



United States Department of Agriculture

Starrigavan Watershed and Recreation Enhancement Project

Environmental Assessment, Finding of No Significant Impact & Final Decision Notice



Forest Service

Tongass National Forest:

Sitka Ranger District

R1-MB-874b

March 2021

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ENVIRONMENTAL ASSESSMENT

PROJECT INFORMATION

Project Name: Starrigavan Watershed and Recreation Enhancement Project
Project Initiation Date: 1/20/2020
Interdisciplinary Team Lead: Martin Becker
Line Officer: James Perry Edwards
District: Sitka Ranger District
City/Borough: Sitka
Anticipated Implementation: Late Spring/Summer 2021
Signing Authority: District Ranger
PALS Tracking #: 57497
Project File: <https://usfs.box.com/s/2zzbaex7ldlhfmj5ceg409zhfrzgu9jq>
GIS Info: T:\FS\NFS\Tongass\Project\SRD\Starrigavan\GIS
Project Webpage: <https://www.fs.usda.gov/project/?project=57497>
General Location: Starrigavan watershed, approximately 8 miles north of Sitka on the Sitka road system.
Applicable Management Areas: USFS: Semi-Remote Recreation Land Use Designation; State of Alaska lands
Legal Description: T54S, R63E Sections 3536; T55S, R63E, Sections 1-3, 11-14; T55S, R64E, Sections 6-7.
Elevation Range: 30-2,800 feet
Watersheds (HUC 7): Starrigavan Creek (18010212120601)

PURPOSE & NEED FOR THE PROPOSED ACTION

In the Starrigavan watershed, there is a need for:

- High functioning watershed and fisheries
- A variety of motorized and non-motorized hunting and recreation opportunities that are accessible from the road system
- Safe, affordable, and sustainable recreational opportunities, emphasizing locally popular recreation places

The purpose of this project is to restore and enhance aquatic and recreational resources impacted by previous extreme weather events, as well as, provide a variety of additional recreational opportunities to forest users accessible from the Sitka road system.

In 2014, a large rainfall event triggered landslides in the Starrigavan watershed. The largest of these landslides in the mainstem portion of the valley, along with its runout zone, impacted approximately 2,000 feet of fish habitat stream channel, riparian forests and three floodplain coho rearing ponds. The debris flow knocked a bridge off its foundation and subsequently diverted streamflow out of its original channel and onto downstream trails and existing tributary channels. This diverted streamflow essentially turned approximately 1,000 feet of trail into a new stream channel, causing additional erosion, degraded aquatic habitat, as well as destroying three fish culverts, a coho rearing pond and blocking all use of approximately 0.75 miles of the trail system in the upper watershed.



PROPOSED ACTION

The Sitka Ranger District proposes restoration and enhancement actions which can be roughly divided into watershed (W) and recreation (R) categories. See Appendix A for a summary of allowed uses on trails. Generally, large equipment will be used to:

1. Reconstruct 1,000 feet of stream channel and floodplain to concentrate flows to a stable single thread channel by excavating landslide material and using downed trees to create bank and grade control structures (W).
2. Reconstruct and resurfacing of 2,000 feet of OHV trail that were damaged in landslide to reduce erosion including replacement of 4 fish culverts (87", 87", 64", 64") (W). Trail that was turned into stream channels or heavily eroded will be dewatered, filled in, reshaped and surfaced to restore to prior conditions (R).
3. Construct 2 new ponds for off channel coho rearing habitat (W).
4. Reconstruct 2 existing ponds impacted by landslide/floods. Equipment will excavate material that filled in ponds and restore inlet and outlet stream channels to prior conditions (W).
5. Maintain 500 feet of OHV trail to reduce erosion (including installation of waterbars on sloped trails to prevent surface erosion) (W).
6. Remove 15 failing culverts and replace with hardened drivable fords (W).
7. Install 4 large wood bank structures using native material (logs/stumps) on East Fork Starrigavan Creek to reduce bank erosion (W).
8. Replace failing log stringer bridge over tributary to Starrigavan (W).
9. Install new bridge to create a crossing across new mainstem Starrigavan Creek (R).
10. Install a gate or other restriction device at current entrance to existing parking lot to separate traffic and create an OHV learning/practice area and expand this existing OHV by approximately 7,000 sq. feet to the west (R).
11. Create a new parking lot (appx. 15,400 sq. ft.) by expanding the existing pull out area (waterfall rock pit) along Nelson Logging Road using heavy equipment (R).
12. Create an approximately 500-foot long bypass trail (separated from the Nelson Logging Road) from new parking lot to existing OHV parking lot and learning/practice area. Barriers will be installed so that the entrance from the trail is separated from the learning/practice area and OHV users will have to get off the trail to get into the practice area (R).
13. Create a loading/unloading area between the new parking lot and the learning/practice area. This approximately 4,000 sq. ft. area will be for temporary parking only and include an earthen berm/ramp to aid loading/unloading without need for a portable ramp (R).
14. Add one or more constructed features (e.g. berm, obstacle) to OHV learning/practice area (R).
15. Construct two new short OHV trails (appx. 0.6 and 0.7 miles) that would create additional loop opportunities with the existing OHV trail system (see Loops 1 and 2) (R).
16. Extend existing South Fork Starrigavan Creek OHV trail approximately 1/3 mile. Trails would be open to OHV's 50 inches or less in width and non-motorized users (R).



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17. Construct new single-track trail (appx. 2.5 miles) that would provide a loop opportunity with the South Fork Starrigavan Creek OHV trail (see Loop 3) (R).
18. Reconstruct 300' of OHV trail around margin of landslide debris flow at head of valley to access a planned hiking trail to Eagle Dip Lake (local name) (R).
19. Construct new Starrigavan Ridge Loop Trail (New Hiking Trail 1, appx. 4.8 miles) (R).
20. Construct/improve Eagle Dip Lake Trail (New Hiking Trail 2, appx. 1.7 miles) in the same general vicinity as the existing user created trail but located for resource protection and maintenance considerations (R).
21. Construct an approximately 2.5-mile hiking trail (New Hiking Trail 3) from the South Fork Starrigavan Creek to Harbor Mountain/Gavan Hill trail. The proposed route would tie into the Harbor Mountain/Gavan Hill trail near the existing shelter (R).
22. Construct one to three gravel tent pads at each location in the vicinity of Eagle Dip Lake and the Starrigavan Ridge Lake adjacent to the proposed route (R).
23. Create new single-track mountain bike trail/s (narrow, 1-2' wide) within existing OHV trail loops (R).
24. If the opportunity to cooperate with the State becomes available, develop parking for vehicles (mainly those with OHV and snowmobile trailers) at the north end of Halibut Point Road (where Katlian Road would begin) (R).

Most work would be accomplished with heavy equipment, but new foot and single-track trails would be built primarily by hand crews with some small tracked equipment (e.g. excavator, hauler) use. Old growth trees would only be cut for new trail construction. Tree cutting would be minimal and only for trail clearing where avoidance isn't viable, and for construction of foot bridges to cross small stream channels or create steps and additional trail structures. Pit run and locally sourced gravel will be used. A helicopter would be used to sling materials to the new foot and single-track trails. Signs, including those that emphasize multiple use and users, safety, and Pittman-Robertson funding, would be installed at trailheads and select trail junctions. Barriers and signs would be installed at the start of foot trails to discourage motorized and bicycle use. The length and size of developments is a best estimate given current knowledge; final length and size of proposed developments may change dependent on route, location, and terrain challenges.

DESIGN CRITERIA

Design features and Best Management Practices (BMPs) that would be implemented to reduce or eliminate effects from project activities are listed in Appendix B.



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Legend

- Proposed New Hiking Trail
- User Created Hiking Trail
- Proposed New Single Track (motorcycle, e-bike)
- Proposed New OHV (50" or less in width)
- Trail Repair
- Stream Restoration Work
- Repair Existing Pond
- Construct New Pond
- Analysis Area for Proposed Single Track Bike Trail(s)
- Existing & Proposed Parking Areas
- Proposed Parking Areas at Start of Katlian Road
- Existing Trails
- Katlian Road (unfinished)
- Silka Cross Trail (unfinished)
- Non Forest Service Land Ownership

Map Labels:

- Proposed Parking Areas Near Start of Katlian Road
- New Hiking Trail (1) Starrigavan Ridge
- Enlarge Existing Parking Area
- Enlarge and Convert Parking Area to Learning/Practice Area
- New Motorized Loop (1)
- New Hiking Trail (2) Eagle Dip Lake
- New Motorized Loop (2)
- New Motorized Loop (3)
- Analysis Area For Proposed Mountain Bike Trail(s) Within Perimeter of Existing OHV Loops
- New Hiking Trail (3) South Fork Starrigavan

Scale: 0 0.25 0.5 1 Miles

**PROJECT SCREENING****REGULATORY CONSIDERATIONS**

Given the nature of the project, the interdisciplinary analysis team has reviewed the project specifications and found them to be compliant with the following regulatory considerations in addition to NEPA.

- ☒ **NFMA/Land Management Plan**
- ☒ **Clean Air Act (CAA)**
- ☒ **Endangered Species Act (ESA)**
- ☒ **Clean Water Act (CWA)**
- ☒ **Sensitive Species (FSM 2670)**
- ☒ **Pertinent Executive Orders**
- ☒ **National Historic Preservation Act (NHPA)**
- ☒ **Tribal Communication**

ISSUES CONSIDERED FOR ANALYSIS

The Sitka Ranger District, through consideration of both internal and public comments during the pre-scoping information gathering public meeting modified the original project. After reviewing comments to the scoping and the Notice of Opportunity to Comment period, no key issues were identified. Therefore, the Sitka Ranger District determined no alternatives to the Proposed Action are needed.

RESOURCE PARTICIPATION IN ENVIRONMENTAL ANALYSIS REVIEW

The Responsible Official has requested the following resource areas to review the Proposed Action to determine compliance with the regulatory considerations and inform the degree of effects.

Table 1: Documentation of Review Completion

Resource	Review Complete
Botany	12/4/2020 Rick Turner
Cultural/Heritage	12/3/2020 Raeanna Wood
Engineering	12/4/2020 Logan Wild/ Erin Clay
Fisheries	12/4/2020 Joe Serio
Hydro / Soils	12/9/2020 Martin Becker
Lands	12/8/2020 Rebecca Peterman
Minerals	12/4/2020 Martin Becker
Outfitters and Guides	11/9/2020 Corrine Ferguson
Recreation	12/4/2020 Mike Mullin
Scenic Resources	12/1/2020 Dani Snyder
Silviculture	5/15/2020 Thomas Witherspoon
Wildlife	12/10/2020 Chris Leeseberg



AGENCIES & PERSONS CONSULTED

Given the nature of the project, the Responsible Official consulted the following agencies, organizations, tribes and persons during development and analysis.

AGENCIES

STATE OF ALASKA

State of Alaska-Division of Mining, Lands and Water

Alaska Department of Fish and Game-Habitat Division

Department of Fish and Game-Division of Sport Fish

Alaska Department of Fish and Game – Division of Commercial Fisheries

FEDERAL

U.S. Fish and Wildlife Service

National Marine Fisheries Service-Protected Resource Division (ESA)

National Marine Fisheries Service-Habitat Conservation Division (EFH)

Army Corp. of Engineers

NATIVE AMERICAN TRIBES

Sitka Tribe of Alaska

NATIVE CORPORATIONS

Shee Atiká Incorporated

STATE/LOCAL GOVERNMENTS

City and Borough of Sitka

In March of 2020, the project was listed on the Tongass National Forest's quarterly Schedule of Proposed Actions. On January 23, 2020 Pre-Scoping letters were email through GovDelivery to 706 subscribers. A Pre-Scoping public meeting was held on February 5, 2020 at Harrigan Centennial Hall to solicit comments and ask help on developing the Proposed Action, with more than 18 members of the public attending. On March 9, 2020 Scoping letters detailing the Proposed Action were emailed through GovDelivery to 731 subscribers including local Tribes, Tribal Corporations, State and Federal agencies. A 30-day comment period legal notice was published in the Daily Sitka Sentinel, newspaper of record, on March 9, 2020.

As a result, three parties responded during the scoping process. All letters and comments received on the proposed project can be found in the project record.



ENVIRONMENTAL IMPACTS REVIEW

The following effects (or impacts) discussions focus on changes to the human environment from the Proposed Action that are reasonably foreseeable and have a reasonably close causal relationship to the Proposed Action, including those effects that occur at the same time and place as the Proposed Action and may include effects that are later in time or farther removed in distance from the Proposed Action. More detailed analysis for some resources can be found in the project record.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

BOTANY

AFFECTED ENVIRONMENT

THREATENED AND ENDANGERED PLANTS

No Threatened, Endangered, Proposed, Candidate (TEPC) species or habitat occur in the project area. Because the Proposed Action would not affect any known TEPC plant occurrence, TEPC plants will not be addressed further in this document.

SENSITIVE PLANTS

Though no surveys have been completed within the entire project area, three sensitive plant species are suspected to occur in the project area due to the presence of suitable habitat: Mountain lady's slipper (*Cypripedium montanum*); Alaska rein orchid (*Piperia unalaschensis*); Unalaska mistmaiden (*Romanzoffia unalaschensis*).

RARE PLANTS

No plant species that are considered rare on the Tongass National Forest (Krosse 2017) are known to occur in the project area. Because the Proposed Action would not affect any known rare plant occurrence, rare plants will not be addressed further in this document.

INVASIVE PLANTS

Infestations of twelve invasive plant species infesting less than 0.2 acres in the project area have been documented. All known infestations in the project area are located on existing road rights of ways. No infestations have been documented in undisturbed areas with intact natural vegetation. Because the known infestations were recorded in plots as part of a roadside systematic plot inventory, the actual infested area of these species along the road system is likely to be larger. Reed canarygrass has the largest total infestation in the project area (0.1 acres). No treatments to control or eradicate invasive plant infestations have been documented in the project area.

ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

SENSITIVE PLANTS

The effects of Proposed Actions on sensitive plants suspected to occur in the project area could include immediate damage or destruction from vegetation or ground disturbance, and changes in species abundance and/or distribution as a result of increased erosion, changes in light availability, and/or moisture changes that may be caused by proposed activities.

The precise locations and acreage within the project area that would be disturbed by proposed watershed restoration and recreation developments such as trail construction are currently uncertain. However, it is likely that at least some portions of the disturbance footprint would affect suitable habitat for species suspected to occur in the project area. Therefore, undocumented occurrences of these species could be affected by Proposed



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Actions. The expected intensity of effects is expected to be low because only small amounts of suitable habitat for these species are expected to be impacted, and implementation of design criteria to survey suitable habitat and implement Forest Plan standards and guidelines for protection of any sensitive plants that could be affected before implementing activities will help reduce the likelihood of negative effects.

The past, present, and reasonably foreseeable future actions on Baranof Island consist mainly of past timber harvest and road construction, and current and future watershed restoration and recreation development projects. Timber harvest in forested habitats has comprised the majority of vegetation and ground disturbance in the project area and in non-urban areas. However, large-scale timber harvest has not occurred for several decades and instead, focus has shifted to watershed restoration and recreation projects, which have a relatively smaller disturbance footprint. Therefore, the modification of potential sensitive plant habitat has greatly reduced over time. When combined with past, present and reasonably foreseeable actions, the cumulative intensity of effects of this project on sensitive plants or their habitat is expected to be low.

INVASIVE PLANTS

The Proposed Action provide an opportunity for invasive plant introduction or expansion, because they disturb soil and/or remove existing vegetation, providing opportunities for invasive plants to establish or spread. Additionally, movement of equipment and personnel can also provide opportunities for transport of invasive plant seeds or propagules into new areas. Trail construction material such as rock or gravel transported from infested borrow pits can introduce invasive plants into previously uninfested areas.

Infestation vectors such as recreational use of new trails and recreation facilities are not expected to substantially increase over the long term because habitat modification would be limited to small areas, with surrounding habitats remaining undisturbed. The overall intensity of effects on infestation risk from the proposed activities is expected to be low due to implementation of recommended design criteria.

Timber harvest has been the dominant source of vegetation clearing and ground disturbance in the project area. However, large-scale timber harvest has not occurred for several decades in the project area and instead, management focus has shifted to watershed restoration and recreation projects, which have a relatively small disturbance footprint. Therefore, the modification of vulnerable habitats has been greatly reduced over time. When combined with past, present and reasonably foreseeable actions, the cumulative intensity of effects of this project on infestation risk is expected to be low.

CULTURAL/HERITAGE

AFFECTED ENVIRONMENT

There are no known cultural or historical resources within the project area where project activities will occur.

ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

This proposed project was analyzed using the 2017 Programmatic Agreement (PA) regarding Heritage Program Management on National Forests in Alaska. A finding of “no historic properties affected” was reached using the criteria for Section 1. e. (Streamlined Section 106 Procedures) and Section II. a. (Previously Disturbed Grounds) of Appendix B (Authorized Undertakings).

Potential effects on any extant resources eligible for inclusion on the National Register (heritage resources) could result from ground disturbing activities related to new trail construction, including – but not limited to – vegetation clearance, trail construction and surfacing, bridge construction, and culvert installation. However, based on archaeological analysis, these are unlikely to adversely affect any extant heritage resources. Periodic monitoring of the undertaking will be used to confirm this aspect and any effects will be mitigated as required.

Archaeological analysis of potential effects has indicated that increased recreational use of the undertaking area could also impact extant heritage resources. However, this is unlikely due to the area’s history of recreational use and subsequent lack of such discoveries. Periodic monitoring of the undertaking will also be used to confirm this aspect and any effects will be mitigated as required.



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The analysis conducted on this proposal indicates that the degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for the National Register – or may cause loss or destruction of significant scientific, cultural, or historical resources – is low in intensity and will not be significant.

ENGINEERING

AFFECTED ENVIRONMENT

Within the project area, the Starrigavan Valley Trail system contains approximately 4.2 miles of trail. Trail designated uses include motorized and non-motorized traffic. After the landslide in 2014, three fish stream culverts, one mainstem bridge and approximately 2,000 feet of trail were damage or destroyed. This damage effectively shut down 0.75 miles of the trail system.

ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

All stream crossing structures will be designed to accommodate safe user crossings, proper design flows based on stream class and where applicable, aquatic organism passage. Trails and parking lots will be designed to shed water properly to reduce the risk of erosion and sedimentation and provide user safety. Reconstruction of trail infrastructure will improve and restore travel management and recreational use objectives and designations therefore, there would be no negative effects as a result of this project.

FISHERIES

AFFECTED ENVIRONMENT

The project area is located within the Starrigavan watershed and includes riparian areas with Class I (anadromous salmon) and Class II (resident cutthroat, Dolly Varden) streams logged without no-cut buffers prior to the 1990 Tongass Timber Reform Act (TTRA).

Starrigavan Valley was clear cut harvested between 1969-1974, where 478 acres of old growth forest were logged on Forest Service land and 249 acres on State of Alaska lands. Since harvest, various levels of stream restoration, pond construction, riparian thinning and habitat monitoring have occurred in order to restore proper hydrologic functioning and create high quality fish habitat.

In 2014, a 40-acre landslide and associated runout zone occurred approximately 2 miles from saltwater, which damaged recreational infrastructure, roads and trails. The landslide also heavily altered approximately 1050 feet of Class I and 850 feet for Class II mainstem channel. The travel corridor of the slide entered the valley bottom, denuded riparian forest stands, destroyed three off-channel coho rearing ponds and then damaged and hung up on a mainstem bridge, plugging the entire river. This massive plug of wood then aggraded sediment material upstream and diverted the river to both sides of the original channel location. Water diverted from the channel has washed out two large portions of the main trail system (270 feet and 570 feet) including three fish stream tributary culverts and an additional coho rearing pond. These flooded trail sections are now live stream channels, where adult salmon have been observed attempting to spawn in the fall. All this diverted water then enters Class I tributaries and rejoins the original mainstem approximately 700 feet downstream from the plugged mainstem bridge, leaving that abandoned channel predominantly dry. Due to the instability of channel and lack of bank vegetation within the slide zone, as well as, newly created channels along roads or forested floodplain areas excessive bank erosion and sedimentation to aquatic resources is prevalent during rainfall events. Peak sediment delivery is often in the fall during salmon spawning period and when eggs are in stream gravels. Conversely, during dry periods, flows dispersed through multiple channels often go dry, fragmenting stream habitat which can and does trap and kill live fish and/or eggs laid in stream gravels.

User made hiking trails to Starrigavan ridge and Eagle Dip lake (local name) are unimproved paths that are overly steep and muddy. Lack of design and infrastructure on these trails has led to erosion and some minor sedimentation to aquatic resources.



ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

There are no threatened, endangered or sensitive (TES) aquatic species in the project area so therefore there will be No Effects to TES species.

CULVERTS AND HARDENED STREAM CROSSINGS ALONG TRAIL AND PARKING LOTS

Adverse effects to aquatic habitat would be short-term and localized to a short distance from the work area and would only occur during construction. Heavy equipment can disturb soil and vegetation leading to surface erosion in order to access the floodplain and channel areas for construction activities, however adverse effects will be low and mitigated by design criteria.

Increased sedimentation within streams can have a negative effect on aquatic organisms if the duration of a sediment plume is prolonged or during construction activities if sites are not dewatered. Elevated sediment plumes into streams by the Proposed Action will be short-term in duration and localized to a short distance from project because culvert replacement hardened crossings installation will be constructed in dry channels. Small, short duration sediment plumes are only anticipated when initially setting up the dewatering process and when returning flow after construction is complete. Through design criteria (see Appendix B), physical and water quality impacts would be negligible and no exceedance of State or Federal water quality standards will be exceeded.

The improvements from the installation of new culverts and conversion of culverts to hardened stream crossings would lead to long-term stream improvements from increased stream function and habitat connectivity, and the decrease in negative effects from stream constriction and reduction of natural sediment transport at these locations. The beneficial effects from the Proposed Action include increased salmon populations through habitat restoration, restored habitat connectivity and improved hydrologic connectivity and stream function and stability.

Though some native soil areas will be lost to parking lot expansion, these areas are small in size and are anticipated to have no impacts to overall soil or watershed health with the watershed as these areas have been previously logged using ground based equipment or are covered with overburden from adjacent road and parking lot construction.

STREAM RESTORATION

The Proposed Action would include both short term negative and long-term beneficial effects. During implementation of the Proposed Action, resident and anadromous fish will be affected in the form of dispersal and/or take (i.e. a few individuals may be killed). However, because of the availability of suitable habitat in the analysis area, the short duration of the Proposed Action, and implementation of design criteria (i.e. removal of fish prior to work - see Appendix B), effects will be minor to negligible for individuals and will have no negative effects at the population level. Instream activities will be restricted to fish timing windows to further reduce the risk or loss of fish in the project area.

As with culvert and hardened crossing structures described above, stream reconstruction activities will have a short-term impact to water quality during initial dewatering setup and reestablishment of flows post construction. From similar projects completed on the District and Forest, this impact to reduce water quality through increased sedimentation will only travel a few hundred feet downstream and return to pre-project background levels within a few hours. Oversight of contract required Sediment Control and Dewatering Plans that include design criteria will reduce or eliminate negative impacts during project work.

There will be no impact to native soil areas as all stream restoration activities will take place on landslide deposits or from existing trail surfaces and design criteria will be implemented.



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BENEFICIAL EFFECTS WOULD INCLUDE THE FOLLOWING:

- Increased stream channel and floodplain connectivity and complexity thereby improving floodplain function and riparian stands
- Increased rearing habitat from pond improvement and construction. Off-channel rearing habitat is currently lacking in Starrigavan Valley due to destruction of ponds.
- The increase in large pools from instream restoration activities would directly and indirectly benefit all species and life stages of fish by providing low velocity resting habitat that provides hiding cover from predators through depth, large wood and roughened water surface.
- The increase of pool habitat would indirectly increase foraging efficiency for juvenile and resident life stages of fish.
- Large wood structures and increased bank stability would provide a more defined stream channel with greater lateral migration resistance, which would decrease over widened streams.
- Channel and trail reconstruction would reduce erosion from stream banks, floodplains and trails surfaces from current stream diversions. Work would reduce or eliminate these chronic erosion sources which are currently resulting in sedimentation to aquatic habitats and reduced water quality.

TRAIL CONSTRUCTION AND INFRASTRUCTURE

There will be no adverse long-term effects to aquatic or soil resources due to new OHV and mountain bike trail construction within project area. Beneficial effects will result from proper location, design grades and construction of drainage and stream crossing features on the proposed foot trails versus the highly eroded user made trails that currently exist. Some minor adverse short-term effects during construction of trails by hand or by machinery are anticipated. These impacts will be minor erosion during grubbing and clearing trail corridors and installing trail surfacing and trail infrastructures. These impacts will be of short duration and intensity and be mitigated by project design criteria. Though some native soil areas will be lost to new trail construction, these areas are small in size and are anticipated to have no impacts to overall soil or watershed health with the watershed as these areas have been previous logged using ground based equipment and be offset by rehabilitation and decommissioning of user made trails.

HYDROLOGY / SOILS

AFFECTED ENVIRONMENT

Due to the interconnectedness of Hydrology and Soils resources to Fisheries resources, the Affected Environment sections have been combined. See Fisheries section above.

ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

Due to the interconnectedness of Hydrology and Soils resources to Fisheries resources, the Environmental Effects sections have been combined. See Fisheries section above.

LANDS

AFFECTED ENVIRONMENT

The project area consists of both USFS and State of Alaska lands. Of the total project area, the USFS controls approximately 3,644 acres predominantly in the upper watershed, while the State of Alaska controls approximately 453 acres predominantly in the lower watershed. Through written permissions or agreements, the State of Alaska has authorized previous management activities (thinning, instream habitat work and recreational infrastructure) by the Forest Service on State lands.



ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

There would be no direct or indirect effects to lands and special uses in the area because there are no special use permits or mines in the area. Appropriate authorizations will be obtained prior to implementation.

MINERALS

AFFECTED ENVIRONMENT

There are no Mineral activities within the project area.

ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

The project will have no effects to Mineral activities as there are no mineral activities authorized in or adjacent to the project area. Any future mining activities could see minor benefits with improved access.

OUTFITTERS AND GUIDES

AFFECTED ENVIRONMENT

There are currently five outfitters and guides (O/G) who use the project area for guided hiking, photography, nature/wildlife viewing, freshwater fishing, and camping. The use is authorized by recreation special use permit and predominantly occurs in the Starrigavan Recreation Area on the Mosquito Cove Trail, Starrigavan Estuary Life Loop Trail, Starrigavan Creek (from the foot bridge to saltwater), and the campground. Most guided activities occur during the visitor season, May 1 thru September 30, and are located downstream of the Proposed Action. One O/G has used the Starrigavan valley for camping, with most recent use occurring in 2013.

ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

There are potential short-term minor to negligible adverse effects to outfitters and guides during project implementation. Access to the Starrigavan Recreation Area, where most O/G use occurs, will not be directly affected by the proposed action. O/Gs and their clients may be affected by noise, or if access to the Starrigavan valley is restricted during implementation. Timely communication by the Sitka Ranger District would reduce these impacts to negligible by giving O/Gs time to select alternative use locations during project implementation.

Following implementation, the Proposed Action provides a real benefit to O/Gs by increasing recreation opportunities in the area. Changes to available special use permit allocations would be determined by future NEPA analysis.

RECREATION

AFFECTED ENVIRONMENT

The Starrigavan watershed where the Proposed Action is to occur contains a mix of authorized Off Highway Vehicle (OHV) trails and user-made hiking trails. Authorized OHV trails are on old logging roads from the 1970s and trails designed and constructed by the USFS in the mid-1990s. This area is the only year-round OHV area on the Sitka road system.

Two user made trails that access sub-alpine and alpine locations exist within the watershed. The Starrigavan Ridge Trail starts at the small rock pit along the Nelson Logging Road and goes straight up the hillside to the treeline. The trail is steep, muddy and has numerous locations of excessive erosion from use and water running down the trail. The second trail starts at the end of the existing OHV trail at the head of the mainstem valley and accesses Eagle Dip Lake. This lesser used trail traverses both young growth and old growth stands before reaching the subalpine. Within the young growth, the trail is uneven and brushy, while the old growth section is ill-defined and has segments that are fairly steep where users have created multiple routes up and down. There is no bridge for crossing the upper Starrigavan stream channel which can be challenging during elevated stream flows.



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Additionally, the current vehicle parking area at the trailhead, while sizeable, is not large enough to serve as a training area for new and young riders and can pose a safety risk with mixed on-road and off-road vehicle use.

In 2014, a major landslide took out portions of the trail system and blocked motorized access to other portions. Blocked and eroded trail features can still be traversed by foot, however fallen trees, large ruts and varying water depths from rerouted river flows make travel and access difficult and unsafe for some users.

ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

ADDITIONAL OPPORTUNITIES

Under the Proposed Action, new trails will provide additional opportunity for both motorized and non-motorized recreationists and may reduce user pressure on other non-motorized trails in Sitka (See Appendix A, Tables 1 and 2). Using mileage as the metric, most of the proposed new trails would be available to non-motorized users, though some motorized users change their mode of travel during an outing and will take advantage of new non-motorized trails. This type of use occurs frequently during deer hunting season when motorized users start their outing on an OHV, drive to a spot to park their machine and then continue their hunt on foot.

Relocation of the trailhead and conversion of the existing trailhead into a learning and practice area will provide a dedicated space for OHV users. This arrangement will provide a space free from highway-legal vehicles and improve safety by eliminating mixed motorized use.

A new parking area near the end of Halibut Point Road is expected to meet a need for parking that will become more acute when the Katlian Road is completed. The parking area would accommodate vehicles pulling snowmobile and OHV trailers and improve safety by moving parked vehicles from the shoulder of the road.

USER CONFLICT

Access to the proposed hiking and mountain bike trails, apart from Starrigavan Ridge, will require sharing the existing multi-use trail system to use the new trails. There is already motorized/non-motorized mixed use of the existing trail system, but the expected increase in mixed use traffic may increase conflict between user groups. Conflicts may arise between motorized and non-motorized users or a subset of one particular user type, for example, hikers and mountain bikers - both non-motorized users.

Education with signage would help minimize trail conflicts among different user groups. All trail users will know what type of traffic to expect on any given trail. New signs at the trailhead and trail junctions will indicate the acceptable uses of all trails. Additional trailhead signage describing appropriate trail etiquette and possibly Public Service Announcements (PSA's) will promote responsible trail etiquette.

In conjunction with education, physical strategies would minimize user conflict. Brushing of all multi-use trails would maintain good sight lines and help minimize surprise encounters. Physical barriers such as large boulders would restrict OHV access at all trail junctions where the designed use changes from motorized to non-motorized. Barriers will prevent mixed use by highway-legal vehicles and OHV's and separate trail traffic from traffic within the learning/practice area.

Designating proposed new mountain bike trails as one-way only will be considered as trails are developed to mitigate safety concerns and the potential for user conflicts.

Currently, the Forest Service considers technologies that merge bicycles and motors (gas or electric powered) as motor vehicles. E-bikes, therefore, are currently considered a motorized vehicle and not allowed on non-motorized trails. The Forest Service is currently proposing to revise its directives to update and clarify guidance on management of e-bike use on National Forest System lands. The proposed revisions include new definitions for an e-bike and a Class 1, Class 2, and Class 3 e-bike, as well as guidance and criteria for designating e-bike use on NFS trails. The proposed revisions would align with Department of Interior's proposed e-bike rules in requiring site specific decision-making and environmental analysis at the local level to allow e-bike use.

Until a new policy is in place, the Forest Service cannot designate a trail open to e-bike use, but not traditional motorcycle since both are considered motorized. For this reason, new mountain bike trails in the project area will



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initially be closed to e-bikes. The new policy would permit a subsequent decision by the authorized officer to allow the use of one or more classes of e-bikes on the mountain bike trails.

DISPLACEMENT

Displacement of existing users, both motorized and non-motorized is likely to occur to some degree with an expected increase in visitation to the Starrigavan Valley trail system. Unimproved, user made trails to Starrigavan Ridge and Eagle Dip Lake exist and have become more popular through time as people discover them by word of mouth and open-source mapping programs or other digital means. The proposed new system trails, especially Starrigavan Ridge and Eagle Dip Lake, may displace recreationists who like to hike, hunt, camp, etc. in more primitive, harder to reach areas with the expectation of encountering fewer people. Though the Starrigavan Valley has and will continue to have high value semi-primitive recreational opportunities after project implementation, other similar opportunities exist that can be accessed from the Sitka road system. In addition, the completion of the Katlian Road currently under construction will provide an additional way to access tens of thousands of acres for primitive recreational opportunities along with the possibility of future motorized trail opportunities. The Katlian River watershed has a network of unimproved gravel roads initially built for logging. All the stored roads on NFS lands (except for one short route converted to a trail) are currently closed to all motor vehicle use. Future environmental review could lead to additional OHV opportunities in the Katlian watershed.

NOISE AND CLOSURES

The effects will differ in duration and intensity between projects. Implementation of all projects is expected to occur discontinuously over ten or more years. Helicopter and/or heavy equipment noise will have an adverse, but temporary effect on the solitude of off-trail recreationists and those using area trails, the caretaker of the Tony Hrebar shooting range adjacent to the existing trailhead, and visitors to Starrigavan Recreation Area.

Helicopter and other heavy equipment related impacts will come from noise and the need to maintain safe zones around the equipment. Noise from helicopters is likely to be intermittent within each day operating since the helicopter will be moving between the pick-up sites and the drop-off sites and likely won't be audible for the whole range during round trips. Equipment operations will last throughout the workday and continue for several days to several months depending on the individual project. The magnitude of the effect could be locally impactful though visitors to the area can already expect to hear noise from the gun range and motorized recreationists during excursions to the project area.

The need to maintain safe zones around equipment will result in temporary closures of parking areas and trails or sections of trails under the flight of helicopters and where equipment is working. Closures could last several months depending on the scope and complexity of the individual project. Though temporarily impactful, closures will reduce the risk of injury to Forest visitors during construction. To minimize effects on Forest Visitors, closure and delay notices will be posted in advance at trailheads and PSA's will inform visitors to plan accordingly.

SCENIC RESOURCES

AFFECTED ENVIRONMENT

This project is located on both non-USFS and USFS lands. The Scenic Integrity Objective (SIO) for Semi-Remote Recreation Land Use Designation (LUD) is Moderate for all distance zones. For non-USFS lands, there is no assigned SIO. Moderate SIO is when activities and developments are visually "subordinate to the landscape character of the area" (Forest Plan 4-56). This LUD also includes the ability to consider, on a case-by-case basis, "exceptions for small areas of non-conforming developments, such as recreational developments, transportation developments, log transfer facilities, and mining development" (Forest Plan 4-55).

ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

The impacts of the Proposed Action, for all activities located below treeline, are negligible. While the activities performed will visually alter the landscape, for the most part the changes will be positive, and will return the



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scenery of the area to its previous state before the landslide. Improvements such as the larger parking lot or new trails will change the views but not impact the scenic integrity.

The sections of the three new hiking trails, and any tent pads that might be constructed, that are in areas above treeline have the potential to have noticeable impacts to the scenery from a distance, mainly from other areas above treeline. These impacts are expected to be minimal with appropriate design criteria to ensure they blend with the existing scenery and do not contrast significantly with the colors and textures of the area. These areas will still meet Moderate SIO after trail construction.

TIMBER

AFFECTED ENVIRONMENT

From 1969-1974, 726 acres of forest land was clearcut within the project area with approximately 1,488 acres remaining in old growth conditions. Young growth regenerated after harvest is comprised predominantly of Sitka spruce on upland areas and red alder along stream banks and floodplains. Thinning prescriptions over the past few decades has improved tree growth for wildlife, stream function and future timber resources.

ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

There will be no adverse effects to timber resources as stream restoration work will be using down wood from the landslide. Negligible effects will result from clearing of trailside alders to aid in safe mobilization of equipment of to the restoration sites. Negligible effects will also result from trail construction as live trees will be avoided as much as possible and only a felled where avoidance isn't viable and for creating trail features (foot bridges and steps). There are no anticipated adverse effects for this project.

WILDLIFE

AFFECTED ENVIRONMENT

The analysis area for this project consists of the Starrigavan watershed and a ~¼ mile buffer around the ridge line section of the proposed Starrigavan Ridge trail, which is just outside but adjacent to the watershed. Total area includes 4,388 acres. A total of 726 acres of the analysis area has been harvested. The remaining unharvested area is composed of 458 acres of highly productive old growth (HPOG), 942 acres medium productive old growth (MPOG), 88 acres low productive old growth (LPOG) and the remaining 2,174 acres being alpine and muskeg habitat.

ENVIRONMENTAL EFFECTS OF THE PROPOSED ACTION

THREATENED, ENDANGERED AND SENSITIVE (TES) SPECIES

There are no threatened or endangered wildlife species found in the project analysis area and therefore no effect. Although no goshawks, a sensitive species, have been documented in the analysis area there is suitable habitat for nesting and foraging. There are no other sensitive species found in the analysis area. The Proposed Action may affect individual goshawks but would not cause a trend to federal listing or a loss of viability. The implementation of this project will have no to negligible effect on goshawks. To mitigate any potential effect from trail construction goshawk nest surveys will be conducted along proposed trail routes. If any nests are detected appropriate design criteria will be taken (i.e. schedule work activities outside nesting and fledging windows and/or change trail route to avoid the area). Additionally, in the event a goshawk and/or nest is sighted within 600 feet of the Proposed Action the district biologist will be contacted immediately to implement appropriate design criteria.

BALD EAGLES (NON-TES SPECIES)

No effects to bald eagles would occur with implementation of the Proposed Action. This project is consistent with the Forest Plan and Interagency Agreement and should not detrimentally affect bald eagle viability. Over the years



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numerous sites visits have led to no nest discoveries and the general location of the Proposed Action is in young growth stands and/or at high elevation equating to low quality nesting habitat. Nest surveys will be conducted along proposed trail route prior to trail construction. In the unlikely event a bald eagle nest is identified within 600 feet of any Proposed Action the district biologist will implement appropriate design features.

OTHER NON-TES SPECIES INCLUDING MIGRATORY BIRDS

During implementation of the project some individuals will experience short-term displacement and that has the potential to lead to some short-term avoidance behavior. Small mammals and birds would be susceptible to small level of take (i.e. a few individuals might be killed or dispersed) from felling trees during work activities. However, due to the availability of suitable habitat in the analysis area, short duration of work activities, and relatively small footprint of the Proposed Action the displacement and avoidance behavior that would occur would have a minor effect on individuals and would have a negligible effect on populations. The felling of trees would have a minor effect in the form of take of a few individuals but because populations are considered healthy and robust in the analysis area and very few trees are expected to be felled it would have no to negligible effect on populations. Brown bear encounters are always possible when on the Sitka Ranger District. With improved hiking opportunities the likelihood of a negative bear-human will increase. However, this is an inherent risk for anyone who utilizes the National Forest on the Sitka Ranger District and with proper personal safety measures (i.e. carrying bear spray) this risk is negligible.

SUBSISTENCE

Consistent with ANILCA Title VIII section 810, this project was evaluated to determine potential effects on subsistence opportunities and resources.

The Proposed Action, particularly new trail and parking lot construction would improve hunter access, increasing the possibility of hunter competition (i.e. hunters encountering other hunters) and higher harvest rates. However, the area is already on the road system and is easily accessible to hunters. There are several “user-made” trails going up and down the valley providing access. Therefore, the increase in hunter access is not expected to change much from current levels. The area contains a healthy population of deer and continued harvest in the area will have negligible to minor effects on deer populations.

During project implementation it is expected that some individual deer will be dispersal and/or exhibit avoidance behaviors. However, these effects are expected to be negligible and short-term in nature and no negative long-term effects are expected.



NATIONAL FOREST MANAGEMENT ACT (NFMA) – LAND MANAGEMENT PLAN CONSISTENCY

The pertinent specialists have reviewed the project and made the following determinations regarding consistency with applicable Land Management Plan direction, standards and guidelines.

Botany: Consistent

Recreation: Consistent

Cultural/Heritage: Consistent

Scenic Resources: Consistent

Engineering: Consistent

Soils: Consistent

Fisheries: Consistent

Silviculture: Consistent

Hydro: Consistent

Special Management Areas: N/A

Lands/Special Uses: Consistent

Wildlife: Consistent

Minerals: Consistent

ENDANGERED SPECIES ACT

THREATENED, ENDANGERED, PROPOSED AND CANDIDATE SPECIES &/OR CRITICAL HABITAT

The pertinent specialists reviewed the project and made the following determinations for threatened, endangered and/or proposed species:

Botany: No Threatened, Endangered, Proposed, Candidate (TEPC) species or habitat occur in the project area.

Fisheries: No Threatened, Endangered, Proposed, Candidate (TEPC) species or habitat occur in the project area.

Wildlife: No Threatened, Endangered, Proposed, Candidate (TEPC) species or habitat occur in the project area.

SENSITIVE SPECIES (FSM 2670)

The pertinent specialists reviewed the project and made the following determinations for sensitive species:

Botany: Three sensitive plant species are suspected to occur in the project area due to the presence of suitable habitat.

Fisheries: There are no sensitive species found within the project area.

Wildlife: Although no goshawks, a sensitive species, have been documented in the analysis area, there is suitable habitat for nesting and foraging. There are no other sensitive species found in the analysis area.



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Table 2: Sensitive Species Impact Determinations

Species	Determination*	Rationale (or refer to other project documentation)
Mountain lady's slipper	MIIH	The expected intensity of effects is expected to be low because only small amounts of suitable habitat for this species is expected to be impacted, and implementation of design criteria to survey suitable habitat and implement Forest Plan standards and guidelines for protection of any sensitive plants that could be affected before implementing activities will help reduce the likelihood of direct or indirect effects.
Alaska rein orchid	MIIH	The expected intensity of effects is expected to be low because only small amounts of suitable habitat for this species is expected to be impacted, and implementation of design criteria to survey suitable habitat and implement Forest Plan standards and guidelines for protection of any sensitive plants that could be affected before implementing activities will help reduce the likelihood of direct or indirect effects.
Unalaska mistmaiden	MIIH	The expected intensity of effects is expected to be low because only small amounts of suitable habitat for this species is expected to be impacted, and implementation of design criteria to survey suitable habitat and implement Forest Plan standards and guidelines for protection of any sensitive plants that could be affected before implementing activities will help reduce the likelihood of direct or indirect effects.
Northern goshawk	MIIH	The proposed action may affect individual goshawks but would not cause a trend to federal listing or a loss of viability. The implementation of this project will have no to negligible effect on goshawks. To mitigate any potential effect from trail construction goshawk nest surveys will be conducted along proposed trail routes. If any nest or goshawks are detected within 600 feet of the Proposed Action the district biologist will be contacted immediately to implement design criteria.

NI – No Impact; **MIIH**- May Impact Individuals or Habitat, but Will Not Likely Contribute To A Trend Towards Federal Listing Or Loss Of Viability To The Population Or Species; **WIFV** - Will Impact Individuals or Habitat with A Consequence That the Action May Contribute To A Trend Towards Federal Listing Or Cause A Loss Of Viability To The Population Or Species



NATIONAL HISTORIC PRESERVATION ACT (NHPA) – SECTION 106 REVIEW

The pertinent specialist has reviewed the project and made the following determination regarding Section 106 compliance:

Other - See explanation of other determination in comments section.

COMMENTS

This proposed project was analyzed using the 2017 Programmatic Agreement (PA) regarding Heritage Program Management on National Forests in Alaska. A finding of “no historic properties affected” was reached using the criteria for Section 1. e. (Streamlined Section 106 Procedures) and Section II. a. (Previously Disturbed Grounds) of Appendix B (Authorized Undertakings).

TRIBAL CONSULTATION

Based on the nature of the project, the line officer/responsible official made the following determination regarding Tribal Consultation:

Consultation with American Indian Tribes is not needed.

COMMENTS

The Sitka Ranger District informed the Sitka Tribe of Alaska (STA) of the Proposed Action of this project during their January 2020 monthly Tribal Council meeting according to established protocols between the District and the STA. The STA and Shee Atiká Incorporated, the local native corporation, were also invited to the public meeting on February 9, 2020 and each was sent formal scoping letters to solicit comments on the project on March 9, 2020. No comments on the project have been received.

SPECIAL MANAGEMENT AREAS (E.G. WILDERNESS, ROADLESS ETC.)

The pertinent specialist has reviewed the proposal and made the following determinations based on special management area presence/proximity or lack of:

There are no special management areas within the project area, therefore there will be no effect.

CLEAN AIR ACT (CAA)

The pertinent specialist has reviewed the project and made the following determinations regarding the CAA:

Emissions anticipated from the implementation of the Proposed Action will be minor and of short duration and would not exceed State of Alaska ambient air quality standards (18 AAC 50). Therefore, it was determined that no significant impact to air quality is expected to occur from this decision.

CLEAN WATER ACT (CWA)

The pertinent specialist has reviewed the project and made the following determination:

Water quality and beneficial uses will be maintained within the Starrigavan watershed. Design Criteria will reduce or eliminate impacts to water resources to achieve Alaska Water Quality Standards. It was determined that this project fully complies with the Clean Water Act and have therefore determined no significant impact to water quality is expected to occur from this decision.



MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT

The pertinent specialist has reviewed the project and made the following determination:

Essential Fish Habitat (EFH) consultation was initiated on January 22, 2021. The Forest Service believes there will be short-term localized adverse effects such as sediment pulses and increased turbidity during instream construction of structures, but there will be no long-term adverse effects to EFH. There was a review of the potential effects of the Proposed Action on EFH and it was determined this project will ultimately improve EFH by creating and maintaining complex fish habitat.

BALD AND GOLDEN EAGLE PROTECTION ACT (1940, AS AMENDED)

The pertinent specialist has reviewed the project and made the following determination:

Management activities within bald eagle habitat will be in accordance to 50 CFR 22.26, National Bald Eagle Management Guidelines (2007). Once Proposed Action sites are identified eagle nest surveys will be conducted prior to implementation. Design criteria for any potential take will be incorporated when and where needed. Therefore, it was determined that no significant effects will occur to bald or golden eagles in the project area.

ANILCA SECTION 810 AND SECTION 811, SUBSISTENCE EVALUATION AND FINDING

The pertinent specialist has reviewed the project and made the following determination:

In compliance with Section 810 and 811 of the Alaska National Interest Lands Conservation Act of 1980 (ANILCA), a subsistence evaluation was conducted for the Proposed Action for this project. The evaluation concluded the project will not have a significant possibility of a significant restriction to subsistence uses.

PERTINENT EXECUTIVE ORDERS

The line officer and/or applicable specialist(s) have determined the project is in compliance with the following Executive Orders (EO), which were deemed pertinent based on the nature of the project.

- EO 11988, Floodplain Management
- EO 11990, Protection of Wetlands
- EO 12898, Environmental Justice
- EO 13007, Indian Sacred Sites
- EO 13112, Invasive Species
- EO 13175, Consultation & Coordination w/ Indian Tribal Governments
- EO 13186, Migratory Birds
- EO 13443, Facilitation of Hunting Heritage & Wildlife Conservation



NEPA: FINDING OF NO SIGNIFICANT IMPACT (FONSI)

The FONSI documents the reasons why an action, not otherwise excluded from documentation in an Environmental Assessment (EA) or Environmental Impact Statement (EIS) in accordance with 40 CFR §1508.4, will not have a significant effect on the human environment and for which an EIS therefore will not be prepared. When determining the potential significance of a proposed action, both context and intensity must be considered. The FONSI discussion here takes into consideration all information included in the Environmental Assessment, as well as documentation included in the project record. Pertinent specialists have reviewed the proposal and, based on their input, the responsible official made the following determinations with regards to the degree of potential effects for the context and intensity factors considered for a Finding of No Significant Impact.

CONTEXT

For the Proposed Action, the environmental effects are confined to the project area, and more overly, to the localized area in which project activities are occurring. I realize that while project activities are underway, especially stream reconstruction and dewatering, there will be impacts. Project design criteria and Best Management Practices will limit effects locally to the site-specific areas in which project area activities are occurring and be of short duration. The impacts brought forward in the analysis are well known, as many similar projects such as these have occurred on the Sitka Ranger District and Tongass National Forest in the past. Known and potential environmental effects would not be measurable at a regional or larger scale. The Proposed Action would be consistent with the Land Use Designation and Forest Plan standards and guidelines for the area, as well as, comply with other State and Federal permitting requirements.

INTENSITY

(1) Impacts that may be both beneficial and adverse.

The interdisciplinary team found overall beneficial effects of the project with a few minor localized negative effects and did not identify any significant adverse effects. I have evaluated the effects of the Proposed Action and determined that the impacts are not significant and would be within the standards set forth by the forest plan and consistent with applicable environmental laws. The finding of no significant environmental effects is not biased by the beneficial effects of this action.

(2) The degree to which the proposed action affects public health or safety.

The project was designed to eliminate current hazards and improve public safety through the construction of new infrastructure and improvements. Project operations could have short-term adverse effects on recreational users during active construction activities through traffic delays or temporary detours or reroutes. I have determined the Proposed Action, along with associated design criteria to mitigate impacts, will have a beneficial effect on public health and safety.

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

There are no unique geographical areas within the project area and therefore, no unique areas will be adversely impacted by the proposed action. Some wetlands and alpine sites do occur in the project area. The application of design criteria and Best Management Practices during construction will produce no adverse effects. Additionally, although no known cultural resource has been identified, cultural design criteria (CUL 1-2) will protect any sites in the event they are discovered.

(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The Proposed Action is not anticipated to be highly controversial in regard to the human environment. I have reviewed the project, design measures and analysis along with a review of public and internal comments. No



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significant concerns from this review were brought forward and the Proposed Action is consistent with the Forest Plan and current science and construction methods.

(5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

The Proposed Action and its design criteria are similar in scope and scale to other projects that have been successfully completed on the Sitka Ranger District and elsewhere on the Tongass National Forest. There is no evidence that the project would involve any highly uncertain or unknown risk.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The Proposed Action is consistent with the Forest Plan and will not set or establish any precedent for future actions with significant effects or represent a decision in principle about a future consideration.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

It was determined that the Proposed Action will have individually insignificant impacts and cumulatively insignificant impacts as they relate to past, present, and reasonably foreseeable actions. All harvested stands in project area have regrown. The limited timber harvest from this project contributes minimally to cumulative effects; furthermore, no significant cumulative effects were identified for any resource in the EA. Stream and recreational improvements should have long-term beneficial effects to project.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

It was determined that a finding of No Historic Properties Affected is appropriate for this project. The project meets the provisions stipulated in the Programmatic Agreement between the Forest Service, Alaska Region, the Advisory Council on Historic Preservation, and the State Historic Preservation Officer. Therefore, it was determined that no significant impacts will occur that adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause loss or destruction of significant scientific, cultural, or historical resources.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

It was determined that no significant impacts will occur that adversely affect an endangered or threatened species or its critical habitat. A Biological Evaluation (BE) for fish and wildlife was completed for this project and it was determined the action will not adversely affect any endangered or threatened species or critical habitat in the project area, and no project work is proposed for the marine environment. A Biological Evaluation (BE) Botany found no plants federally listed or proposed by the U.S. Fish and Wildlife Service are known or expected to occur in the Alaska Region; therefore, it was determined that no significant impacts will occur that adversely affect an endangered or threatened species or its habitat.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The following findings show the action does not violate federal, state, or local law requirements imposed for the protection of the environment and has been reviewed by federal and state agencies. The action is consistent with the Forest Plan.



DECISION NOTICE

FINAL DECISION NOTICE & FONSI

Starrigavan Watershed and Recreation Enhancement Project

U.S. Forest Service

Sitka Ranger District, Tongass National Forest

Sitka, Alaska

The Decision Notice and Finding of No Significant Impact (FONSI) incorporate all previous information in the Environmental Assessment, as well as information included in the project record.

FINDING OF NO SIGNIFICANT IMPACT (FONSI) & DECISION

I have reviewed the environmental impacts and factors considered for degree of effects and determined that no significant impacts will occur as a result of the proposed activities. My determination takes into consideration all design criteria included as part of the Proposed Action, as well as any modifications identified during environmental analysis and review of regulatory compliance. I have weighed the long-term benefits and short-term negative impacts of the proposed action on all resources. There are great benefits to watershed and fisheries resources. This project will fix existing recreation infrastructure damaged in 2014 and construct new infrastructure that will be enjoyed by the public in Sitka for many years.

I have decided to authorize the activities described in the [Proposed Action section](#) (to include design criteria in Appendix B), as well as any modifications identified during environmental analysis and review of regulatory compliance.

SUMMARY OF PUBLIC INVOLVEMENT

In March of 2020 the project was listed on the Tongass National Forest's quarterly Schedule of Proposed Actions. On January 23, 2020 Pre-Scoping letters were email through GovDelivery to 706 subscribers. A Pre-Scoping public meeting was held on February 5, 2020 at Harrigan Centennial Hall to solicit comments and ask help on developing the Proposed Action, with more than 18 members of the public attending. We modified the final proposed action including not connecting the Starrigavan Ridge Trail to the Eagle Dip Lake trail to offer a more primitive experience and subsistence opportunities in that area; we changed from constructing small shelters to hardened tent sites in both of these areas as well. We also created a new foot trail going from the South Fork Starrigavan Creek connecting to the Harbor Mountain/Gavan Hill Trail at the shelter as well as added a motorized trail connecting the upper East Fork Starrigavan Creek trail to the upper watershed portion of the trail near the Eagle Dip Lake trailhead. On March 9, 2020 Scoping letters detailing the Proposed Action were emailed through GovDelivery to 731 subscribers including local Tribes, Tribal Corporations, State and Federal agencies. A 30-day comment period legal notice was published in the Daily Sitka Sentinel on March 9, 2020. Project record location:

<https://www.fs.usda.gov/project/?project=57497>

As a result, three parties responded during the scoping process. All letters and comments received on the proposed project can be found in the project record.

A [list of agencies, organizations and/or persons consulted](#) regarding this project is also provided.

FINDINGS REQUIRED BY OTHER LAWS/REGULATIONS

Findings required by other laws and regulations applicable to the project can be found in the [Environmental Impacts section](#).



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IMPLEMENTATION DATE

Pursuant to 36 CFR 218.12, I may sign the decision notice five (5) business days after the close of the objection filing period. Implementation may begin immediately after this decision notice is signed. There is no requirement to publish notification of the decision.

OBJECTION OPPORTUNITIES

This decision was subject to objection pursuant to 36 CFR 218, and a legal notice of the opportunity to object was published on January 22, 2021, in the Daily Sitka Sentinel and sent to those who provided comments during the project's development. No objections were filed during the 45-day objection filing period.

CONTACT

For additional information concerning this decision, contact:

Martin Becker, Watershed Program Coordinator, 2108 HPR, Sitka, AK, 99835, 907-747-4293

Mike Mullin, Natural Resource Specialist (Recreation), 2108 HPR, Sitka, AK, 99835, 907-747-4274

J. Perry Edwards
Sitka District Ranger



APPENDIX A – EXISTING AND PROPOSED TRAIL OPPORTUNITIES

Table 1. Sitka Ranger District Trail Opportunity Type

Trail Opportunity	Existing Mileage	Mileage After Full Implementation ¹
Motorized	80.4	84.7
Non-motorized	50.0	60.5

¹ Mileage is an estimate and is likely to change to a slight extent after proposed route locations are fine-tuned during survey and construction phases.

Table 1. Designed and Allowed Uses for Proposed Trails

Trail	Proposed Action #	Designed Use ¹	Additional Allowed Uses ²	Approximate Distance (mi)
Trailhead Connector to Mainline	12	ATV <50"	Motorcycle/E-bike, Mountain Bike, Hiker/Pedestrian	0.1
OHV loops	15	ATV <50"	Motorcycle/E-bike, Mountain Bike, Hiker/Pedestrian	1.3
Mainline Extension in South Fork Starrigavan	16	ATV <50"	Motorcycle/E-bike, Mountain Bike, Hiker/Pedestrian	0.4
Motorcycle loop	17	Motorcycle/E-bike	Mountain Bike, Hiker/Pedestrian	2.5
Starrigavan Ridge ³	19	Hiker/Pedestrian	None	4.8
Eagle Dip Lake	20	Hiker/Pedestrian	Mountain Bike	1.7
South Fork Starrigavan	21	Hiker/Pedestrian	Mountain Bike	2.5
Mountain Bike (multiple trails likely) ⁴	22	Mountain Bike	None	

¹ Design Parameters will be based on technical guidelines found in USFS Trails Management Handbook (FSH 2309.18)

² Non-motorized uses (e.g. skiing, snowshoeing) will be allowed during the snow season. A forthcoming decision will designate which National Forest System roads, trails, and areas on the Sitka Ranger District will be open to over-snow motorized use.

³ A special law enforcement order will be required to prohibit mountain bike use.

⁴ No individual trails have been planned yet. Total mileage is likely to be less than 1.5 miles. A special law enforcement order will be required to prohibit hiker/pedestrian use.



APPENDIX B -PROJECT DESIGN CRITERIA

BOTANY

SENSITIVE PLANTS:

- BOT 1. Once more precise locations of Proposed Actions are known, the locations should be reviewed by a qualified botanist to determine if possible sensitive plant habitat occurs in or near the area.
- BOT 2. Identified suitable habitat that may be affected by Proposed Actions should be surveyed by a qualified botanist during the growing season to determine the presence or absence of sensitive plants before implementation of activities in that habitat.
- BOT 3. If sensitive plants are found, apply Forest Plan standards and guidelines to protect the occurrence, including but not limited to avoidance by re-locating or re-routing the action, partial retention of forest structure, and directional felling of trees away from the occurrence (USFS 2016).
- BOT 4. If any sensitive or rare plant species are discovered during implementation of this project, protect the occurrence and immediately notify the Forest Service.

INVASIVE PLANTS:

The following Tongass National Forest Weed Best Management Practices (Krosse 2019) should be implemented as part of the Proposed Action to reduce the risk of invasive plant infestations to a low level:

- BOT 5. Use contract and permit clauses, provisions, and/or specifications to require that the activities of contractors and permittees are conducted to prevent the introduction and spread of invasive plant species.
 - a) Before contracts are awarded or special use permits approved, incorporate appropriate contract clauses and specifications requiring measures to prevent the introduction and spread of invasive plant species. (FSM 2903 (6) & 2904.08(14)). See Exhibit 3 (Krosse 2019) for example contract clauses and/or provisions related to invasive plant prevention measures.
- BOT 6. Make every effort to prevent the accidental spread of invasive plants carried by contaminated vehicles, equipment, personnel, or materials (including plants, wood, plant/wood products, water, soil, rock, sand, gravel, mulch, seeds, grain, hay, straw or other materials).
 - a) To meet the intent of national (FS-990a) and regional (FSM 2509.22) BMP's, standards and requirements for vehicle and equipment cleaning (including trail and road maintenance equipment, outfitter and guides equipment, etc.) to prevent the accidental spread of invasive plant materials on NFS lands or to adjacent areas will follow Exhibit 4 (Krosse 2019. (FSM 2903 (7)(a))



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- b) Mechanical equipment cleaning must occur off NFS lands (This does not apply to service vehicles that will stay on the roadway, traveling frequently in and out of the project area). If cleaning can only occur on NFS lands, permits are required (see BOT 6c below).
 - c) When mechanical equipment cleaning must occur on NFS lands, reference 2509.22 (R10 BMP Handbook) No. 15.2 to prevent water contamination and risk to humans. (FSM 2509.2, FSH 2109.14, Chapter 40 & National Technical Guide FS- 990a)
 - d) Make every effort to ensure that all materials used on the NFS lands are free of invasive plant materials (including reproductive/propagative material such as seeds, roots, flowers). (FSM 2903 (7)(b))
 - e) Follow State of Alaska and Tongass N.F. weed-free gravel and straw certification programs or equivalent inspection and approval process to ensure these materials are certified prior to their use and spread on National Forest lands (FSM 2903 (8); 36 CFR 261 and Departmental Regulation 1512-1) See Exhibit 5 (Krosse 2019) for standards and procedures of straw and gravel certification.
 - f) Before construction equipment moves into a project area, treat Alaska prohibited and restricted noxious weed plants (see Exhibit 1 (Krosse 2019)) and any priority District invasive plants along existing Forest Service access roads or trails leading to the project area. (FSM 2070 and FSM 2903 (5))
 - g) All trail crews and other field going personnel should inspect, remove, and properly dispose of weed seed and plant parts found on their clothing and equipment off NFS lands, particularly if going from one location to another that contains weeds or highly disturbed habitats. (FSM 2904.08(9))
- BOT 7. Revegetate bare soil resulting from project activities (roads, timber harvest, mining etc.) to minimize spread of invasive plants and if prompt natural regeneration is not expected.
- a) For guidance on revegetating disturbed sites, including transportation projects, using both native and approved non- native plant materials for erosion control and/or other restoration activities see Exhibit 6 (FSM 2070 and FSM 2903(5))
- BOT 8. Monitor management activities, including maintenance and revegetation projects, for potential spread or establishment of invasive species in aquatic and terrestrial areas of the Forest.
- a) Monitor treatment sites for efficacy and to evaluate impacts of affected resources. (FSM 2903 (9), 2904.07 (6), and 2904.08(6)).
- BOT 9. Retain shade to suppress weeds.
- a) Minimize the removal of trees and other roadside vegetation during transportation improvement projects.
- BOT 10. Re-establish and monitor vegetation on bare ground due to construction activities that minimize weed spread.



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- a) For all transportation improvement projects (including grading and blading) seed all disturbed soil (except the travel way on surfaced roads) in a manner that optimizes plant establishment for that specific site. Monitor re-vegetation activities (FSM 2070 and FSM 2903(5 and 9)) See BOT 7a.
- b) See Exhibit 6 (Krosse 2019) for seeding specifications, which includes guidance on use of native plant materials for reseeding and/or restoration activities. (FSM 2070 and FSM 2903(5))

BOT 11. Minimize the movement of existing and new weed species caused by moving infested gravel and fill material.

- a) Inspect all active gravel and borrow sources before use and transport. If weeds are present avoid infested areas. Treat infested areas until weeds are controlled. Avoid establishing new material sources in areas where weeds are present. (FSM 2903(7)) See BOT 6c and BOT 6d above.
- b) If new infestations occur at a borrow pit that was previously approved, that pit may not be used as a material source for that project unless the top 8" of contaminated material is removed and stockpiled. (FSM 2903(7)) See BOT 6a to BOT 6e above and Exhibit 5 (Krosse 2019)
- c) Monitor for emerging weeds on stockpiled material at new and existing pits. Monitor the area where pit material is used to ensure that no weed seeds are transported to the use site. (FSM 2903(9))

BOT 12. Minimize transport and establishment of weeds on NFS lands.

- a) Treat weeds as needed at trailheads, outfitter and public camps, cabins, airstrips, and roads leading to and from trailheads. (FSM 2904.08(4))
- b) Motorized trail users should inspect and clean their vehicles prior to using on NFS lands. Provide educational materials to outfitters & guides, ATV and snowmobile groups alerting them of this need. (FSM 2904.07(8) & FMS 2904.07(10))

BOT 13. Increase weed awareness and prevention efforts among forest users.

- a) Use education programs and materials (e.g. Leave No Weeds) to increase weed awareness and prevent weed spread by recreationists. FSM 2904.07(8))
- b) Post prevention practices at all NFS trailheads, roads, and forest portals. (FSM 2904.07(8)) Integrate weed prevention and management in all soil, watershed and stream restoration projects.

BOT 14. Use native material when available. See current seeding guidelines (FSM 2080 TNF Supplement, Exhibit 2) for detailed procedures and appropriate mixes.



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- a. See Exhibit 6 (Krosse 2019) for seeding specifications, which includes guidance on use of native plant materials for reseeding and/or restoration activities. (FSM 2070 and FSM 2903(5))

BOT 15. Minimize weed spread caused by moving infested gravel and fill material.

- a) All active gravel and borrow sources must be inspected before use and transport. If weeds are present, strip at least the top 8" and stockpile contaminated material to reduce transport of buried weed seed. Treat weeds at new pits where widespread weeds are present before transport and use. See BOT 6d above.

CULTURAL/HERITAGE

- CUL 1. The archaeological investigation of the funded portion of the undertaking area indicates it is unlikely heritage resources will be discovered during undertaking activities. However, the potential for discoveries exists. Should any resources, potentially eligible to the National Register, be discovered during the undertaking's ground disturbing activities, all activities shall stop. The Forest Service shall then notify Sitka Tribe of Alaska, Shee Atiká Incorporated, and the SHPO. The Forest Service will revert to standard Section 106 procedures for a determination of eligibility and assessment of effects, as outlined in Section III. c. (Standard Section 106 Procedures: Discoveries and Unanticipated Effects) of the Heritage PA. Furthermore, additional archaeological survey will be conducted prior to implementing undertaking activities that are not currently funded for FY2021.
- CUL 2. In the event that any human remains are encountered, work in the immediate vicinity of the discovery shall cease. Forest Service shall, as appropriate, comply with the most current State protocols for reporting a discovery of human remains. If, after State protocols have been carried out, the potential for Alaska Native human remains is identified, the Forest Service shall follow NAGPRA procedures as outlined at 43 CFR 10, and ARPA procedures as outlined at 43 CFR 7.

ENGINEERING

- ENG 1. Traffic Control Plans will be required by contract specifications to maintain traffic safety during construction, where applicable.
- ENG 2. The treated wood portions of the bridge shall be constructed of lumber treated with preservatives free of arsenic and creosote. Pressure-treated lumber is preferred, however, after market, topical wood preservatives may be used provided they adhere to the above guidelines and are applied in an upland location and allowed to fully cure prior to placement in or over a waterbody. Acceptable common pressure treatments include: ACQ (Ammoniacal Copper Quat), ACZA (Ammoniacal Copper Zinc Arsenate), and MCA (Micronized Copper Azole). Pentachlorophenol (PCP) may be acceptable, provided it complies with WWPI, WWPA and AWPA standards, which require cleaned surface after treatment. For all treated wood, comply with Wester Wood Preserver Institute's Treated Wood in Aquatic Environments.



FISHERIES/HYDROLOGY/SOILS

A Forest Service fisheries technician, fisheries biologist, or hydrologist will be on-site during the implementation of the proposed activities. These individuals will inspect and monitor construction activities to ensure proper implementation and take appropriate action to reduce or eliminate negative effects to resources.

The following project design criteria would help prevent potential effects of the proposed work:

- FHS 1. All design criteria and BMPs are enforceable through contract specifications. Work will be inspected at regular intervals during and after construction activities to check on quality of work, materials and identify for mid-project corrections. (National BMP AqEco-2).
- FHS 2. At the contract pre-work meeting, appropriate resource specialist explains and review key project design criteria with the contractor.
- FHS 3. An erosion/sediment control plan will be created prior to project construction as part of the construction contract to cover all disturbed areas of development. Erosion control devices such as silt fence, straw or coco wattles and/or mats will be used to protect water ways from sediment impacts. (R10-BMP 12.17; 12.7; 14.11; 14.5; 18.3; National BMPs AqEco-2; Road-7; Veg-2).
- FHS 4. Petroleum-based hydraulic fluid in heavy equipment used within stream channels will be replaced with vegetable-based hydraulic fluid to protect water quality and aquatic species in the event of a spill. Spill containment kit would be kept on site. (R10-BMPs 12.8; 12.9; National BMPs AqEco-2; Road-3; Road-10).
- FHS 5. Oil pollution prevention and contingencies would be in place. Equipment would be fueled a minimum of 100 feet from an active stream channel. Detailed equipment refueling plans would be considered prior to work commencement. Equipment will be frequently inspected for leaks. (R10-BMPs 12.8; 12.9; National BMPs AqEco-2; Road-10).
- FHS 6. Areas suitable for staging construction materials and equipment would be identified on site prior to implementation. (R10-BMPs 12.8; 14.14; National BMP Fac-2).
- FHS 7. Equipment would not be stored, maintained or repaired within the stream channel or floodplain. (R10-BMP 14.14; National BMP Road-9; Fac-2).
- FHS 8. The footprint of ground disturbance in and adjacent to the channel would be minimized. (R10-BMPs 13.2; 14.14; National BMP Veg-3).
- FHS 9. Fish stream crossings will be designed and installed to maintain the desired migration or other movement of fish inhabiting the waterbody and sustain bankfull dimensions of depth, width, and slope and maintain streambed and bank resiliency and continuity through the structure (R10-BMP 14.17; National-BMPs Road-7; AqEco-2).
- FHS 10. In-channel construction activities are subject to fish timing windows and would be determined in consultation with the Alaska Department of Fish and Game, Habitat



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Division as per the Title 16 Memorandum of Understanding. (R10-BMPs 14.14;14.6, 18.3; National BMPs AqEco-2; Road-3; Road-7).

- FHS 11. Fisheries personnel will electrofish and use 'minnow' traps to remove fish from all areas that will be dewatered due to construction activities prior to work. This area will extend upstream and downstream at a distance collaboratively determined by the District Hydrologist and Fish Biologist base on channels size and habitat features. Trapped fish will be transplanted to safe habitat areas upstream or downstream as determined by the District Fish Biologist. Block nets will be placed and maintained to ensure fish do not reenter work areas (R10-BMP 14.15; National BMP AqEco-2).
- FHS 12. Equipment use in live streams would be kept to a minimum. To the extent possible, equipment would be limited to puncheon trail surfaces and gravel bars, only accessing the active flow channel when necessary to perform detailed site-specific construction. (R10-BMPs 12.8; 13.2; 14.14; 14.6; 18.3; National BMP AqEco-2; Road-2; Road-3).
- FHS 13. Bank and riparian vegetation disturbance would be minimized and rehabilitated following completion of project work. (R10-BMPs 12.4; 12.5; 12.6; 12.17; 13.2; National BMP AqEco-2).
- FHS 14. Where feasible or advisable, active flow channel work sites will be dewatered. Contractor will provide and get approval for a dewatering plan. Fish would be removed from the dewatering area prior to dewatering of the site. (R10-BMP 14.15; National BMPs AqEco-2; Road-7).
- FHS 15. Areas of bare ground resulting from construction activities where slash is not available, would be reseeded with an approved seed mix or replanted with local native species. (R10-BMP 12.17; National BMP Veg-2).
- FHS 16. Riparian vegetation disturbance would be minimized and rehabilitated following completion of the project. (R10-BMPs 12.4; 12.5; 12.6; 12.17; 13.2; National BMP Veg-3).
- FHS 17. Puncheon access trails used during the project will be closed upon project completion and the routes will be covered in slash to prevent erosion, soil compaction, and off-road travel in areas where equipment operates or where mineral soils are exposed, and "fluffed" upon project completion to prevent further access and to encourage natural regeneration and maintain and restore natural drainage patterns of the area. (R10-BMPs 12.17; 13.2; 14.11; National BMPs Road-2; Road-5; Veg-2).
- FHS 18. Limits of each fish structure site will be clearly identified in the field by staking, and/or flagging. (R10-BMP 14.14; National BMP AqEco-4).
- FHS 19. Work during rainfall events will be avoided to the extent practicable, and work will be conducted during lower water conditions in June and July. (R10-BMPs 14.6; 14.14; National BMP AqEco-2).
- FHS 20. For foot trail construction: designate small equipment refueling (chainsaws, power haulers, etc.), service, and staging areas well away (>50 feet) from surface waters and utilize fuel absorbent pads under gas tanks during refueling to minimize potential for soil and water contamination from fuel spills. Have additional fuel and oil absorbent pads on



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site and accessible in the event of a fuel or oil spill. (R10-BMPs 12.8; 12.9; National BMP Rec-4).

- FHS 21. Recommend the use of vegetable oil or other biodegradable fuel for chainsaw bar lube when practicable during construction near surface waters. (R10-BMPs 12.8; 12.9; National BMPs AqEco-2).
- FHS 22. Include cross drains (pipe, log or French) when building gravel trails in wet areas. (R10-BMPs 14.17; National BMPs Rec-4; Road-2; Road-7).
- FHS 23. Design flow should be based upon design life and risk acceptable to the approving line officer. Stream crossing structures will be designed to provide the most efficient drainage facility consistent with resource protection (for example, fish passage), importance of the road, legal obligations, and total costs. The design may involve a hydrologic analysis to determine conditions that may affect water quality (for example, runoff rates and volumes, flood conditions, flow velocities, sedimentation, scour, and approach and exit channel equilibriums). (R10-BMPs 14.17; National BMPs AqEco-4; Rec-4; Road-2; Road-7).
- FHS 24. System trails will have foot bridges on non-fish streams are designed to pass a selected (normally 50 to 75 year) flood event with allowance for expected bed load sediments and floating debris. Where practicable, allowance should be made to minimize stream width restrictions. Design structures to minimize streambed and stream bank erosion. Bridges, bottomless arches, pipe arches and oversized buried pipes with a design to accommodate a 100-year flood event are the preferred structure on Class I and II streams. (R10-BMPs 14.17; National BMPs AqEco-4; Rec-4; Road-2; Road-7; WO-7709-56b: 65.3).

LANDS

- LAN 1. Comply with the terms of the Easement Agreement with the State of Alaska for project actions implemented on State of Alaska property.

RECREATION

Most of the design criteria intended to address BMPs and reduce the potential for degradation of habitat and resources during recreation project implementation are described above and below by the resource area that is protected. Recreation projects will implement all resource design criteria and BMPs in this appendix that are relevant to recreation Proposed Actions.

- REC 1. Clearly identify at the start of all trails the use type allowed.
- REC 2. Closure or delay notices will be posted at the trailhead in advance of construction activities. Public service announcements will be made to warn users to plan accordingly.
- REC 3. Install barriers to limit use of non-motorized trails by motorized users.



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- REC 4. Post and maintain signs at the trailhead to promote Leave No Trace principles and promote responsible multiple-use trail ethics.

WILDLIFE

- WIL 1. If any previously undiscovered endangered, threatened, candidate or sensitive species or key habitats is discovered at any point in time prior to or during the implementation of this project, the district biologist would be consulted to determine appropriate course of action.
- WIL 2. Prior to trail construction goshawk and eagle nest surveys will be conducted along proposed trail routes.
- WIL 3. If an active raptor nest is identified within 600 feet of the Proposed Action timing windows (nesting and fledging periods for bald eagle: March 1st thru July 31st and goshawks: March 15th thru August 15th) and/or trail re-route will be utilized to maintain a buffer around the nest.
- WIL 4. During project construction field crews and contractors will store fuel and other bear attractants in bear proof containers or off-site.
- WIL 5. To help decrease the possibility of a negative bear encounters signs will be posted at trail heads encouraging hikers to carry bear deterrents (i.e. bear spray). Additionally, information will be posted on any know bear activities in the area.
- WIL 6. When possible try and limit felling of trees to periods outside of migratory bird nesting periods (April 15th thru July 15th).
- WIL 7. Maintain snags when possible to protect potential nesting and roosting sites.
- WIL 8. Helicopter flights bringing materials to project sites should avoid eagle nests by 1000 feet during the breeding season per the USFWS Bald Eagle Management Guidelines.
- WIL 9. Prior to March 1, recreation will provide the wildlife biologist with planned areas of work for the year, and estimated dates of work to allow for scheduling of goshawk surveys, if needed. Sitka wildlife staff will survey for goshawk nesting if the following occur: trail work is scheduled to occur 1) in a location with high probability of nesting 2) during the nesting season, or if 3) sightings and behavior of goshawk suggest nearby goshawk nesting.
- WIL 10. Coordinate with fisheries and wildlife biologists to determine appropriate construction timing windows.