



Dear Friends of the Stehekin Valley,

I am pleased to present this major step in the development of a Stehekin River Corridor Implementation Plan. This plan is focused on response to the effects of the large floods of the past 13 years and the likelihood of continued flooding in the lower valley below High Bridge.

This plan is based on direction given in the 1995 General Management Plan for Lake Chelan National Recreation Area. This plan will articulate steps needed to continue the implementation of the General Management Plan, and provide a revision to the 1995 Land Protection Plan for the N.R.A.

Your assistance in this process is critical. This Newsletter presents the range of alternative concepts and associated action items developed through public meetings in January, public comments received to date, and information provided by the Technical Committee. Though not required by law or policy we believe it is important to provide you with this opportunity to review and provide comment on alternative concepts before we begin to write the Draft Environmental Impact Statement and Plan.

You have several options for providing feedback on the alternative concepts presented in this newsletter. Written comments can be sent to North Cascades NPS Complex Headquarters, or, posted on the park’s planning website at <http://parkplanning.nps.gov/noca>. You are also invited to attend the open houses in Stehekin and Seattle. Please send your comments by September 14, 2008 so that the planning team can benefit from them in the development of alternatives for the Draft EIS/Plan.

Thank you for helping plan for a sustainable future for the Stehekin valley.

Sincerely,

Palmer (Chip) Jenkins
Superintendent, North Cascades National Park Service Complex

You’re Invited to an Open House

- To comment on the proposed alternatives and actions;
- To ask questions about the alternatives and actions;
- To learn more about river dynamics and issues; and
- To contribute your ideas to revision of the Land Protection Plan.

Tuesday, August 26, 2008, 2:00 pm – 8:00 pm
[Stehekin, Washington](#)
Golden West Visitor Center
Stehekin Landing

Wednesday, August 27, 2008, 8:00 am – 2:00 pm
[Stehekin, Washington](#)
Golden West Visitor Center
Stehekin Landing

Thursday, August 28, 2:00 pm – 8:00 pm
[Seattle, Washington](#)
Seattle Mountaineers Fireside Room
300 Third Avenue West, Seattle, Washington

These open house events are designed to allow the public to discuss the range of management alternatives and actions discussed in this newsletter in an informal setting. No formal presentations are planned, but public are invited to ask questions of a small number of park staff involved in the planning process. Large format maps will be provided to facilitate discussion.

Public Comments

Public Comments...2

Information Update

Stehekin River Information Update...2

SRCIP Alternatives and Actions


Lake Chelan LPP Update...3

Range of Alternatives...3

Actions Considered but Rejected...4

What Happens Next?

SRCIP Schedule...8



National Park Service

Contact Us

Please send us your comments:

National Park Service
Lake Chelan National Recreation Area
Stehekin River Corridor Implementation Plan

Contact Information

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810 State Route 20
Sedro-Woolley, WA
98284-1239

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(360) 856-1934

Comments may also be submitted online at this Planning Website:
<http://parkplanning.nps.gov/noca>

Public Comments on the SRCIP

The formal public scoping period for the Stehekin River Corridor Implementation Management Plan Environmental Impact Statement began in January 2008 with distribution of the first newsletter and three public meetings (Stehekin, Wentachee and Seattle). The public scoping period ended on March 31, 2008. Public comments were invited to help frame the scope of the plan, and to identify management issues and impact topics for the Environmental Impact Statement (EIS).

The public meetings were attended by approximately 73 people. Approximately 226 comments were recorded on flip charts at these meetings. Twenty-one public comment letters were also received: 16 from individuals, 3 from non-profit organizations (The Wilderness Society, National Parks Conservation Association, North Cascades Conservation Council, and one from a business (Stehekin River Resort). These public comment letters included approximately 216 comments.

Comments were submitted directly to the park via U.S. mail, email or fax or online at the at the NPS Planning, Environment and Public Comment (PEPC) website (www.parkplanning.nps.gov/NOCA).

The public comments from both the meetings and the letters (442 total comments) were sorted into 26 different categories. For each category, similar comments were combined.

Public concerns included comments regarding the following components of the planning process / proposed plan (each identifies the number of comments received in that category):

Scope of the EIS (17 comments), Purpose and Need (3), Alternatives (6), Vision/Philosophy (37), Alternative Focus (4), Impact Topics, including cumulative, socioeconomic, impairment, land exchange, natural, cultural, visitor experience, natural resources, wild and scenic rivers (44), Large Woody Debris / Sediment (30), Sediment (11), Land Exchange including those about the Lower Field, concern about the need for, availability and priorities (68), Jurisdiction (12), Policy/Regulation Changes (6), Potential Modifications to GMP (5), Fisheries Habitat (10), Floodplain Facilities / Mapping (13), Community Principles / Viability (14), Proposed Projects (26), Erosion Control (8), Road Relocation (27), Emergency Planning / Landowner Interim Actions (23), Agency / Political / Community Involvement and Technical Assistance (9), Recreational Use (4), Water Quality (2), Research / Climate Change Issues (6), Restoration (2), and Funding the SRCIP (8).

The concern statements which frame each of these categories are available online on the PEPC website. Information about the planning process continues to be updated and posted on the park’s website: www.nps.gov/noca and on PEPC. Comments during the review of the preliminary alternatives are also welcome and will be summarized similarly.



Stehekin River Information Update

Continuing analyses of river flooding, gravel movement, and log jams to support the Stehekin River planning effort have produced some important and interesting new results. As noted at public meetings in January 2008, it appears that high flow patterns on the Stehekin River have shifted from being dominated by annual spring snow-melt floods to a fall rain-on-snow dominated pattern (Figure 1). Understanding of this phenomenon led to reanalysis of the magnitude and frequency of large floods on the Stehekin River. The idea was to analyze the size and return interval of spring and fall floods separately, since they occur at different times of year and are controlled by different weather events. Results showed what many expected given that the Stehekin has exceeded what had been identified as the 100-year flood three times in the past 13 years. (See Figure 1.)

Only 16 fall rain-on-snow events were available for analysis, so the results are somewhat tenuous. Adding to the uncertainty, the analysis does not identify trends over the 97-year period of record. Given the apparent upward trend in peak flows shown by the straight line in Figure 1, results shown in Table 1 may underestimate current conditions.

The old method of analyzing the entire spring and fall flood record as one indicated that the 100 year flood was about 21,400 cfs. For the separate spring and fall analyses, a 100 year spring flood would be about 17,000 cfs, whereas a 100-year fall flood would be 33,000 cfs (Table 1). Another way of looking at these results is that the 2003 flood of 25,900 cfs would occur under the new flood regime every 20 years.

The bottom line in all of these numbers is that the information collected at the gauging

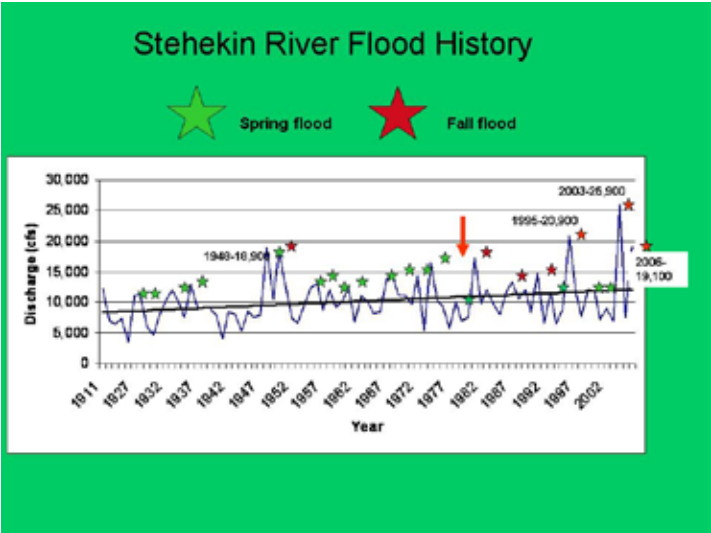


Figure 1. Timing of the annual peak flood on the Stehekin River. Arrow shows shift of annual peak from spring to fall in the late 1970s.

station supports what is intuitively apparent: the Stehekin River is experiencing larger, more frequent floods. Given current climate change forecasts of warmer temperatures, less snowpack, and more extreme weather events, this trend may continue for some time.

Removal of the log jam from the right (southwest) bank overflow channel on the Stehekin River by private parties promised to relieve flooding related to the unnatural manipulation of the level of Lake Chelan. On the positive side, in early May the project was working as planned. Unfortunately, the 12,900 cfs spring flood in May 2008 partially

blocked the side-channel opening with several dozen new logs.

A member of the Stehekin Technical Committee assessed gravel deposits along the Stehekin River within the winter drawdown zone of Lake Chelan. The goal was to evaluate the capability of the river to transport gravel into the lake. Bar material near the Lake Chelan end of the Silver Bay development ranges from sand to coarse cobble gravels as large as 8-10". Gravel size declines quickly 300 ft downstream from this point, to a maximum of 4"-5", and cobble deposits are increasingly localized. Total amount of gravel/cobble export looks small,

relative to sand transport. These changes reflect patterns identified upstream, including a gradual decrease in gravel size, coarser gravel along straighter channel reaches, and gravel transport accounting for only about 17% of total sediment transported by the Stehekin River.

Gravel bars and accumulated wood on the left bank of the main channel below Stehekin River Resort are natural levees that formed during flood events. They focus flow through the flats in the drawdown zone of the lake, thereby maintaining the river’s ability to transport sediment out into the lake.

The pre-dam channel system into the lake appears to be relatively intact and transporting sediment of varying sizes under high flow/low lake conditions. This supports the 2001 Chelan PUD study findings that the lower river channel has not changed significantly in some time. The main river channel on the right bank near Weaver point carries most of the flow, but appears to be perched above river channels to the south toward Silver Bay. Natural levees that formed during flood flows protect Silver Bay developments from the higher velocities in the main channel.

Finally, mapping of a new floodplain for a Flood Insurance Rate Map for Stehekin Valley began in late fall 2007 and will continue when the river flow decreases later this summer. Comparison of last fall’s survey with an early 1980 survey by USGS adjacent to McGregor Meadows indicates that approximately 150,000 yd3 of gravel was deposited by natural processes in the channel in the past 30 years.

Table 1: Comparison of two approaches for determining the size and recurrence interval of floods on the Stehekin River. (Sumioka, personal communication 2008)			
Chance of Occurring in Any Given Year	Discharge (cfs) for combined fall and spring floods (# events = 85)	Discharge (cfs) for spring floods alone (# events = 70)	Discharge (cfs) for fall floods alone (# events = 16)
10 – year (10%)	14,950	13,740	21,360 cfs
20 –year (5%)	17,560	15,100	26,220 cfs
50 – year (2%)	19,490	16,190	29,850 cfs
100 – year (1%)	21,400	17,910	33,490 cfs

Lake Chelan Land Protection Plan Update

One of the most practical long-term approaches to the flooding and erosion problems in the Stehekin Valley would be to remove public and private development from areas repeatedly affected by flooding and threatened by bank erosion. The alternatives and actions listed in the next section provide potential solutions for public facilities. For private land, the Land Protection Plan (LPP) for Lake Chelan National Recreation Area (Lake Chelan) provides a mechanism for the National Park Service to purchase private land, and to exchange private land for specifically identified federal land. As a result, the LPP update would focus on allowing the NPS to acquire land through exchange and purchase to remove private developments threatened by flooding and erosion. Removal of cabins and drain fields from the river’s path protects park resources.

The LPP update is needed to respond to the legal requirement for periodic updates to land protection plans and because of the threats to public and private property posed by the river. The updated LPP would focuses on three main topics:

1) Re-evaluate lands listed for exchange in the 1995 LPP based on changed conditions. Several properties listed as available in the 1995 plan are no longer considered appropriate for exchange because of flooding, lot size, resource sensitivity, or other factors. These include parcels near Stehekin Valley Ranch, the Lower Field, McGregor Meadows, and near the air strip (see map, next page).

2) Re-prioritize private lands as high, medium or low for federal acquisition (as required for LPP updates). The NPS is **not** seeking to acquire all private land in the valley. Rather, the plan is following regulations that dictate what a LPP must contain, including prioritizing land protection actions.

3) Modify the criteria under which lands for exchange or acquisition are identified and prioritized (see below). The following revised criteria and definitions will guide the update to the Land Protection Plan:

Channel Migration Zone – Areas where the Stehekin River has migrated over the last few millennia, including the modern channel, floodplain and low river terraces. Use of this concept for floodplain management is supported by the Technical Committee. This zone does not include the migration zone for tributary streams. For determining acquisition priority, the migration zone of tributaries on alluvial fans would be considered.

Wetlands and Riparian Habitat – Defined by the U.S. Fish and Wildlife Service as “lands transitional between terrestrial and aquatic systems where water is usually at or near the surface or the land is covered by shallow water.” A site is a wetland if it contains one or more of three diagnostic characteristics: vegetation, soil characteristic of wet areas, at least the seasonal presence of water. Riparian habitat includes the diverse vegetation along the active river channel, tributaries, and side channels.

Rare plants and communities – Presence of rare plant species including federal and state threatened, endangered, rare or candidate species; species of special interest, as well as locally sensitive species. Includes plant communities that are unique, rare, or of special interest and/or habitat that is suitable for threatened or endangered species.

Wildlife and Wildlife Habitat – Presence of federal and state threatened, endangered, rare or candidate species, species of special interest, as well as locally sensitive species. May also be habitat that is suitable for threatened or endangered species or which may become suitable through succession, and unique, rare, or high diversity habitat.

Geological Hazards – Areas that include or have a high potential for rockfall, landslides, unstable or steep slopes, debris torrents and snow avalanches.

Cultural Resources- Resources that are likely to be or have been determined to be, or which may become, eligible for listing on the National Register of Historic Places. Includes, but is not limited to, pre- and post-contact archeological sites, historic structures, landscapes, and landscape features.

Public Use Opportunities – Areas that have the potential for recreational, administrative, or other uses that further the public benefits, mission, and operations of Lake Chelan National Recreation Area as identified in a previous planning document or GMP.

Urgency of Threat to Development – Defined by close proximity to the main channel of the Stehekin River, areas that flood frequently, and/or where the bank is eroding at a high rate.

There are two primary differences between the 1995 criteria and the proposed criteria.

First is the use of the channel migration zone instead of the standard floodplain map. Use of the channel migration zone reflects a longer term view of what is safe from the river, in contrast to a hydraulic model-based floodplain determination, which is accurate at only one point in time and which changes based on the occurrence of a large flood. The second major difference is that emphasis is not placed on visual character or values in order to allow some clustering of development. One of the primary considerations for this change is that very little land in the valley is not threatened by the Stehekin River. Some clustering of development is required in order to have a portfolio of possible exchange lands. Clustering offers the added benefit of reducing habitat fragmentation. All of the proposed exchange land is near existing development, and undeveloped areas such as the lower field would no longer be available for exchange.

Use of these differences between the 1995 plan and the current proposal have resulted in a review of all of the private lands acquired by the NPS during the past 40 years to determine if any of those lands might also be considered for exchange given the exacerbated flood conditions. The criteria listed above were used to identify a list of five potential new exchange parcels as shown on the Land Protection Plan: Potential Exchange Properties map. The list of potential exchange lands in the revised plan also includes four parcels carried over from the 1995 LPP that met the revised criteria. The draft revised LPP will likely propose approximately 24 acres for possible exchange (Table 2). In contrast, there are currently about 19 acres available for exchange (the Lower Field has over the last decade been determined to be unsuitable for exchange due to presence of significant resources). In sum, the revised LPP essentially redirects potential exchanges out of the channel migration zone and other sensitive resource sites.

There are currently five preliminary alternatives under consideration for the Stehekin River Corridor Implementation Plan EIS. Except for the “Continue Current Management” (No Action) Alternative, they all include an update to the Lake Chelan Land Protection Plan (LPP) (1995).

Range of Alternatives

There are currently five preliminary alternatives under consideration for the Stehekin River Corridor Implementation Plan EIS. Except for the “Continue Current Management” (No Action) Alternative, they all include an update to the Lake Chelan Land Protection Plan (LPP) (1995).

This newsletter contains a preliminary range of five alternatives for the Stehekin River Corridor Implementation Plan to gather additional public comments on the development of the plan before publication of the Draft Plan/EIS. Although review of preliminary draft alternatives is not required by the National Environmental Policy Act, the additional public review will enable NPS staff to more effectively develop a successful plan.

The preliminary management alternatives range from continuing current management (“No Action” Alternative) to various comprehensive approaches to management of the Stehekin River corridor that are beyond the scope of current management actions. The general concepts of these management alternatives range from allowing floodwater to spread across the entire valley, to attempting to constrain the river and its floodwaters from most developed parts of the valley.

The different floodplain management approaches were used to develop a range of alternatives in an NPS workshop in March. In April and again in late July the technical committee reviewed these alternative concepts and a range of detailed actions for management topics including transportation, recreation, large woody debris, and flooding and erosion on public and private property. The alternatives are based on current development patterns and knowledge of flooding on the Stehekin River.

Alternative 1 (Current Management Action) would continue current management practices under the Lake Chelan N.R.A. General Management Plan (1995) and Land Protection Plan (1995). These plans were written and published before the record floods of 1995, 2003, and 2006, which led to the accumulation of gravel and large wood on the lower Stehekin River on a much larger scale than anticipated. This alternative would also continue implementation of actions identified, but not yet implemented from the Stehekin Valley Road Improvement Project Environmental Assessment (2005).

In **Alternative 2**, the Stehekin River would be allowed to migrate to the degree possible given current land use patterns through its naturally wide channel migration zone across the floor of the lower Stehekin Valley. Ultimately, migration of the river would result in fewer adverse effects on public and private development from the now larger and more frequent floods in this flood-prone watershed. This alternative concept is based on the idea that as floodwaters spill over banks and occupy forested parts of the floodplain, they would slow and cause less

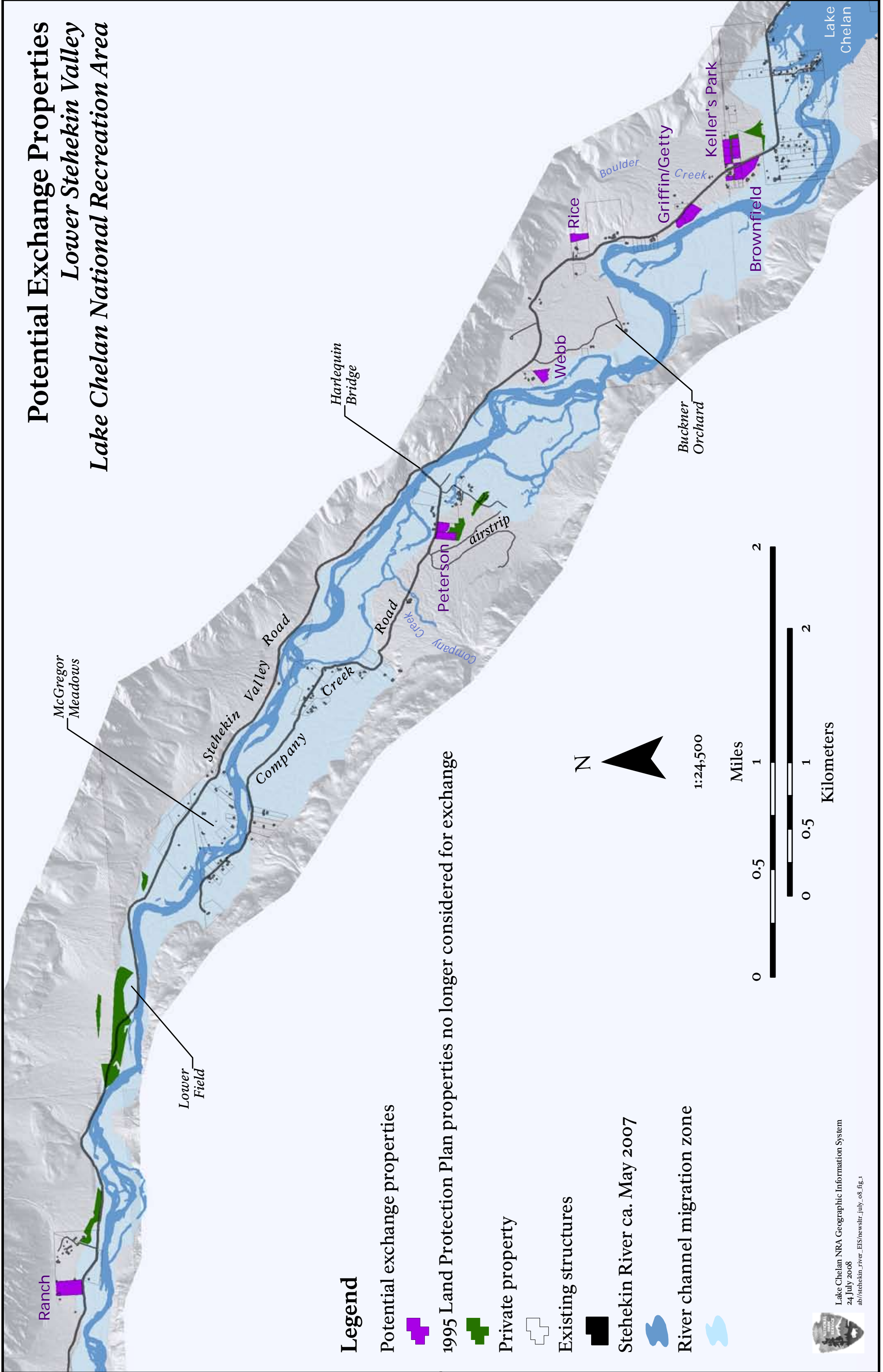
Table 2: Proposed Exchange Lands (see map on p.4)	
Tract-Location (see map)	Number of Acres
08-104 upvalley Stehekin Valley ranch	5.22
06-110 former Peterson property	2 *
06-107 former Webb property	1.33
05-106 former Rice property	1.68
05-115,116,117, 118 former Griffith property	1
05-156 former Getty property	2.79
05-122,129 former Keller's Park	7.2
05-122 former Brownfield	2.61
* note that up to 10 additional acres could be added to this site following completion of development plan for an NPS maintenance and housing facility.	



Potential Exchange Properties

Lower Stehekin Valley

Lake Chelan National Recreation Area



SRCIP Alternatives and Actions

...continued from page 3.

damage to downstream properties. This approach to floodplain management would avoid the construction of additional levees and most bank hardening measures. In this alternative the main valley road would be rerouted around McGregor Meadows.

Alternatives 3 and 4 represent more moderate approaches to river/floodplain management than Alternatives 2 and 5. These approaches attempt to balance impacts from development with allowing natural processes to occur by allowing the Stehekin River to occupy most of its natural channel migration zone. The primary differences between these alternatives are related to the degree to which floodwaters are allowed to spill over banks and occupy forested parts of the floodplain, including differences in proposed road reroutes.

Alternative 3, like Alternative 2, proposes rerouting the Stehekin Valley Road around McGregor Meadows. In alternative 4 the Stehekin Valley Road would be rerouted around McGregor Meadows, but return to the current alignment just down-valley from the Lower Field.

In **Alternative 5**, the Stehekin River would be manipulated at several locations with additional bank hardening measures to prevent it from migrating through sections of its natural channel migration zone. Floodwaters would be restricted from forested parts of the floodplain at developments along Company Creek Road (as now constrained by the existing levee). This alternative primarily focuses on short term approaches to manage known flooding and erosion problems which could cause problems downstream. Given the apparent shift in the 1970s to larger and more frequent floods on the Stehekin River, these approaches may not be sustainable over long periods.

Alternative 5, like the No Action Alternative, keeps the Stehekin Valley Road where it is, but elevates flood-prone sections of the road in McGregor Meadows. Alternative 5 would allow more areas where logjams could be manipulated than Alternatives 3 and 4.

The range of alternatives is presented below by major management actions that would occur rather than by alternative headings. What follows is a general description of the range of actions considered in the preliminary alternatives under the major issues of transportation, public use, management of large woody debris, flood protection, erosion management, and restoration. Each action also identifies which alternatives would support the approach. A matrix version of the alternatives is available at www.parkplanning.nps.gov/noca.

TRANSPORTATION

Passage of three major floods has damaged the road network throughout the valley. To meet the management goal of maintaining vehicle access to Car Wash falls and to the end of Company Creek Road, several alternate actions are contemplated. Alternative actions include elevating the road in flood-prone areas, major road relocation, and streambank stabilization. In all Alterna-

tives, the Stehekin Valley Road would be a 14-ft wide road with turnouts and would be paved from Harlequin Bridge to the Courtney Ranch turnaround at Mile 9.15. To conform to the Lake Chelan GMP (1995), no major relocation of the Company Creek Road is proposed. Where road relocation is proposed, abandoned road segments would eventually be restored to natural conditions. Many of the actions could be combined. For example, the Lower Field and McGregor Meadows reroutes could be linked to create one 1.8 mile long reroute around several problem locations (Alternatives 2 and 3).

Actions Common to All Alternatives:

- Pave and improve drainage along the Stehekin Valley Roadbetween Harlequin Bridge and Mile 9.15;
- Maintain rock barbs and bioengineering at Mile 2.8 on Stehekin Valley Road;
- Stabilize bank with barbs and riparian restoration to maintain Stehekin Valley Road at Mile 3.8 (Frog Island);
- Stabilize streambank at Mile 5.3 near Wilson Creek by lowering 400 ft of road bed, moving into slope 10 ft, and revegetating bank;
- Maintain erosion control near Mile 8.0 on Stehekin Valley;
- Continue to monitor threats to Stehekin Valley Road and maintain existing grade control structures at Mile 9;
- Construct vehicle turnaround and 10-vehicle parking area at Mile 9.15 on Stehekin Valley Road;
- Maintain logjam and bioengineering at Mile 10 on Stehekin Valley Road; and
- Maintain rock barbs and bioengineering along upper Company Creek Road.

Specific potential actions that vary by alternative concept could include the following:

- Elevate the Stehekin Valley Road through McGregor Meadows 1-3 feet for ½ mile (Alternatives 1 and 5);
- Replace rip rap and stabilize streambank along road to Stehekin River Resort with rock barbs and bioengineering (Alternatives 2 and 3);
- Relocate the Stehekin Valley Road around McGregor Meadows and maintain road at lower standard to provide access to private property in McGregor Meadows (Alternatives 2, 3, and 4);
- Maintain grade control structures beneath the vulnerable road segment near Mile 7.0 and stabilize streambanks near Lower Field (Alternative 5); and
- Relocate the Stehekin Valley Road around the Lower Field area (Alternatives 2 and 3).

PUBLIC USE

Recurrent flooding of the group sites in Harlequin Campground and knowledge of problems for rafters disembarking on the lower Stehekin River led to development of this list of potential actions.

Actions common to all Alternatives:

- Maintain existing campsites and move toilets at Harlequin Camp to higher ground;
- Relocate Bullion Camp to across the Stehekin Valley Road to avoid hazard trees; and

- Retain existing raft launch.

Additional actions being contemplated include:

- Build a new group camp along the north bank of lower Company Creek (Alternative 3);
- Build a new group camp near Rainbow Falls (Alternatives 2-5);
- Maintain shooting range in its current location (Alternatives 1 and 4);
- Relocate or close shooting range if road is relocated around the Lower Field (Alternatives 2 and 3);
- Build a new raft launch at Harlequin Bridge (Alternatives 2-5); and
- Build a new raft launch above the Stehekin River Resort (Alternatives 3-5).

MANAGEMENT OF LARGE WOODY DEBRIS

Accumulation of large woody debris during the 2003 and 2006 floods led to the total amount of wood increasing from 130,000 yd3 to more than 360,000 yd3. The potential now exists for a very large logjam to cause serious damage to roads, bridges, and/or other public and private facilities, as well as to become a threat to water quality (from septic system flooding, etc.) if a major developed area were to be flooded. Accumulation of large wood also represents an opportunity to use wood rather than imported rock for erosion and flood management. In all of the actions proposed below, large wood would remain in the river channel migration zone and would not be available as a source of lumber

Current management is to not manipulate log jams, but allows for turning or trimming of channel-spanning logs that threaten river recreationists.

Other actions being contemplated include:

- Allow for the use of wood from the tops of logjams for erosion management under a rigid set of conditions (Alternatives 3-5);
- Allow for manipulation of log jams to protect certain facilities such as Harlequin Bridge, the main valley roads, and densely developed areas (Alternatives 3-5); and



Management of large woody debris is an important consideration for the SRCIP. NPS photo.

- Allow for limited use of large wood for private erosion and flooding management under a rigid set of conditions (Alternatives 3-5).

FLOOD PROTECTION

Passage of the large floods has led to the accumulation of gravel, elevation of the river bed, and more frequent flooding of public facilities and private property. Given the magnitude of the flooding problem at McGregor Meadows and upper Company Creek Road, no large scale flood-control actions are viewed as sustainable. Private landowners within the channel migration zone are responsible for their own flood protection in all alternatives.

Actions common to all Alternatives:

- Continue to provide technical assistance to landowners, including assistance with the effort to keep open the overflow channel within the lake backwater influence zone (the 1948 channel); and
- Encourage private landowners to use advance flood protection measures such as ring dikes and trash fences as proposed by U.S. Army Corps of Engineers in a memo to Stehekin landowners.

Other actions being contemplated include:

- Construct a logjam on left (north) bank of river below Boulder Creek to slow floodwater entering the densely developed area at the river mouth (Alternatives 3-5);.

EROSION MANAGEMENT AND RESTORATION

Land use at several sites along the Stehekin River has led to unnatural rates of bank erosion and threats to facilities and resources. Under all of the alternatives, existing NPS structures on upper Company Creek road and in McGregor Meadows are removed. As other properties with improvements are acquired, buildings, septic tanks and drain-fields would be removed. To restore riparian areas and to slow rates of bank erosion, the following actions are proposed.



SRCIP Alternatives and Actions

...continued from page 5.

Actions common to all Alternatives:

- Continue to provide technical assistance to landowners attempting to keep open the overflow channel within the lake backwater influence zone (as noted above);
- Install rock barbs and bioengineering to protect Weaver Point Campground;
- Place large woody debris and plant native vegetation along the bank of the river in the lower pasture of Buckner Orchard; and
- Place large woody debris and plant native vegetation along the bank of the river along the Lower Field.

INTERPRETATION AND EDUCATION

Under all of the action alternatives the NPS would seek to enhance interpretive and educational programs about the Stehekin River for the general public, local residents, and media. Programs and activity themes would include the unique characteristics of the Stehekin River, the river’s dynamic nature, aquatic resources, and the river’s sensitivity to climate change. River hazards and safety would also be emphasized.

RESEARCH AND MONITORING

In all of the alternatives the NPS will continue to monitor large woody debris, log-jams, and changes in the position of the Stehekin River channel. In all of the action alternatives the NPS would expand research and monitoring programs to assess the effectiveness and impacts from all attempts to constrain the river. The NPS would also continue to support installation of additional stream gauges on Agnes and Bridge

Creeks, in cooperation with Chelan County and other federal agencies. The feasibility of restoring bull trout will be examined, and the NPS will strive to conduct more comprehensive wildlife inventories.

NPS MAINTENANCE AND HOUSING

Due to continued flooding of the NPS maintenance facility and a lack of staff housing, all of the alternatives would construct a new NPS compound adjacent to the north end of the airstrip as called for by the General Management Plan (1995). This compound would include new maintenance buildings, several housing units, and a new fire cache.

ACTIONS CONSIDERED BUT REJECTED

Among the actions not currently within the mix of the five preliminary alternatives are large-scale dredging and levee construction. None of the alternatives presented below propose major river manipulation because the environmental and economic costs associated with building and maintaining levees and gravel dredging are very high, and because no long-term funding sources are available to implement these actions. In addition, these actions are not effective long-term or sustainable solutions because of the changing flood conditions and the constant need for maintenance with the continual deposition of gravel.

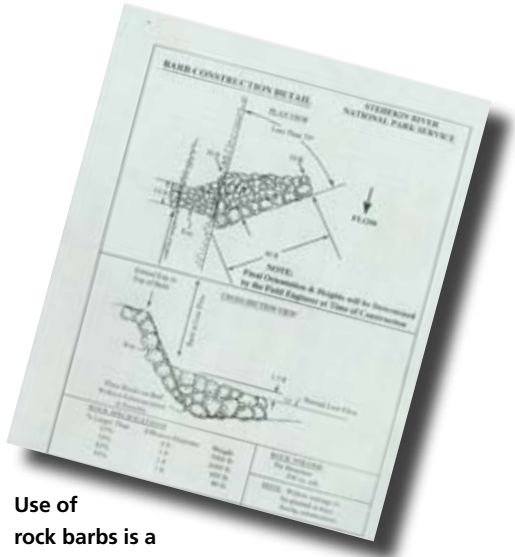
In the McGregor Meadows reach alone, it is estimated that approximately 150,000 yd3 of gravel has been deposited in the last 30 years. Obtaining permits from federal and state agencies responsible for river and shoreline management would be extremely

difficult in the near term, but would become increasingly more difficult over the long term due to other sensitive resources present in the Stehekin River. These actions are generally inconsistent with laws, regulations and policies governing the administration of NPS lands.

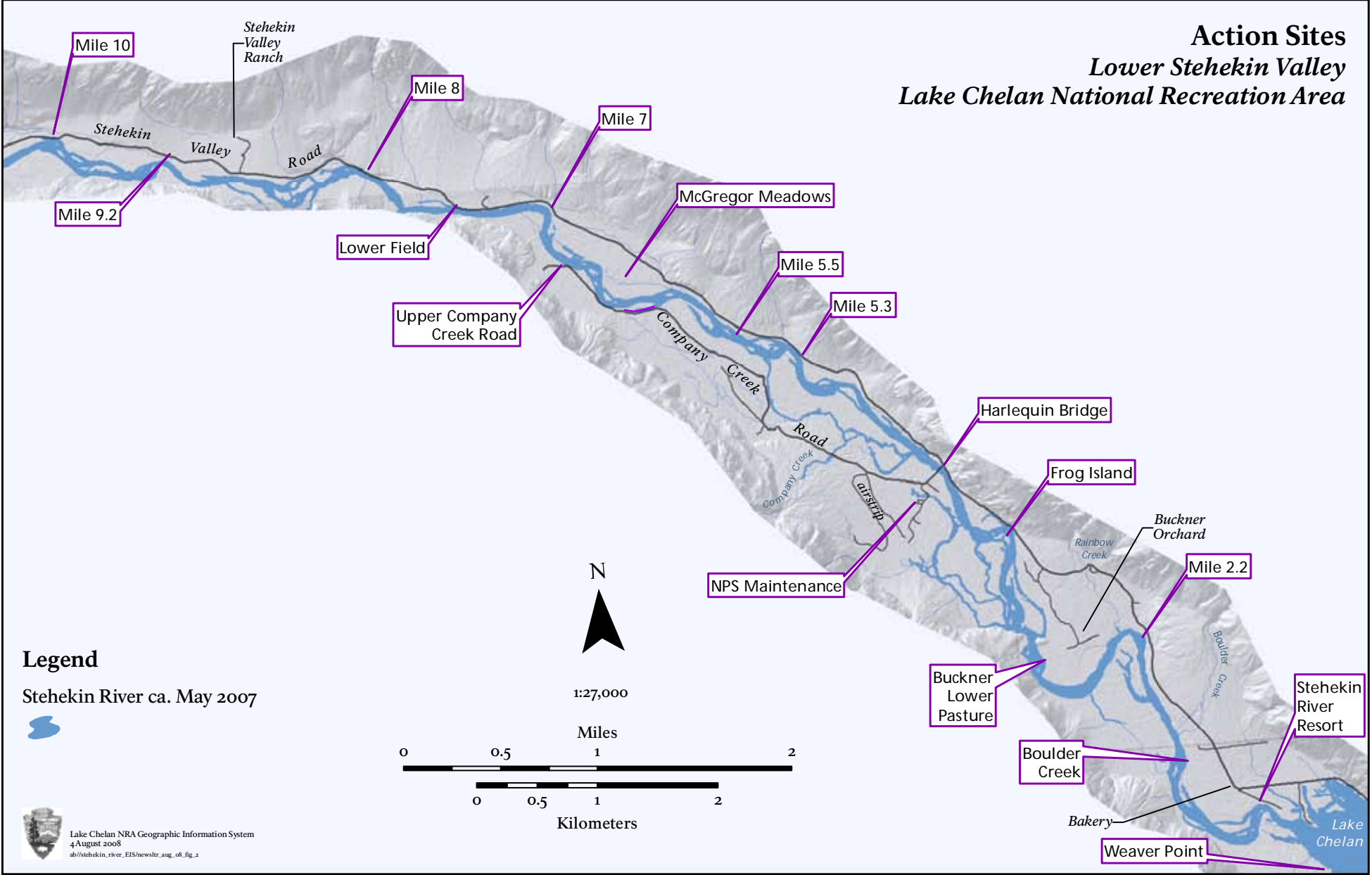
This topic was also discussed in detail by the technical committee, which was unanimous in rejecting the idea that gravel removal could solve flooding and erosion problems. The technical committee consists of professionals from Chelan County, a private geotechnical consultant, and several public agencies (US Fish and Wildlife Service, Chelan PUD, Washington Department of Fish and Wildlife, Washington Department of Ecology, US Army Corps of Engineers, National Park Service).

The idea of re-routing the main valley traffic up the Company Creek road and crossing the river at a new bridge site near the lower field was also examined and rejected. Reasons for rejecting this action included flooding problems at several sites along the route, expense of a 150 ft long single-span bridge, need for a large amount of fill in Lower Field, and problems with the present alignment. Modification of the Company Creek levee and construction of a new, 1-2 ft tall levee below Boulder Creek on the left bank were also considered but rejected. The technical committee strongly advocated elevating cabins and constructing smaller ring dikes around individual structures or small clusters of buildings as more sustainable

approaches. Actions ranging from extension to removal of the Company Creek levee were considered but rejected due to impacts to downstream buildings and infrastructure.



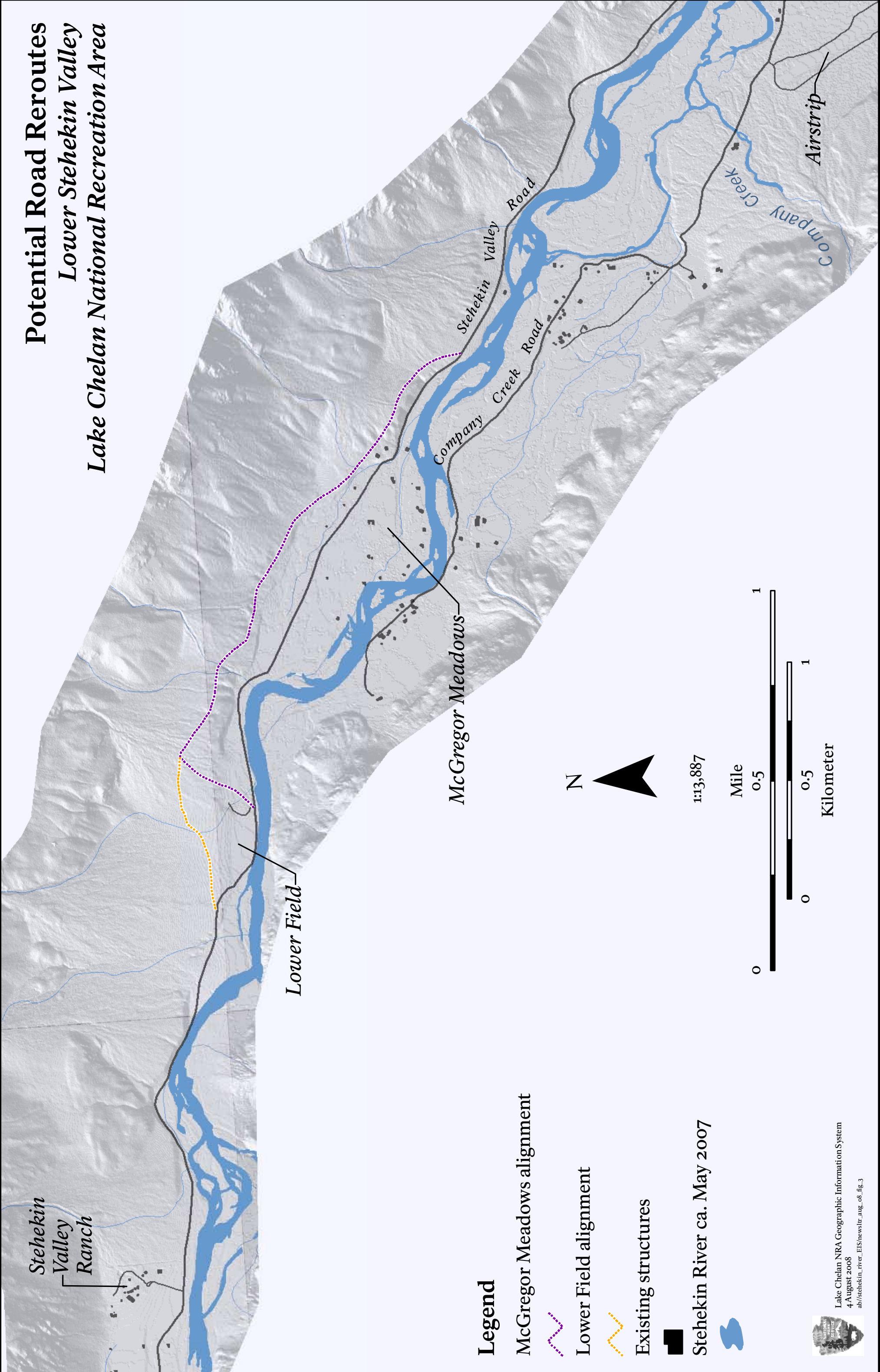
Use of rock barbs is a potential erosion control measure common to all alternatives. In combination with dense planting of native shrubs, rock barbs have proven to be an effective tool for bank stabilization.



Potential Road Reroutes

Lower Stehekin Valley

Lake Chelan National Recreation Area



Legend

McGregor Meadows alignment



Lower Field alignment



Existing structures



Stehekin River ca. May 2007





National Park Service
U.S. Department of the Interior

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the Interior
Permit No. G-83

EXPERIENCE YOUR AMERICA

Flooding along the Stehekin River

Lake Chelan National Recreation Area and North Cascades National Park Service Complex

LAKE CHELAN NATIONAL RECREATION AREA IS ONE MANAGEMENT UNIT WITHIN the North Cascades National Park Service (NPS) Complex. The Stehekin Valley is part of Lake Chelan National Recreation Area (Lake Chelan NRA). The North Cascades NPS Complex is comprised of North Cascades National Park, Ross Lake National Recreation Area, and Lake Chelan NRA, a complementary suite of protected lands, united by a contiguous wilderness overlay. Combining these three distinct units under a single unique administration recognizes their shared purpose of preserving the core of the greater North Cascades ecosystem and wilderness while also advancing their individual purposes.

SRCIP Planning Team

NATIONAL PARK SERVICE STAFF FROM NORTH CASCADES NPS COMPLEX, the NPS Pacific West Regional Office, and the NPS Denver Service Center have been selected for the SRCIP Planning Team. The core team consists of those individuals that will have sustained involvement during the planning process, while the extended team members will be called upon regularly to provide needed information. The core and extended teams will be assisted in data gathering and analysis of information by a Technical Committee, which consists primarily of individuals from other public agencies, but includes a private consultant with experience in Stehekin. Residents of the Stehekin Valley, public individuals and non-profit groups will also contribute to the development of the plan by helping to identify issues and assisting with a review of alternatives and their potential impacts.



Head of Stehekin and Chelan, pre-dam (est. 1920s). NPS photo.

Stehekin River Corridor Implementation Plan Schedule

Planning Steps	Date	Public Involvement Opportunities
Determine the Scope of the Project and What Issues to Address in the Plan Determine issues and concerns, and gather and analyze information, both internally from NPS staff and partners and externally from the Stehekin Community and general public, as well as from non-profit organizations and community groups. Create a preliminary list of resources that would be affected by the proposed plan (impact topics).	January – February 2008	√ Attend a public scoping workshop and provide comments. √ Provide written comments until March 1, 2008. √ Read Public Scoping Summary newsletter and send in your comments. √ Check the project website for detailed information.
Develop and Evaluate Preliminary Alternatives Identify a reasonable range of alternative management actions, conduct a preliminary assessment of their potential impacts, analyze public comments, and select a preferred alternative. *We are on this step	March – September 2008	√ Attend a public alternative open house and provide comments. √ Read Summary of Alternatives newsletter and send in your comments. √ Check the project website for a detailed summary of public scoping comments.
Prepare a Draft Environmental Impact Statement (EIS) Prepare draft plan. Describe scope of the plan, how it is derived from previous planning documents and how it will solve problems through management alternatives. Identify the relative impacts of each alternative. Summarize the differences among alternatives and their impacts. Publish and distribute the plan.	March 2008 – June 2009	√ Read Draft Stehekin River Corridor Implementation Plan / EIS and send in your comments. √ Check the project website for updated information.
Prepare a Final EIS Analyze internal and external (public) comments, revise the draft plan and publish and distribute the Final Environmental Impact Statement (including responses to public comments).	July – September 2009	√ Check the final plan to determine how your comments were addressed.
Prepare a Record of Decision (ROD) Write and facilitate approval of ROD. Discuss differences between draft and final plans in ROD and changes wrought by public comments.	September – October 2009	√ Await final decision. √ Check the project website for updates.
Implement the Approved Plan Complete management actions as allowed by time and funding.	Following waiting period after publication of ROD.	√ Track implementation of the approved plan. √ Check park website for updates.