



Relocation of the Stehekin Valley Road at Milepost 5.5 Environmental Assessment



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ON THE COVER

Photo showing the damage to the road from riverbank erosion after trees toppled on the riverbank in 2018.
NPS photo

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Chapter 1 - Introduction

1.1: Proposal

The National Park Service (NPS) in partnership with the Federal Highways Administration (FHWA) propose to reroute approximately 0.25 miles of the Stehekin Valley Road at milepost (MP) 5.5 in Lake Chelan National Recreation Area. The Western Federal Lands Highway Division Office (WFLHD) of the FHWA is a cooperating agency and will deliver all preliminary engineering, advertisement, bid and award, and construction administration activities utilizing NPS funds. The NPS administers the National Environmental Policy Act (NEPA) compliance process for this environmental assessment (EA) and post-construction revegetation. Staff from both agencies have worked closely together through the entire planning and compliance process.

1.2: Background

The Stehekin Valley Road is owned and maintained by the NPS and is the sole vehicular connection for federal and private lands for 12.9 miles from the Stehekin Landing at the head of Lake Chelan that then parallels the Stehekin River (Figure 1). The majority of the road is located in the Lake Chelan National Recreation Area (LCNRA) and managed as part of the North Cascades National Park Service Complex (the Complex) by the NPS.

The Stehekin Valley Road is a two lane chip sealed and gravel road with a total roadway width of 16-feet, which provides access and egress to numerous private properties and businesses, fire and emergency services, public utilities maintenance, NPS administration, and public access to federal lands for recreational activities.

During a November 2017 storm event, the Stehekin River undercut the north bank near MP 5.5 of the road. Further erosion in fall 2018 caused two large maple trees to topple toward the river on November 30, 2018 (Figure 2). The bank erosion and collapse of the tree roots severely damaged the southbound lane of the road including the road base and pavement (cover photo). Temporary emergency stabilization of the road was accomplished on December 9, 2018 by placing 90-cubic yards of boulders on top of the root wads from the fallen trees above the ordinary high-water line (Figure 3). The road is currently passable but of reduced width (approximately 14-ft) with logs and cones marking the abrupt drop to the river (Figure 4). The reduced width precludes passing at this short section of road but given the relatively light traffic patterns this does not cause backups or vehicle congestion.

The temporary bank stabilization measure is anticipated to fail with continued erosion, with the river eventually eroding the road away forcing closure. The longevity of the existing stabilization and the road at this location is likely dependent on the magnitude and timing of future flood events and movement of large wood pieces and deposition of gravel upstream of the site. At this location, the road bisects private property and the eroded riverbank is on this private property. Given the recent movement of the main channel of the river toward the side channel along the road, it is likely that more erosion problems will develop downstream affecting both the Stehekin Valley Road and private property.

1.3: Purpose and Need for Action

The purpose of the Proposed Action is to sustainably maintain safe and reliable vehicle access on the Stehekin Valley Road by addressing the threat of bank erosion below the road near MP 5.5. Maintaining this access is essential for local transportation needs and ensuring the health and safety of the local populace, NPS employees, and visitors. This proposal is aligned with the purpose of the [Stehekin River Corridor Implementation Plan](#) (NPS 2013) and the goals and direction provided in the [Lake Chelan National Recreation Area General Management Plan](#) (NPS 1995)

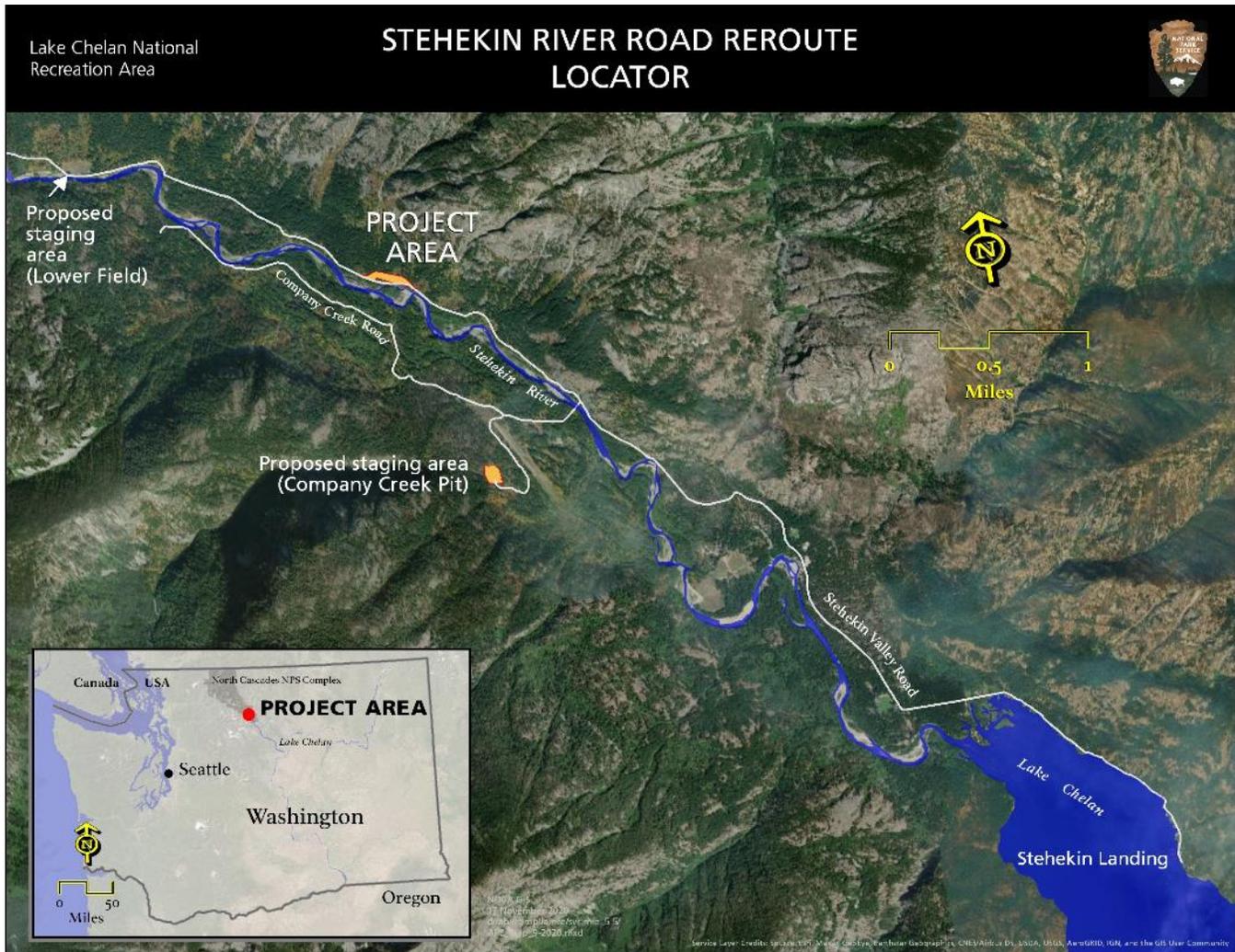


Figure 1. Map showing the location of the proposed project area near milepost 5.5 of the Stehekin Valley Road in Lake Chelan National Recreation Area.



Figure 2. Looking at the Stehekin River downstream at the bank erosion and two toppled maple trees from the November 2018 flood.



Figure 3. Photo showing 90-cubic yards of boulders on top of the root wads from the fallen trees above the ordinary high-water line.



Figure 4. Photo looking west up the river and road, showing current cone and log markers and reduced width.

Chapter 2 – Alternatives

2.1: Alternative I: Proposed Action

The Proposed Action would reroute the road away from the vulnerable area near the Stehekin River and out of private property to an upland location through NPS-managed forested lands (Figure 5). This is also the environmentally preferred alternative. The dimensions of the proposed realignment are the same as the existing roadway encompassing two 7-foot lanes with 1-foot shoulders for a total width of 16 feet. A 1-foot deep drainage ditch would be included with cut slopes. No turnouts or viewpoints are planned. The final road surface is expected to be a chip seal or similar type of material to match the current surface. The approximate width of the footprint of disturbance from construction will vary between approximately 40-feet to 70-feet depending on the topography (Figure 5), affecting approximately 1.4 acres.

This new alignment would meet safety and design requirements and is laid out to 1) avoid disturbing adjacent drainage culverts on each end; 2) maximize the distance from the nearby private property (Parcel 07-142; Figure 5); and 3) avoid a small alluvial fan to the northwest of the realignment. Due to landscape features and characteristics the realignment is placed below the headwall of the existing fan feature; the road cannot be moved any farther



Figure 5. Map showing the shaded relief topography of the project area, existing road, alignment options for the road reroute including clearing limits and proposed culvert, the private land parcel, power poles, trees that are greater than 18 inches diameter at breast height, and location of Stehekin River.

upland without significantly impacting the fan feature. To minimize both environmental impacts and costs associated with new cuts and fills, the realignment is being designed to match the existing topography to the extent possible.

The proposed road is also designed to reduce the potential for storm water runoff onto the adjacent private property. Best management practices (BMPs) to address stormwater runoff would likely include drainage ditches along the realignment in cut slope areas, rock check dams to reduce flow velocities, fabric liners, sediment waddles, erosion control blankets, wood fiber mulch and seeding, which all minimize erosion and deposition of sediment to the existing streams. As the project design progresses, a storm water pollution prevention plan, known as a SWPPP will be developed identifying the type and location of the BMPs as well as the maintenance and inspection requirements to ensure those BMP's remain in good working order during the life of the project and until the area has been permanently stabilized by vegetation.

Access to Parcel 07-142 is anticipated to be from the west side with a new driveway that would exit the new road at a 90-degree angle to facilitate the ability for vehicles to enter and exit while traveling in either direction on the road (Figure 5). This corner will be designed to accommodate a vehicle the size of a small bus or a passenger car towing a trailer.

Treatment of the abandoned road alignment to the east of the eroded road will consist of maintaining a primitive road from where the realignment takes off, up to a Chelan Public Utility District (PUD) utility pole and then, from there, scarification and revegetation to the eroded road site. The eroded area is likely to grow in future years. The primitive road is needed to permit the PUD access to the utility pole for maintenance purposes. Reclamation of this portion of the remaining abandoned alignment is needed to address safety concerns and prevent public access to the damaged road site (Figure 5).

Land clearing work may begin as early as September 2021 as a smaller separate contract from that of earth moving and road construction. Up to 44 trees that are 18-inches or greater in diameter at breast height are expected to be removed. Timber from the cleared area would be utilized for firewood (as stipulated in the Stehekin Firewood Management Plan), shredded to use for soil stabilization in revegetation areas, stockpiled for future riverbank stabilization projects, and any excess would be burned in a burn pile. The wood from the project intended for firewood would be moved to the log yard and available to residents having a current firewood permit.

Earth moving and road construction work may begin as early as September 2022. To ensure the road meets the vertical grade standard of less than 4%, cut and fill would be required, with the goal of balancing the cut and fill as much as possible. This means that whatever is excavated from roadway cuts will be used as fill elsewhere in the design, assuming the material meets minimum quality requirements. Balancing cut and fill on a project has several benefits. It minimizes the associated costs of purchasing and importing material, which at this project location, is expensive and logistically challenging. It also keeps to a minimum truck traffic that can be disruptive to the Stehekin community and the potential for introducing invasive or noxious weed to the project area. Finally, it eliminates the expense of disposing of unneeded material.

The current preliminary project design estimates roughly up to 2,500 cubic yards of cut and roughly up to 1500 cubic yards of fill. These amounts will change as the design is further refined but it is not expected that, in the current alignment, that the amounts will dramatically increase. Regardless of how well-balanced the project is, some materials would need to be imported including suitable roadway base material, topsoil, and additional unclassified fill material. There would be no use of local gravel pit material as it is not available for this type of project. Material imported from outside the Stehekin Valley would be required to be weed free. Note, at the time of writing of this EA, 30% plans were under review and a geotechnical investigation has not been completed (planned for April 2021), and so while the general alignment of the route is accurate, there may be some minor adjustments. Details and quantities may shift as designs are refined concurrent with review of this EA.

At this time blasting is not anticipated but it may be required to remove any large boulders discovered that cannot be removed by excavation alone.

FHWA is a cooperating agency and would administer the construction contract for the project. To secure the most cost-effective construction price and efficient schedule, requirements for construction methods are kept to a minimum and are left to the contractor to determine. Exceptions to this approach include timing restrictions and method requirements required to secure various environmental clearances and permits. Contract conditions provide both standard specifications (see the [FP-14 document](#) (U.S. DOT 2014)) and project specific conditions to direct the

contractor. For example, contract language prohibits the contractor from working outside of the construction limits identified on the plans sets. In addition, the contract will require the contractor to specify refueling procedures and prepare and comply with a Hazardous Spill Plan. Also, the contractor will abide by any pertinent restrictions on equipment use based on local wildfire risk advisories.

To ensure quality control, the FHWA staff overseeing the construction contract will work closely with NPS staff, including weekly meetings with the NPS, FHWA, and the contractor to coordinate upcoming activities and provide the NPS ample notice to monitor construction as needed. Another quality control step FHWA takes is to adjust construction inspection duties and frequency based on risk and contractor performance; Normally weekly inspections are performed to ensure compliance. In extreme circumstances FHWA does have the authority to remove contractors or their sub-contractors from projects or terminate the contract altogether.

Federal Highways will provide regular updates with a newsletter to the Stehekin community and public.

To allow for assessment of possible nesting of northern spotted owls (a federally Threatened species) in the vicinity, construction activities cannot begin before July 1st or, should same year nesting surveys identify a nearby nesting pair, before September 6th. In addition, clearing of trees and vegetation for the road reroute cannot take place before September 1 to prevent impacting nesting migratory land birds and western gray squirrel (listed as a Washington State Threatened species).

Work will likely be conducted Monday-Friday during daylight hours. The work would take approximately 60 days to complete with the goal of completion in one construction season, although the construction could span two seasons depending on fall weather conditions. No road closures are anticipated although there may be some traffic delays of up to 30 minutes. Given that most of the work is on a new alignment, traffic disruption should be minimal since most of the work will be off the existing road. If delays are anticipated these would be publicly communicated in advance by the NPS. Otherwise, A precise construction schedule in terms of number of days, seasons and daily work schedule will not be known until after a contract is awarded. If unanticipated conditions (weather, fire) warrant night or weekend work to complete the project, FHWA will coordinate with the NPS to ensure these changes are communicated to the public in a timely fashion.

Two staging locations outside of the reroute area (Figure 1) are anticipated to store equipment and materials: 1) the existing gravel pit off Company Creek Road that is west of the Stehekin Landing strip (Company Creek Pit); and 2) a previously disturbed field at MP 7.5 (locally known as Lower Field). Logistics such as barging, local equipment transport, and temporary lodging would be determined by the contractor. The following construction equipment should be anticipated for use in the construction activities: pickup trucks and trailers, refueling and maintenance trucks, skid-steer, track mounted excavator, motor grader, low-boy trailer, and transport. At this time, it is not possible to provide an accurate estimate the number and timing of truck trips on the Stehekin Valley Road, but these details can be publicly communicated by the FHWA once the information is known.

Exposed slopes will be covered with standard soil erosion and sediment control measures as required by environmental permits and then permanently stabilized through revegetation to minimize the potential for erosion and undermining of the new road subgrade. Post project revegetation with native species will be accomplished by the NPS likely in the fall of 2023 as it is ineffective to plant seed in the hot dry summer months. The National Pollutant Discharge Elimination System Permit requires exposed surface to be vegetated to 70% of background cover before the permit can be terminated. The permit holder must maintain soil erosion and sediment control measures (needed because there is no vegetation to prevent sedimentation) and conduct weekly inspections of those

measures, until 70% of background cover is accomplished. FHWA and the contractor are the NPDES holders through construction of the road and then the permit will be transferred to the NPS.

2.2: Alternative II: No Action Alternative

Under the No Action Alternative, the NPS would take no action to try to stabilize the riverbank or road. Continued riverbank erosion will eventually lead to the road being closed. The timing depends on the severity, frequency, and timing of future flood events. This alternative does not align with NPS safety and sustainability policies.

2.3: Alternatives Considered But Dismissed

A slight variation of the reroute would have the new road exit the existing road 300 feet to the east (Figure 5). That alignment would require the installation of a large culvert where a small spring-fed stream crosses the road (stream S-1 on Figure 5), to permit aquatic organism passage. Culvert design required additional geotechnical surveys permitting, design, and added to the construction complexity. This additional effort would delay implementation of an urgent project needed to maintain safe access and add expense that is infeasible given current budget constraints. Therefore, this alternative was considered but dismissed from detailed analysis.

Maintaining the road in the current alignment was considered but dismissed because this was determined to be an unsustainable solution. The NPS has addressed and continues to address similar bank erosion problems next to roads in the Complex. Common bank stabilization methods include installing bank barbs and bioengineering in a location after flood damage. Subsequent floods often damage the bank stabilization installation and/or banks nearby resulting in the need for more work. It can be a long-term ongoing cycle of erosion and stabilization causing periodic disruption and added expense that is avoided by relocating the road. The environmental consequences of bank stabilization in order to protect infrastructure is discussed in detail in Chapter IV of the [Stehekin River Corridor Implementation Plan](#) (NPS 2013). Also, for a general description of the Stehekin River system see pages 9-17 in NPS (2013).

Chapter 3 – Affected Environment and Environmental Consequences

3.0: Reasonably Foreseeable Planned Actions

There are two planned actions identified in the [Stehekin River Corridor Implementation Plan](#) (NPS 2013) to consider as part of the affected environment that have the potential to overlap with the proposed action:

1. The [Stehekin River Corridor Implementation Plan](#) (NPS 2013) identifies the construction of an 11-mile long trail:

Construct a trail from the Stehekin Landing to High Bridge for horses and hikers as proposed in the 1995 GMP. A segment of this trail will be constructed along the abandoned section of road through McGregor Meadows, and cyclists will be allowed to use this section of trail because it will be converted from a road (which presently allows cyclists) to a multi-use trail. Trail construction will occur in phases or segments over time, as funding and resources become available for implementation. (NPS 2013)

This Stehekin Valley Trail has not been constructed yet, but it would parallel the Stehekin Valley Road and be in the same vicinity as the proposed road relocation.

2. Another project in the Stehekin valley that could have some interaction with the proposed action is construction of a new fire dorm, cache, and housing near the Stehekin Airstrip off Company Creek Road in 2021 and 2022. This project may overlap in the needs for access to Company creek pit, traffic control, and contractor housing. Long-term interaction of effects from the new facilities described above as well as construction of a clustering of maintenance facilities adjacent to the Stehekin Airstrip including a maintenance building and warehouse, solid waste facility, equipment storage, and hazardous material and fueling areas. More details can be found on this project under Alternative 2 in the [Replacement of Administrative Facilities at Stehekin Environmental Assessment](#) (NPS 2014).

3.1: Issues Dismissed from Detailed Analysis

3.1.1: Environmental Justice and Indian Trust Resources

No potential impacts related to tribal trust resources or communities identified as low-income or minority populations as identified in Executive Order 12898 were identified during internal or external scoping for the project. Therefore, these topics are dismissed from detailed analysis.

3.1.2: Cultural Resources

As a part of the NHPA Section 106 process the park has consulted with the Colville Confederated Tribes (CCT), the Yakama Nation and the State Historic Preservation Office (SHPO). These parties have been afforded the opportunity to comment on the Area of Potential Effect, our historic property survey methodology, the report's findings, and assessment of effect. The CCT and the SHPO have both concurred with our finding of No Historic Properties Effected while the Yakama Nation has not commented.

The inventory of the APE was undertaken by an archeological contractor who thoroughly examined the area through both pedestrian and subsurface survey. An isolated precontact artifact was identified; however, it was determined to be ineligible for listing on the National Register of Historic Places, therefore this topic can be dismissed from detailed analysis. However, an Inadvertent Discovery Plan was written to ensure that if cultural resources are identified during the construction phase that they will be reported to the park for immediate evaluation (see Appendix A for protocols).

3.1.3: Federally Threatened Species: Northern Spotted Owl

The project area and surrounding forest provides high-quality habitat for northern spotted owl (NSO). In the past individuals and nesting pairs of birds have been sighted in close enough proximity to warrant concern that clearing and construction activities could adversely impact their reproductive success. The last documented nesting activity occurred in 2017, in an area less than 300 m from the current Stehekin road. A single individual was detected roughly ¼ mi upslope from that historic nest site in 2019. The scheduled work of the proposed action occurs after the nesting season and is timed such that impacts to NSO nesting would be negated.

3.1.4: Wildlife: Western Gray Squirrel

The project area and surrounding forest provides high-quality habitat for Western Gray Squirrel, a species listed as Threatened by the State of Washington. High quality western gray squirrel habitat persists throughout much of the lower Stehekin Valley, with apparent expansion of squirrel activity to the North in 2020. The scheduled work of the proposed action occurs after the nesting season and is timed such that impacts to nesting animals would be negated.

3.1.5: Migratory Land Birds

The project area and surrounding forest provides high-quality nesting habitat for various species of nesting migratory land birds. However, the scheduled work of the proposed action occurs after the nesting season and is timed such that impacts to nesting animals would be negated.

3.2: Issues with Detailed Analysis

3.2.1: Visitor Use and Experience

Approximately 39,000 people annually visit Stehekin (2015-2019 average from the [NPS Stats website](#), 2021), arriving on one of two commercial passenger boats, by private boat, on foot, or by air via chartered floatplane.

The Stehekin Valley Road provides the primary means of access for public and private transportation within the Stehekin Valley and serves much of the recreational activity. Within the valley, visitors can enjoy a variety of recreational activities facilitated by the road, including hiking, backpacking, camping, horseback riding, bicycling, windsurfing, whitewater paddling, guided shuttle touring, snowshoeing, cross-country skiing, sightseeing, picnicking, and nature trails. Within Lake Chelan NRA and surrounding Forest Service (FS) land, hunting also comprises a small percentage of resident and visitor activities, particularly in the fall. While most people utilize a shuttle bus to travel the area, some lodging accommodations offer the use of a car and bicycle, and UTV rentals are locally available.

Stehekin is an important stopping point for long-distance hikers on the Pacific Crest Trail (PCT). It provides the last easily accessible services for hikers before terminating at the U.S.-Canada border and is a destination for many. PCT hikers rely on public access to and from High Bridge to the Stehekin Landing for mail and supply stops and to utilize other services available in the valley. Recent trends show a significant increase in PCT traffic over the course of the last several years with parcels received at the Stehekin Post Office increasing as much as 300% from 2015-2019.

The overlapping fire facility construction project would cause short-term negligible to minor adverse effects to visitors from noise, dust, and traffic. The long-term effects of the fire facility and maintenance facilities include visual changes and support of operations which would improve visitor experience (see p.100-101 in NPS 2014 for more details).

3.2.1.1: Environmental Consequences Alternative I: Proposed Action

Construction of a road reroute would have long-term beneficial effects on visitor access and experience by maintaining vehicle passage through this portion of the Stehekin Valley, while allowing continued public and private access. In addition, public recreation support services would continue to operate unimpeded for the long-term. These would compound on the long-term effects identified above from the fire and maintenance facilities.

There may be some short-term disruption to visitors using the road from construction delays. Additional traffic and dust generated by truck traffic could be a short-term adverse effect for some visitor's and resident's experiences during the time of construction. Additional noise, dust, and traffic from the fire facility construction may at times add to that from road relocation. Overall, these effects are considered minor.

In the event of its eventual construction, the Stehekin Valley Trail could be accommodated in the same area and would be unaffected by the road relocation.

3.2.1.2: Environmental Consequences Alternative II: No Action Alternative

If no action is taken and the road were to become impassable due to river bank erosion at MP 5.5, the loss of easy vehicle access would severely disrupt recreational activities and opportunities in the upper valley including hiking, backpacking, camping, horseback riding, bicycling, whitewater paddling, guided shuttle touring, snowshoeing, cross-country skiing, sightseeing, picnicking, nature trails, and PCT hiker access to services below MP 5.5. The duration of such a disruption is unknown, but the impact is anticipated to be high.

3.2.2: Socioeconomics

The Lower Stehekin Valley is located at the head of Lake Chelan in Chelan County, Washington. Land ownership in the Lower Stehekin Valley includes a patchwork of public land managed by the NPS as part of the Lake Chelan NRA, and approximately 460 acres of private lands referred to as the community of Stehekin (NPS 2013). The Stehekin community is an unincorporated settlement of year-round and summer homes, and scattered tourism-related businesses. The community was founded in the late 1800s, and some of the residents who live there today are descendants of the original homesteaders to the area.

Of the estimated thirty-six private businesses known to operate in the Stehekin Valley, at least twenty-three provide visitors services in Lake Chelan NRA and/or North Cascades National Park. Based on self-reporting

data provided to the NPS in 2019, eight of the businesses that operate with a Commercial Use Authorization on NPS land served 6,034 visitors to Lake Chelan NRA that year. Lake Chelan Boat Company, who also operates under a Commercial Use Authorization provided service to at least 25,000 visitors and residents of Stehekin. North Cascades Lodge at Stehekin (concessioner) provided overnight services to over 11,000 guests/visitors. Considering the total number of visitors to Stehekin and additional visitor-service-oriented businesses in the Valley, it is likely that the total amount of visitors served by private business in Lake Chelan NRA is much higher.

The road provides access for private residents and visitors who participate in various recreational activities supported by commercial entities within Lake Chelan National Recreation Area. North Cascades Lodge at Stehekin is a concessioner that provides public shuttle services between Stehekin Landing and High Bridge, running at least four shuttle runs daily during the summer months and serving over 10,000 passengers/visitors annually. Public recreation is supported by other commercial operators who provide services (bike rentals, fishing guide services, horse-packing and day rides, rental vehicle access, etc.) to the public and who rely on access between Stehekin Landing and High Bridge to conduct their activities.

Stehekin Valley Ranch (privately owned food service, lodging) is located at mile 9 on the Stehekin Valley Road and provides shuttle services to and from the Stehekin Landing for their guests and clients (daily during the summer months). The road provides vehicular and recreational access to the upper valley for visitors who rent private cabins within the Stehekin Valley. Many Stehekin residents have embraced vacation rental by owner and have constructed or rented out guest houses and cabins for public use, access, and visitation.

Fire and maintenance facilities construction activities could provide local and regional economic benefits by increasing employment and income during the two-year construction period. The cost to construct the proposed facilities is estimated at roughly \$20 million, a portion of which could be directed towards local Stehekin businesses or residents. The potential increases in the construction workforce and revenues for local businesses generated from construction activities and workers would result in beneficial economic impacts (p. 117, NPS 2014)

3.2.2.1: Environmental Consequences Alternative I: Proposed Action

Construction of a road reroute would have long-term beneficial effects on local business particularly those that rely on road access above MP 5.5. There may be some short-term minor impacts due to construction delays on the road, but these are anticipated to be minimal since most of the work would occur on the new alignment and mitigated by communication with the Stehekin community through updates and alerts from FHWA and NPS. The construction work will bring workers to the community for approximately 60 days, which may create some additional demand for services such as food, lodging, and recreation support.

The fire facility construction project would also increase the number of workers seeking services in the valley which could increase revenues for some businesses. Conversely, the additional need for lodging for workers during overlapping work times could exceed the capacity of lodging available and require temporary mobile housing units to be barged up Lake Chelan which would benefit the company that provides that service. There are many variables that make effects difficult to predict and the contractors will be required to navigate the circumstances of the time in their project planning.

3.2.2.2: Environmental Consequences Alternative II: No Action Alternative

If no action is taken and the road were to become impassable due to river bank erosion at MP 5.5, this loss of easy vehicle access would severely disrupt many of the tourism related businesses in the valley, in particular the concessionaire bus, the Stehekin Valley Ranch, and any guest rentals or cabins that are upriver of MP 5.5.

3.2.3: Human Health and Safety

In addition to the number of visitors outlined above, the residential population of Stehekin is roughly 100 in the winter months and 300 during the summer. While the majority of Stehekin residents live below MP 5.5 on the Stehekin Valley Road, including near Harlequin Bridge on Company Creek Road, there are approximately 30 private landowners of developed and undeveloped land between MP 5.5 and MP 9 on the Stehekin Valley Road.

Visitors and residents alike are supported by NPS and volunteer EMTs for emergency medical services in the valley. For wildfire response, the NPS provides and manages all response on NPS property and has an Interagency Agreement with the Washington State Department of Natural Resources to provide initial attack response on private property. The volunteer fire department, Chelan County Fire District 10, also provides response to wildfires on private property or exterior attack and exposure protection only for structure fires. All these responses in the lower valley front-country are commonly road based and rely on rapid first response via Stehekin Valley Road and Company Creek Road. Air-based response is often used for wildfire monitoring and suppression and occasionally used for emergency medical evacuation.

Fire and maintenance facilities construction benefit public health and safety by improving emergency response facilities. Construction activities produce short-term, negligible to minor adverse effects from risks typical during construction. These safety issues would not affect the public and would be limited to active construction activities. Safety on construction sites is generally a high priority for contractors who train personnel regarding safety and require protective gear while on site, which greatly reduces the risk of injuries. (see p. 105-109, NPS 2014)

3.2.3.1: Environmental Consequences Alternative I: Proposed Action

Construction of a road reroute would have long-term beneficial effects on local emergency response assuring continued road access through the MP 5.5 section. There may be some short-term minor impacts due to construction delays on the road, but these are anticipated to be mitigated by communication with the Stehekin community through updates and alerts from FHWA and NPS.

Residents, construction workers, and visitors to Stehekin would experience temporary adverse impacts from noise and dust due to construction activities of the proposed action and the fire facility construction. The hauling of materials, demolition, grading activities, and the presence of construction equipment would generate noise, dust, particulate matter, and other pollutants during construction activities. The most constant noise source would be the internal combustion engines used in construction equipment. The private properties adjacent to the construction area are likely to experience the greatest increases in dust and noise. These impacts would be minimized by complying with existing laws that restrict the emission of dust and odors during construction and using standard BMPs as identified in Appendix A. Upon implementation of these minimization measures, impacts to valley businesses and residents may lead to annoyance during construction but would otherwise be negligible to human health.

This realignment would add to the beneficial safety impacts created by the fire facility construction. Residents, construction workers, and visitors to Stehekin would experience temporary adverse impacts from noise and dust due to construction activities (see p. 121-122, NPS 2014).

3.2.3.2: Environmental Consequences Alternative II: No Action Alternative

As of 2017 there were approximately 30 private landowners above MP 5.5 and at any time there could be tens or hundreds of visitors above MP 5.5. Failure of the road at this point would limit access for first responders needed for emergency medical, structural fire, and wildfires upriver of the washout.

It would also limit the wildfire evacuation contingent for residents and visitors that would need to get to the Stehekin Landing or the Stehekin Airstrip. There are four identified safety zones in the valley: 1) Stehekin Landing, 2) Stehekin Airstrip, 3) Buckner Orchard and 4) the Stehekin Valley Ranch. If there was a need for evacuation due to a fast-moving wildfire, the shelter-in-place option for those upriver from the washout would be limited to the Stehekin Valley Ranch.

3.2.4: Vegetation

The vegetation community in the proposed project area is comprised of a Mixed Coniferous cover type dominated by a moderately closed canopy of Douglas fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*), big leaf maple (*Acer macrophyllum*), and alder species (*Acer rubra*). Shrub cover is sparse to dense and dominated by snowberry (*Symphoricarpos albus*), dwarf rose (*Rosa gymnocarpa*), Pacific dogwood (*Cornus nuttallii*), vine maple (*Acer circinatum*), thimbleberry (*Rubus parviflorum*), serviceberry (*Amalanchier alnifolia*), dwarf Oregon grape (*Mahonia nervosa*), trailing blackberry (*R. ursinus*), blue elderberry (*Sambucus cerulea*), and others. Ground cover consists primarily of wild ginger (*Asarum caudatum*), bracken fern (*Pteridium aquilinum*), little prince's pine (*Chimaphila menziesii*), false Solomon's seal (*Maianthemum racemosum*), claspleaf twistedstalk (*Streptopus amplexifolius*), orange honeysuckle (*Lonicera ciliosa*), white spirea (*Spiraea betulifolia*) pioneer violet (*Viola glabella*), sedge species (*Carex* spp.), blue wildrye (*Elymus glaucus*), and other native grass species mixed with leaf litter and mosses in places. (Rickus and Pratt 2021).

Construction of the fire facility in 2021 and 2022 includes the removal of thirteen trees and minimal clearing of understory plants as this area is predominantly in a previously disturbed area. Additionally, when the maintenance facility and new single-family three-bedroom house are built this would add “removal of approximately 2.6 acres of upland mixed conifer forest, including approximately 200 individual trees (including 38 trees greater than 21 inches dbh)” (p. 75; NPS 2014).

Under both alternatives, natural river erosion would cause loss of riparian vegetation and trees along the nearby riverbank and would create new riparian areas over time.

3.2.4.1: Environmental Consequences Alternative I: Proposed Action

The Proposed action would result in removal of approximately 1.4 acres of native vegetation including up to 44 trees that are 18-inches or greater in diameter at breast height. Removed tree species would include Douglas fir, big leaf maple, and possibly grand fir. A small, yet undetermined portion of the abandoned road would be revegetated.

3.2.4.2: Environmental Consequences Alternative II: No Action Alternative

The No Action Alternative would have no effect on vegetation beyond nearby natural processes.

3.2.5: Wildlife Habitat

Wildlife species inhabiting the Stehekin Valley include approximately 40 species of mammals, over 100 bird species, seven reptile species, and five species of amphibians. From summer 1988 through late winter 1992, as part of the Stehekin Valley vertebrate inventory, the following numbers of species were detected: 5 amphibians, 8 reptiles, 25 mammals, and 104 birds (Kuntz and Glesne 1993). In general, habitat in the Stehekin Valley is comprised of a combination of upland mixed conifer forest and riparian forest adjacent to the Stehekin River and its side channels. Therefore, wildlife species found in the valley tend to be species associated with those habitats. Unique habitats important to wildlife in the valley include talus slopes, mudflats, wetlands, snag-rich areas, and streams.

Suitable spotted owl habitat in the lower Stehekin Valley exists across the landscape in a linear fashion paralleling the Stehekin River on both sides in the valley bottom. Suitable habitat quickly diminishes as elevation increases along the steep valley walls.

Washington State law (RCW 77.16.120) protects nest trees used by Western Gray Squirrel (WGS). In the Stehekin Valley, Douglas-fir trees that have mistletoe platforms are often used as nesting platforms by WGS. They may also build or use nests made of sticks and leaves or in some cases, cavities are used. Trees larger than 16" dbh, and often in clumps, serve the greatest potential for nesting and foraging.

Removal of vegetation from the fire and maintenance facility projects as described above³ translates to removal of wildlife habitat in the lower Stehekin Valley. At the maintenance facility, this forest is a mid-seral habitat (not mature forest) with high canopy closure and relatively sparse understory. In general, this habitat removal would have long-term localized minor adverse effects on foraging, resting, and breeding habitat for a wide range of common wildlife species that may use this area, including songbirds, tree squirrels (including western gray squirrels), ground squirrels, woodpeckers, raptors, and deer. Demolition of the existing maintenance facility and restoration of approximately two acres of riparian habitat would have long-term benefits by increasing diversity and extent of riparian wildlife habitat, benefiting amphibians and cavity-nesting birds. (for more details see p. 82-83, NPS 2014).

The forest located at the maintenance facility site is not suitable breeding habitat for spotted owls due to its lack of old growth characteristics and high level of human activity, but could provide suitable foraging and dispersal habitat for spotted owls, particularly the pair that nests at McGregor Meadows (near MP 5.5). Spotted owls are known to use highly fragmented habitat for dispersal and foraging. Clearing for the maintenance facility would remove less than one tenth of one percent of spotted owl suitable habitat available in the Stehekin Valley.

3.2.5.1: Environmental Consequences Alternative I: Proposed Action

The Proposed action would result in removal of approximately 1.4 acres of native vegetation including up to forty-three trees and one snag that is 18-inches or greater in diameter at breast height. Removed tree species would include Douglas fir, big leaf maple, and possibly grand fir.

The project involves the removal of 44 trees that exceed 18" dbh, which is the size class typically used for spotted owl nesting. The removal of habitat within the project area reduces canopy cover, connectivity and corridors that connect other spotted owl nesting, foraging and dispersal habitat and increases their susceptibility to predation and competition from invasive barred owls. The project area includes habitat that has historically been used by a reproductive pair of spotted owls. Removal of habitat in proximity to a nest

tree or activity center can increase the probability of site abandonment, reduced fecundity, and compromise other normal behaviors.

Removal of the 43 trees and one snag in the project area diminishes opportunity for WGS nesting. Soil compaction and shrub disturbance also reduces underground fungi production, a major food source for WGS. Conducting the project work outside of the nesting season (March 1-August 31) will minimize disturbance to WGSs that may be nesting within the project area.

Tree removal also diminishes denning habitat for fishers, which have recently been reintroduced into the ecosystem. Currently all fishers in the area are tracked using radiotelemetry, and no females are known to be currently using the project area.

In addition to the effects on spotted owls and WGS, removing habitat disrupts the natural corridor for wildlife movement in the valley fishers, elk, deer, moose, black bear, wolves, and other carnivores (based on sighting data from remote cameras). This is especially true in that the valley where canopy cover and movement are limited along the steep valley walls, forcing animals to use the valley bottom. Natural disturbances such as, landslides and wildland fire play a cumulative role in habitat alteration in the valley as do projects such as the fire and maintenance facilities described above.

3.2.5.2: Environmental Consequences Alternative II: No Action Alternative

The No Action Alternative would have no effect on vegetation beyond nearby natural processes.

Chapter 4 – Consultation and Coordination

4.1: LIST OF PERSONS AND AGENCIES CONSULTED

4.1.1: HISTORY OF PUBLIC INVOLVEMENT

The formal public scoping period for this EA began on December 1, 2020 and extended through January 14, 2021. Five comments were received from individuals and one from a local nonprofit- North Cascades Conservation Council. Additionally, a public meeting via conference call was conducted on December 10, 2020 from 5-7 pm. Five members of the public attended this meeting, with questions from two.

4.1.2: AGENCIES CONSULTED

Endangered Species Act Consultation

The Endangered Species Act of 1973, as amended (16 USC 1531 et seq.) requires all federal agencies to consult with the USFWS to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. The NPS consulted about a road reroute in the same vicinity as this project as part of the larger proposed action during NEPA review of the [Stehekin River Corridor Implementation Plan](#) (NPS 2013). The NPS corresponded with USFWS in May 2020 for this project and it was determined that the Biological Opinion (Reference 13260-2010-F-0036) for the implementation plan EIS is still valid. Therefore, no additional consultation was required.

Section 106 of the National Historic Preservation Act Consultation

The NPS initiated Section 106 consultation with the Confederated Tribes of the Coleville Nation (CCT) and the Yakama Tribe, and the Washington State Historic Preservation Officer (SHPO) on February 14, 2020.

The final report and National Historic Preservation Act Section 106 determination of no historic properties affected was sent to the tribes and SHPO for comment on July 24, 2020. The CCT concurred with this finding July 26, 2020 and the SHPO concurred in their letter dated August 3, 2020, while the Yakama Nation has not commented.

Tribal Consultation

The NPS initiated consultation with the CCT and the Yakama Tribe on February 14, 2020, contacting each tribe three times regarding the project. Neither the CCT nor the Yakama requested formal government-to-government consultation nor did either express concerns regarding the project.

4.1.3: LIST OF PREPARERS

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List of Appendices

Appendix A: Measures to Avoid, Minimize, or Mitigate Impacts

Appendix A: Measures to Avoid, Minimize, or Mitigate Impacts

Land Use

- Clearly identifying the construction limits, to prevent expansion of construction operations into undisturbed areas.
- Minimizing the extent of vegetation removal associated with road construction.

Air Quality

- Spraying water to minimize fugitive dust resulting from roadway construction.
- Covering trucks transporting soils and aggregate to Lake Chelan barge.
- Encouraging contractor employees and National Park Service (NPS) employees to travel in groups to and from the project site, rather than in multiple separate vehicles (pending the living of COVID-19 health-related restrictions).
- Revegetating bare and staging areas as soon as possible (upon final grading or when staging area is no longer in use).
- Encouraging the use of local labor sources and large-volume material delivery to minimize trip generation during construction activity.
- Encouraging use of a biodiesel mix fuel rather than traditional diesel fuel.

Soils

- Locating staging areas where they would minimize new disturbance of area soils and vegetation.
- Minimizing ground disturbance to the extent practicable.
- Minimizing driving over or compacting root-zones.
- Salvaging topsoil and duff from excavated areas for use in re-covering source area or other project areas.
- Windrowing topsoil at a height that would help to preserve soil microorganisms (less than three feet).
- Not leaving excavated soil alongside trees and providing tree protection if needed for specimen trees.
- Reusing excavated materials where possible in the project area.
- Revegetating project areas through native seeding and planting.
- Importing weed-free clean fill.
- Storing imported topsoil and fill in a weed free area and covered by weed cloth to prevent contamination.
- Identifying clearing limits to minimize the amount of vegetation loss.
- Clearing and grubbing only those areas where construction would occur.
- Reusing topsoil from the reroute areas, to the extent practicable, to obliterate and revegetate abandoned road sections.
- Preparing and approving a hazardous spill plan or Spill Prevention, Containment and Control Plan (SPCC), whichever is appropriate, before construction begins.
- Encouraging the use of non-petroleum based hydraulic fluid in heavy equipment.

Vegetation

- Minimizing construction limits and areas to be cleared, where possible.
- Clearly identifying the construction limits, to prevent expansion of construction operations into undisturbed areas.
- Revegetating road reroute clearing areas not occupied by the roadway.
- Retaining specimen trees where possible adjacent to erosion protection sites and along the reroute/realignment areas (as identified by park staff).
- Salvaging plant material, prior to construction, from areas to be disturbed.

- Replanting salvaged plants on reroute side slopes and obliterated areas to accelerate site recovery and to reduce the opportunity for invasive species to establish.
- Restoring staging and other temporarily impacted areas following construction.
- Obliterating and revegetating abandoned road segments and areas disturbed by construction with native plant species (where applicable).
- Keeping fill slopes as steep as possible where fill is proposed to raise the road to minimize the disturbance footprint.

Noxious Weeds

- Only importing freshly exposed subsurface materials.
- Imported topsoil, fill and other construction materials capable of harboring seeds would be weed free, and would include certification if applicable.
- Washing all vehicles prior to barging to Stehekin. This includes all vehicles, but especially those having contact with soil or materials that may contain noxious weed seed prior to working in weed free areas or transporting weed free materials.
- Covering stored soil and rock, as appropriate, to prevent exposure to noxious weed seed.
- Separating contaminated soil from weed free soil and using the contaminated soil for subsurface fill.
- Conducting annual monitoring for potential weed infestation using early detection / rapid response eradication techniques.
- Identifying and controlling exotic plant species infestations prior to construction

Water Resources

- Locating staging and stockpiling areas away from the Stehekin River.
- Delineating staging areas to prevent incremental expansion of the staging area.
- Covering stockpiled fine-grained soil and rock near surface water and if overwintered with a breathable, water repellent fabric, such as silt fence, anchored around the perimeter.
- Identifying the area to be cleared to define extent and clearing only those areas necessary for construction.
- Minimizing the amount of disturbed earth area and the duration of soil exposure to rainfall.
- Minimizing soil disturbance and re-seeding or revegetating disturbed areas as soon as practical.
- Using available topsoil and duff from the reroute areas to rehabilitate (re-create habitat) the obliterated road segments and road shoulders.
- Stabilizing disturbed areas until seeding and/or revegetation takes hold.
- Constructing temporary diversion devices such as swales, trenches, culverts, or drains to divert storm water runoff away from disturbed areas, including exposed slopes.
- Using native duff and topsoil to cover exposed soil as soon as practical.
- Installing protective construction fencing around, adjacent to, or near wetland and/or riparian areas that are to be protected or other erosion control measures to protect water resources in the project area.
- Using vegetable based hydraulic fluid in heavy equipment.
- Using a Storm Water Pollution Prevention Plan (SWPPP) for construction activities to control surface runoff, reduce erosion, and prevent sedimentation from entering water bodies during construction.

Prevention of Fuel Spills

- Developing and implementing a comprehensive spill prevention/response plan that complies with federal and state regulations and addresses all aspects of spill prevention, notification, emergency spill response strategies for spills occurring on land and water, reporting requirements, monitoring requirements, personnel responsibilities, response equipment type and location, and drills and training requirements. Using an oil and hazardous materials spill prevention, control, and countermeasure plan to address hazardous materials storage, spill prevention, and responses.
- Refueling activities would be done at least 100 feet from the river and its tributaries or other surface water.

- Areas where refueling or maintenance of equipment would occur would be identified and have containment devices such as temporary earth berms.
- Absorbent pads would be available to clean up spills.
- Restrictions on the location of fueling sites, requirements for spill containment, and other measures to safeguard aquatic and terrestrial habitat from construction-related contaminants would be identified.

Hazardous Materials

- Refueling vehicles and equipment at least 100 feet from the river and its tributaries or other bodies of water.
- Identifying areas where refueling or maintenance of equipment would occur and providing containment devices, such as temporary earth berms surrounding these areas.
- Ensuring that spill clean-up materials, such as absorbent pads, are present onsite where needed.
- Identifying the locations of fueling sites, requirements for spill containment, and other measures to safeguard aquatic and terrestrial habitat from construction-related contaminants.
- Locating fuel storage tank outside of the floodplain / channel migration zone floodplains and other sensitive areas.

Fish and Wildlife

- Scheduling construction activities with seasonal consideration of wildlife lifecycles to minimize impacts during sensitive periods (e.g., bird nesting and breeding seasons).
- Minimizing the degree of habitat removal (vegetation clearing) by delineating construction limits.
- Limiting the effects of light and noise on wildlife habitat through controls on construction equipment and timing of construction activities, such as limiting construction to daylight hours to the extent practicable.
- At the end of the day covering excavated pits and trenches to prevent animals from being trapped.
- Soil and erosion control best management practices employed on the project will minimize the potential for trapping small animals.
- Using spill prevention measures to prevent inadvertent spills of fuel, oil, hydraulic fluid, antifreeze, and other toxic chemicals that could affect wildlife.
- Discouraging construction personnel at work sites from providing a source of human food to wildlife, avoiding conditioning of wildlife and in human/wildlife conflicts. Title 36, Code of Federal Regulations (CFR), Chapter 1, Section 2.10(d) prohibits anyone from leaving food unattended or stored improperly where it could attract or otherwise be available to wildlife. Title 36, CFR, Chapter 1, Section 2.14(a) prohibits the disposal of refuse in other than refuse receptacles. Title 36, CFR, Chapter 1, Section 2.2(a)(2) prohibits the feeding and molesting of wildlife.
- Maintaining proper food storage, disposing of all food waste and food-related waste promptly, in a bear-resistant receptacle and removing all garbage off-site at the end of each working day.
- Using intake screening devices to draw water from near the surface of fast-moving water habitats to avoid impacts to aquatic organisms during water withdrawal.
- Employing, monitoring, and maintaining erosion control measures at construction locations to minimize sediment inputs to aquatic habitats.

Special Status Species

The following conservation measures and reporting requirements with respect to northern spotted owls would also be implemented as part of the project by NPS Biologists:

- Aligning the road to avoid as many large diameter trees (~30" dbh) and those with nesting features (conifers with upper canopy crotch or mistletoe broom) as possible.
- Complete spotted owl surveys to protocol March 1 - June 30 during years of construction. Surveys

would be completed prior to the start of construction.

- In order to monitor the impacts of implementation of the reasonable and prudent measure, the NPS shall prepare a report describing the progress of the proposed Project, including implementation of the associated terms and conditions and impacts to the spotted owl (50 CFR §402.14[I] [3]). The report, which shall be submitted to the Central Washington Field Office on or before February 1 of each year, shall list and describe:

1. Annual survey results and reproductive status of affected spotted owls.
2. Any observed adverse effects resulting from Project activities, including type, location, and frequency of the event, especially any interaction between spotted owls and their predators and competitors.
3. The details regarding any newly discovered nesting or territorial spotted owl nest sites or activity centers.

- Upon locating a dead, injured, or sick endangered or threatened species specimen, prompt notification must be made to the nearest Service Law Enforcement Office (Special Agent Corky Roberts, Richland, Washington; telephone 509.546.8344) and the Central Washington Field Office (Wenatchee, Washington; telephone 509.665.3508). Care should be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

Visitor and Resident Experience

- Allowing construction delays and one-lane closures to be no longer than 30 minutes per passage through the project (longer delays could be approved in advance).
- Avoiding evening, weekend, and holiday work by requiring approval in advance. Longer construction delays or total road closures would also be approved in advance.
- Night work could be approved by the superintendent.
- Distributing press releases to local media, locating signs in the recreation area, and providing information on the boat to inform visitors about road conditions in the Lower Stehekin Valley during the project.
- Using a public information program to warn of construction related road closures, delays, and road hazards.
- Managing vehicle traffic and contractor hauling of materials, supplies, and equipment within the construction zone to minimize disruptions in visitor traffic.
- Developing a safety plan prior to the initiation of construction to ensure the safety of recreation area visitors, workers, residents, and park staff.
- Minimizing dust during construction on public roadways (by minimizing soil disturbance, spraying water but no chemicals over disturbed soil areas during dry periods and revegetating disturbed soil areas as soon as practical following construction).
- The road would be open for all shuttle bus service, as well as the Rainbow Falls tour.
- Emergency vehicles, hikers and bicyclists would be allowed safe passage through the work areas.

Park Operations

- Providing and maintaining emergency vehicle access through the project area during construction.
- Coordinating work with park liaison to minimize disruption to normal park activities.
- Monitoring construction activities to ensure adherence to mitigation measures.
- Monitoring construction activities to provide recommendations to minimize impacts on park resources.
- Providing emergency vehicle access through the project area during construction. Coordinating work with park staff to reduce disruption to normal activities.
- Informing construction workers about the special sensitivity of park resources and values and regulations.

- Providing orientation about park resources for the contractor(s).
- Encouraging park resource specialists to be involved in inspections and monitoring and providing recommendations during the road rehabilitation.

Inadvertent Discovery Plan

Based on the Inadvertent Discovery Plan prepared for this project (Iverson, 2020) the following protocols will be followed if needed:

Inadvertent Discovery of Cultural Resources Protocol

Prior to commencement of project activities, construction personnel will be prepared for the possibility of encountering prehistoric and/or historic archaeological materials during ground-disturbing activities. A representative of the construction company will be responsible for disseminating the information within this document to construction crews and contacting the NOCA Archaeologist in the event of an inadvertent discovery.

In the event that construction activities associated with the Stehekin Valley Road Reroute Project encounter any cultural materials (e.g., bones, shell, stone tools, beads, ceramics, old bottles, hearths, etc.), including archaeological artifacts, and/or sites, all work in the immediate vicinity will halt and the NPS, DAHP, the affected Native American Tribes, and the NOCA Archaeologist will coordinate the treatment of the materials. Work shall not proceed in the area of discovery until notification to proceed is granted by the NPS.

If potential cultural resources are encountered during construction excavation, the construction company representative shall ensure that the following procedures are followed:

- Secure the location of the discovery immediately by halting all ground-disturbing activity within at least 30 feet (10 meters) of the find;
- Secure all spoils piles and/or trucks that might contain cultural materials from the location;
- Contact the NOCA Archaeologist to report the discovery;
- Record general information concerning the discovery, including the time, date, location, depth, and discovery method of the material.

The NOCA Archaeologist will be responsible for contacting DAHP and the affected Native American Tribes in the event of an inadvertent discovery of cultural resources. The individuals and representatives of these agencies will coordinate an on-site meeting to determine if the discovery represents cultural resource material and, if so, to ascertain the nature of the find. The treatment of the cultural resources will be determined through coordination and consultation with these agencies/individuals at that time.

Inadvertent Discovery of Human Remains Protocol

If human remains are encountered during any phase of the project, a representative of the construction company will immediately notify the NOCA Archaeologist. The NOCA Archaeologist will contact the Chelan County Coroner, the Chelan County Sherriff Department, and an appropriate DAHP representative and the following protocol will be applied:

- The county coroner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic;

- If the county coroner determines the remains are non-forensic, then the DAHP will take jurisdiction over the remains;
- The State Physical Anthropologist will make a determination of whether the remains are Indian or Non-Indian and report that finding to the affected parties;
- The NPS will handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains if there is no federal agency involved.