Frequently Asked Questions

Stehekin River Corridor Implementation Plan

National Park Service
U.S. Department of the Interior

North Cascades National Park Complex
Lake Chelan National Recreation Area

1. WHAT IS THE STEHEKIN RIVER CORRIDOR IMPLEMENTATION PLAN?

In response to record floods in 2003 and 2006, the National Park Service initiated the Stehekin River Corridor Implementation Plan ("Plan") to clarify the management guidance provided by the 1995 General Management Plan for Lake Chelan National Recreation Area. The Plan includes specific management actions that will be implemented to mitigate the risk of flooding within the channel migration zone (CMZ) of the Stehekin River and its adjacent landscape corridor. These actions will reduce the risk of future flood damages by enabling the Stehekin River to utilize its floodplain and meander within its natural channel migration zone over time. These actions will reduce NPS administrative costs, protect the Stehekin Community, sustain opportunities for public enjoyment of Lake Chelan NRA, and maintain motor vehicle access to North Cascades National Park.

Destruction of private cabin and damage to upper Company Creek Road during the 2003 flood in the Lower Stehekin Valley. This structure is located in the channel migration zone of the Stehekin River but not the regulatory floodplain.

2. WHAT MAJOR ACTIONS ARE INCLUDED IN THE PLAN?

Major actions of the Plan include, but are not limited to, the following:

- Relocate a 1.9 mile segment of the Stehekin Valley Road around the flood-prone area of McGregor Meadows;
- Protect the Stehekin Valley Road with erosion management structures at two sites (Frog Island and potentially Wilson Creek) where road relocation is not feasible;
- Maintain existing erosion-protection measures along the Company Creek Road, including the 400-foot-long levee constructed in the 1980s and several bank barbs near the end of the road;
- Maintain grade-control structures at Milepost 7.0 and 9.2 on the Stehekin Valley Road and along the upper Company Creek Road. These structures reduce the risk of channel formation (i.e. channel avulsion) during flooding;
- Install a logjam and new grade-control structure near Boulder Creek and install erosion-protection measures near the river mouth, at Frog Island and at Wilson Creek;
- Stabilize the raveling slope at Milepost 8.0 and retain the road in this location;
- Manipulate log jams in the lower reach of the river in the Lake Chelan backwater zone to reduce the risk of flood damage to the Stehekin Road, and to prevent water quality-related impacts from flood damage to private development (e.g. damage to septic systems) at the head of the lake. Logjam manipulation will be limited to the minimum extent necessary to prevent flood damage;
- Provide technical assistance to private landowners to mitigate the risk of flooding using the Army Corps of Engineers Advance protection measures (see FAQ #8) and erosion control measures such as logjams and bioengineering;
- Construct a new walk-in campground near Rainbow Falls, group campsites at Purple Point Horse Camp, and relocate Bullion Camp (day use will continue at Bullion) to avoid hazard trees;
- Construct a Lower Valley Trail from the Stehekin Landing to High Bridge and provide a trail connection to the Stehekin River Trail via a footbridge over the Stehekin River;
- Construct a raft take-out near the Stehekin River mouth;
- Restore approximately 9.1 acres of riparian and wetland habitat.

Page 6 includes a map of the most significant actions listed above.

3. WHEN WILL THE NPS IMPLEMENT THE PLAN?

The NPS will begin to implement the Stehekin Valley Road Improvement aspects of this plan in fall 2013, though funding may be delayed. Early actions will include acquisition of easements from several private landowners to enable road construction. The NPS will also continue to pursue land exchanges in 2013, based on the guidance provided by the 2012 Land Protection Plan. Public scoping for relocating the maintenance facility, solid waste operation, fire cache and a single family housing unit will begin in spring 2013. NPS staffs will continue to provide technical assistance to private landowners seeking to implement erosion control or advance flood protection measures on their property. Other management actions await additional funding and may take a decade or more to implement.

4. WHAT IS THE LAKE CHELAN BACKWATER ZONE?

The reach of the Stehekin River roughly between Boulder Creek and its confluence with Lake Chelan is referred to as the "Lake Chelan backwater zone." This reach is influenced by changing water levels on Lake Chelan caused by hydropower generation. Chelan Public Utility District showed in a 2000 study that a "backwater effect" occurs when flooding occurs and the level of Lake Chelan is at full pool. This backwater effect can create a "hydraulic dam" and raise the 100-year flood elevation approximately ½ foot in this reach of the river and its adjacent floodplain.

5. WHAT IS THE CHANNEL MIGRATION ZONE (CMZ)?

Rivers are dynamic, especially during flooding when the majority of erosion and deposition occurs. These hydraulic processes cause river channels to change course or "migrate" laterally over time. The zone where river channel migration occurs is called the "Channel Migration Zone." This zone includes the floodplain of a river and adjacent upland areas such as former river terraces that do not typically flood. The highest rates of channel migration generally occur where rivers store gravel and large wood, such as where the Stehekin River Valley widens at McGregor Meadows or meets Lake Chelan. Many rivers in Washington State, including the Stehekin River, have active channel migration zones that include land outside the floodplain and must be considered during flood planning.

6. HOW WILL THE CHANNEL MIGRATION ZONE BE MANAGED UNDER THE PLAN?

Maintaining development within some parts of the channel migration zone (CMZ) along the Stehekin River is risky, costly, and unsustainable. Under this plan, the NPS will relocate sections of the Stehekin Valley Road and various administrative facilities to areas outside the CMZ. Where relocation from the CMZ is not feasible, flood risks will be mitigated using ecologically sensitive erosion protection measures such as rock barbs, engineered logjams, and bioengineering.

7. WHAT IS FLOODPLAIN UTILIZATION?

By avoiding development within the channel migration zone, the plan implements a key concept known as "floodplain utilization." Instead of attempting to control the Stehekin River with costly engineering measures such as dredging, rip-rap, dikes and levees, floodplain utilization will enable floodwaters to spread out across the floodplain, dissipate erosive energy, and reduce flood damage. Floodplain utilization will protect the Stehekin River, conserve taxpayer dollars, sustain public use and enjoyment of Lake Chelan NRA, and maintain motor vehicle access to the Upper Stehekin Valley.

8. HOW WILL WOODY DEBRIS MANAGEMENT POLICIES CHANGE UNDER THIS PLAN?

The NPS will expand management of woody debris to include the Lake Chelan backwater zone and will continue to operate under the guidance provided by the GMP in the immediate vicinity of Harlequin Bridge and public roads. Action will be taken to mitigate flood and erosion damage to the Harlequin Bridge and the Stehekin Valley Road and minimize impacts to water quality from flooding septic fields on private property. Wood will be stockpiled and used by the NPS for erosion control purposes. It will also be provided to property owners for agency-permitted erosion control projects, such as construction of Advance Flood Protection Measures on private land and/or restoration projects within the channel migration zone. Trimming of individual logs within the Stehekin River will continue to be authorized for public safety purposes, but the wood will not be removed from the CMZ.

9. WHAT ARE THE ADVANCE FLOOD PROTECTION MEASURES RECOMMENDED BY THE U.S. ARMY CORPS OF ENGINEERS?

The U.S. Army Corps of Engineers in 2004 evaluated ways to manage the flood risk to private property and public land in the Lower Stehekin Valley. This analysis determined that dredging and structural flood protection measures such as rip rap or levees would be very costly (e.g. dredging would cost $12 million to remove 50,000 yds^3 from a 2km stretch of the river) and damaging to the environment. Instead, the Corps recommended several measures for private landowners to minimize the risk of flood damage, including (1) Flow Deflectors; (2) Ring Dikes; (3) Debris Fences; and (4) Grade Control Structures. Several landowners have already installed some of these measures. The NPS encourages

landowners to consider these measures, and will provide technical assistance and woody debris to help landowners install these measures and protect their property.

10. HOW DOES THIS PLAN ADDRESS EMERGENCY CONDITIONS ASSOCIATED WITH LARGE FLOODS FOR STEHEKIN VALLEY RESIDENTS?

The National Park Service will continue to assist Chelan County during emergency flooding situations and will continue to coordinate with the county to address flooding risks in the valley to the maximum extent possible. NPS staffs will continue to assist with on the ground emergency response such as warnings, evacuations, and sandbagging.

11. HOW WILL ROAD CONSTRUCTION IMPACT VISITORS AND RESIDENTS OF STEHEKIN?

Road construction and paving is anticipated to occur over the summer and fall seasons of 2015 and 2016. Construction delays and one-lane closures will be no longer than 20 minutes. If longer delays or complete road closures are needed, visitors and residents will be notified well in advance. Construction on evenings and nights, weekends, and holidays will be avoided. The NPS will distribute press releases to local media, post signs in the recreation area, and provide information on the ferry to inform visitors and residents about road conditions.

12. WILL THE NPS CONTINUE TO MAINTAIN MOTOR VEHICLE ACCESS TO MCGREGOR MEADOWS AFTER THE STEHEKIN VALLEY ROAD IS REROUTED?

The Stehekin Valley Road will be rerouted around McGregor Meadows between Milepost 5.7 and Milepost 7.5 to reduce the risks and costs of future flood damage. The NPS will construct an access "spur" road from the rerouted Stehekin Valley Road into McGregor Meadows for public and private motor vehicle access to the area. The NPS will also continue to maintain the old Stehekin Valley Road between Milepost 5.7 to the last parcel of private property into McGregor Meadows. When flooding damages the old road and routine repairs are no longer practicable, the old road will be abandoned.

13. WHAT IS THE LAND PROTECTION PLAN?

All units of the National Park System that contain nonfederal land within their authorized boundaries must prepare a Land Protection Plan (LPP). The guiding purpose of an LPP is to ensure the NPS unit is protected consistent with its enabling legislation and the stated purposes for which the unit was created and is administered. The LPP must identify and publicly disclose:

1. What lands or interests in lands would advance park purposes through public ownership;
2. What means of protection are available and appropriate to achieve park purposes as established by Congress;
3. The protection methods and funds that will be sought to protect resources and provide for visitor use and park facility development; and
4. Priorities for acquisition of private land within the unit.

The Stehekin River Corridor Implementation Plan including a revision to the Land Protection Plan, which was last revised in 1995.

14. HOW WILL LAND EXCHANGE PRIORITIES CHANGE UNDER THE 2012 LAND PROTECTION PLAN?

The 2012 Land Protection Plan (LPP) places the highest priority on protecting lands with private development that are in areas most at-risk of flooding, such as McGregor Meadows. This will enable the NPS to work with private landowners who voluntarily approach the NPS and seek to exchange property. The 2012 LPP will continue to emphasize land exchanges, so that property owners can remain part of the Stehekin Community and avoid the flood risk. In exchange, the NPS will be able to use very limited funding to acquire land primarily within the active portion of the channel migration zone that is not suitable for development, but very important for preserving the ecological functions, values, and scenic amenities of Lake Chelan NRA.

15. HOW MUCH LAND WILL BE AVAILABLE FOR LAND EXCHANGES?

Approximately 29.4 acres may be available for exchange. Some lands identified in the 1995 LPP, such as the Lower Field, have been removed from consideration for land exchanges due to resource concerns. Other lands that were previously not considered for exchange have been added because the NPS has determined the impacts of private development can be avoided or mitigated.

16. HOW MUCH MONEY WILL IT COST TO IMPLEMENT THE PLAN?

Implementation of all the actions identified in the plan will cost approximately $10 million. This figure does not include the cost for relocating the maintenance and housing facilities, because the specific details regarding location and design of these facilities have yet to be determined.

17. WHERE CAN I GET MORE INFORMATION?

- Visit the project website and download the plan and supporting documents at parkplanning.nps.gov/SRCIP.
- Contact Dr. Jon Riedel, the Project Manager, (360-854-7330 or jon_riedel@nps.gov) or the Superintendent (360-854-7201 or noca_superintendent@nps.gov) of North Cascades National Park Complex.
- Hard copies of all the planning documents are available for review at the NPS Visitor Center in Stehekin, the Chelan Ranger Station, and park headquarters in Sedro-Woolley.

Major Actions of the Plan

Stehekin River Corridor Implementation Plan EIS