agency does not jeopardize the continued existence of any endangered or threatened plant or animal species. If a federal action may affect threatened or endangered species, then consultation with the U.S. Fish and Wildlife Service is required. Based on the analysis, the NPS has determined that the proposed action **"may affect, but is not likely to adversely affect"** Canada lynx and grizzly bears. In accordance with section 7 of the ESA, the park has initiated informal consultation with the USFWS; a biological assessment addressing effects to Canada lynx and grizzly bears has been prepared and sent to the USFWS to obtain concurrence with the determination of effects.

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (16 U.S.C. 470, et seq.) requires all federal agencies to consider effects from any federal action on cultural resources eligible for or listed in the National Register of Historic Places (NRHP) prior to initiating such actions. On July 3, 2012, Glacier National Park notified the Montana State Historic Preservation Office (SHPO) of the project in accordance with 36 CFR 800. Based on the analysis, the park's finding of effect is **"adverse effect"** because the new structures would be out of mass and scale with existing structures in the Swiftcurrent Ranger Station Historic District. The Areas of Potential Effect were previously surveyed for archeological resources and none were identified. A recent survey was conducted at Swiftcurrent and no archeological resources were identified. The East Glacier Ranger Station compound must be surveyed prior to ground disturbing activities. The NPS discussed the project and the preliminary finding of effect with the SHPO on August 5, 2015. Consultation is still underway, as the SHPO is still reviewing the project. The park is notifying the Advisory Council on Historic Preservation of the adverse effect finding. If the SHPO concurs with the park's finding of adverse effect, the park and the SHPO will enter into a Memorandum of Agreement (MOA) to avoid, minimize and mitigate the adverse effects.

Native American Consultation

Glacier National Park also notified the Confederated Salish and Kootenai Tribes (CSKT) Tribal Historic Preservation Office (THPO) and Council members, and the Blackfeet THPO and Blackfeet Tribal Business

Council on July 3, 2012, in accordance with 36 CFR800. Meetings were also held with John Murray, Blackfeet THPO, on March 12, 2015, and with the CSKT Tribal Historic Preservation Department on December 18, 2014. Neither the Blackfeet Tribe nor the CSKT raised concerns about the proposed action.

Environmental Assessment Review and Recipients

This EA is available for a 30-day public comment period. The public was notified of the EA availability through news releases to a number of state and local media outlets and a letter and or document to various agencies, tribes, groups businesses and individuals who have asked to receive notification or are otherwise required to get notification. The document will be available for review on the park's planning website at <http://parkplanning.nps.gov/EastSideHousing>. Copies of the EA will be provided to other interested individuals upon request.

During the 30-day public review period, the public is encouraged to submit their written comments to the NPS, as described in the instructions at the beginning of this document. Following the close of the comment period, all public comments will be reviewed and analyzed prior to the release of a decision document. The NPS will respond to substantive comments received during the public comment period.

List of Preparers and Contributors

PREPARERS Name/ Title	Contribution
Lon Johnson, Cultural Resource Specialist (retired)	Provided technical information on historic structures and cultural landscapes; coordinated SHPO consultation
Dawn LaFleur, Restoration Biologist	Provided technical information on vegetation & soils
Mary Riddle, Chief of Planning and Compliance	Developed alternatives; directed internal review, agency consultation, and public involvement; reviewed/edited EA; coordinated EA schedule
Amy Secrest, Natural Resources Specialist/Environmental Protection Assistant	Reviewed/edited EA; coordinated agency consultation and public review; prepared biological assessment
Glen Smith, Park Engineer	Developed alternatives and site design; provided technical information on park energy use trends
Artemisia Turiya, Environmental Protection Assistant	Prepared EA in cooperation with subject matter experts; developed figures
John Waller, Wildlife Biologist	Provided technical information on wildlife and federally listed species
OTHER CONTRIBUTORS Name/ Title	Contribution
Jacquelyn Airhart, Mail and Files Clerk (formerly Fleet Clerk)	Provided data on park fuels usage
Lauren Alley, Writer/Editor	Summarized scoping comments
Micah Alley, Supervisory Park Ranger, Lake McDonald District Ranger and Park Structural Fire Coordinator	Provided technical information on emergency and structural fire response
Mark Biel, Natural Resources Program Manager	Provided technical information on wildlife and federally listed species
Steve Dodd, Park Ranger, Law Enforcement Specialist	Provided technical information on law enforcement and incident response, policies and SOPs
Liz Hackman, Budget Analyst, Facilities Management	Provided data on park fuels usage
Sara Hemmer, Human Resources Officer	Provided park staffing statistics

Dayna Lehrman, Housing Officer	Provided technical information on housing operations
Richard Menicke, GIS Coordinator/Geographer	Provided GIS support and technical information on park lands
Renee Peterson, East Side Housing/ Admin. Clerk	Provided housing data
Deirdre Shaw, Museum Curator, Acting Section 106 Coordinator	Provided technical support on historic structures and cultural landscapes; coordinated SHPO consultation
Dave Soleim, Fire Management Officer	Provided technical information on wildland fire response
Billie Thomas, Facility Management Clerk	Provided data on park fuel usage
Mark Wagner, Supervisory Park Ranger	Provided information on east side park operations
Rob Wissinger, Chief Mountain District Ranger	Provided information on east side park operations
Del Zimmerli, Supervisory Facility Operations Specialist (retired)	Provided technical information on facilities



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

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APPENDIX A

Alternatives, Suggestions, and Concerns from Public Scoping

Forty-two comment letters were received during public scoping in 2012. Comments and concerns have been compiled into common categories and are addressed below.

1. Comment: Long employee commutes, especially after long work hours, are a threat to human safety due to wildlife, icy and snowy road conditions, livestock, and reckless or drunk drivers. **Response:** Commute times would remain within the NPS parameter of 60 minutes one-way. Commute times and potential hazards would be similar to those experienced by many NPS employees.

2. Comment: Costs associated with commuting, including gas and wear and tear on vehicles (especially due to the poor condition of the Many Glacier Road), would be borne by lower graded employees with little ability to absorb the added cost. **Response:** Commuting mileages and associated costs would be similar to those for some similarly graded employees on the west side of the park and at other NPS units. The park is planning to rehabilitate the Many Glacier Road from the entrance station into the valley. Funding is being sought to rehabilitate the road between Babb and the park boundary. The section between the boundary and the entrance station will be repaired only at the worst slump area known as milepost 6.2. The work is slated to begin in 2019. See *Environmental Justice* under *Impact Topics Dismissed from Further Analysis* in this EA.

3. Comment: There is only one way to evacuate the Many Glacier area in the event of a fire. **Response:** The park has an *Emergency Evacuation Plan* (2003) to provide for the safety of guests at the Many Glacier Hotel as well as residents in the Swiftcurrent housing area. The proposed action does not affect the effectiveness of this plan.

4. Comment: The emergency response time for rangers could increase. **Response:** No Required Occupant (RO) positions, which include rangers responsible for emergency response, would be relocated as part of this proposal. See also *Park Operations* under *Affected Environment and Environmental Consequences*.

5. Comment: Longer commute times and acquiring means of transportation could reduce the park's ability to retain and recruit staff. **Response:** This is addressed under *Park Operations* in the *Affected Environment and Environmental Consequences* section of this EA.

6. Comment: Glacier is known for having seasonal employees return every year, which provides a knowledgeable front-line that offers high quality service to visitors. This could be lost, since employees might not return. **Response:** The park has received complaints from employees stating that they will not return due to crowded housing conditions and a lack of appropriate housing. The park values the acquired knowledge of long-time employees, and providing appropriate housing should improve the chances that seasonal employees will return each year. See also *Park Operations* in the *Affected Environment and Environmental Consequences* section of this EA.

7. Comment: Consider building housing at alternate locations such as Rising Sun, in the vicinity of the 1913 Ranger Station, above or in the St. Mary Campground, within the floodplain at St. Mary, or leasing land outside the park. **Response:** See *Alternatives Considered and Dismissed* in this EA.

8. Comment: Consider reconfiguring current occupants at St. Mary, such as housing permanent staff year round in other locations and stationing the trail crew in either Many or East Glacier to reduce commuting times or shift the commuting burden to permanent employees. **Response:** A

reconfiguration of occupants at St. Mary is occurring as appropriate for operational needs and would continue.

9. Comment: Institute an employee shuttle from East Glacier and Swiftcurrent for those commuting to St. Mary, or purchase or lease cars for employees and pay for gas. **Response:** NPS employees have the option to organize carpools and share commuting costs. An employee shuttle could be established in the future. The NPS does not have the authority to pay for expenses incurred by employees to travel to and from work while off duty, except for some law enforcement (LE) positions.

10. Comment: The employee community at St. Mary will be disrupted if housing is not built at St. Mary. **Response:** The park values the sense of community among employees. The intent of this action is to provide employees with quality housing, which is important in establishing and maintaining a sense of community.

11. Comment: Natural flood dynamics at St. Mary cannot be restored until administrative and concessioner activities are removed from the floodplain. A fire cache was recently built at St. Mary. Why can't housing be built at St. Mary? **Response:** Whenever possible, the NPS avoids building in areas that pose risk to lives or property. Facilities constructed at St. Mary since the *GMP* (1999) decision to remove infrastructure from the floodplain have been necessary to maintain the park's ability to provide emergency responses and support park operations until the NPS can relocate from the area. No overnight structures such as housing have been built. See also *Alternatives Considered and Dismissed* in this EA.

12. Comment: Building new employee housing in locations entailing a commute to duty stations is not in keeping with Glacier being a climate friendly park, conflicts with the idea of green building, would increase the park's carbon footprint, and conflicts with park's messaging about taking actions to reduce greenhouse gas (GHG) emissions. It would cause increased GHG emissions, and eliminate the options of biking or walking to work. **Response:** The planning process examined other locations for housing as described under *Alternatives Considered but Dismissed*. East Glacier and Swiftcurrent are proposed as the best locations for east side employees while having the least amount of environmental impact. Commuting and highway transportation is a reality of Glacier's large size and the oftentimes long distances between administrative areas; the remoteness of the east side of the park makes commuting a greater necessity for east side employees. The park has implemented and will continue to implement numerous green building practices and energy saving and GHG reduction measures, as well as strategies to preserve ecological systems in the face of climate change. These actions underscore the park's commitment to being a climate friendly park. Requiring some employees to commute to work would result in a negligible increase in GHG emissions and would not undermine the park's overall efforts to reduce GHG emissions and respond to climate change. Some employees living at St. Mary are able to walk or bike to work, but not all—a number of employees have had to commute. See also *Climate Change* in the *Affected Environment and Environmental Consequences* section of this EA.

13. Comment: The current National Register nomination does not adequately address some significant elements of the larger landscape. A cultural landscape study is needed for the Swiftcurrent area.

Response: This is addressed under *Historic Structures and Cultural Landscapes* in the *Affected Environment and Environmental Consequences* section of this EA.

14. Comment: Instead of the LEED rating system for green building, adopt the other green building codes for implementing green building practices. **Response:** GNP takes guidance from the national level of the NPS, which sets Service-wide policy for the implementation of recently developed green practices. However, the park will consider other green building practices.

15. Comment: Perhaps the park should look at getting an exemption to EO 11988. **Response:** Executive

Order 11988 (Floodplain Management) requires federal agencies to avoid long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of development in floodplains wherever there is a practicable alternative. Due to the St. Mary developed area being in one of the most active floodplains in the lower 48 states, increased uncertainty regarding flood behavior due to climate change, the possible costs related to NPS infrastructure damage, and life, health, and safety risks to employees in the event of a flood, the park will not seek an exemption. Additionally, after Hurricanes Andrew, Katrina, and Sandy, when the NPS lost significant infrastructure, the park is not likely to receive an exemption enabling construction in a flood-prone area. See *Alternatives Considered and Dismissed* in this EA.

Other comments related to concerns about impacts to cultural resources, historic districts, wildlife, and wildlife habitat are addressed in the *Affected Environment and Environmental Consequences* section of this EA.