

VII. Environmental Consequences



A. Impacts to Land Use



Impacts of Alternative A

There would be no major changes in land use associated with the implementation of Alternative A. Ongoing proposals that have not yet been implemented as a result of other plans would continue, including development of a marina at Crescent Bay, expansion of parking and camping at Porcupine and other actions from existing approved plans/environmental assessments.

Impacts of Alternative B

Implementation of Alternative B would result in new facilities in several locations, where existing land is comprised of native and/or degraded non-native vegetation. Proposed locations would comply with recreation area zoning established in the *General Management Plan* (NPS 2000). Facilities, at Moccasin Bay and Cayuse Cove, however, would constitute an amendment to the GMP stipulation regarding additional facilities on the Spokane Arm.

New areas of development in Alternative B would include allowing primitive boat launching near Kamloops Island and Laughbon Landing; walk-in camping along Highway 25 between Jerome Point and Daisy; a deepwater boat launch, day use area and parking at north Rickey Point; new facilities, including a marina, interpretive/education center, restrooms, picnic areas, a designated swim beach and trails at Crescent Bay; and a new restroom upstream of Cayuse Cove on the Spokane Arm. Expanded facilities would include extensions to boat docks and log-booms, expanded parking at Crescent Bay, Keller Ferry, Porcupine Bay, Fort Spokane, Gifford and Lincoln; and a new primitive boat launch/dock at Moccasin Bay and Corkscrew. Combined, these new and expanded facilities would have moderate adverse effects on changing land use from passive to developed recreation, a use that is wholly consistent with the purposes of the recreation area. There would be approximately 7.95 acres of new developed areas and 10.32 acres of expansion. Restoration of approximately 12 acres would contribute long-term minor localized beneficial impacts, primarily at Crescent Bay, with some also at Moccasin Bay (0.8 acres).

Impacts of Alternative C

As in Alternative B, Alternative C would result in new facilities in several locations, where existing land is comprised of native and/or degraded non-native vegetation. The same GMP amendment regarding facilities on the Spokane Arm would also be needed.

New areas of development in Alternative C would include the walk-in camping along Highway 25 between Jerome Point and Daisy and the same new facilities at Crescent Bay as in Alternative B. Compared to Alternative B, there would be fewer expanded facilities in Alternative C, with the same extensions to boat docks and log-booms, and expanded parking only at Crescent Bay, Keller Ferry, Porcupine

Bay, and Gifford, plus the expanded facilities at Moccasin Bay and Corkscrew. As in Alternative B, the combined effects of these changes would be localized and minor to moderate and would change passive recreation areas to developed recreation areas. There would be approximately 4.9 acres of new developed areas and 7.24 acres of expansion. Restoration of approximately 12 acres would contribute long-term minor localized beneficial impacts, primarily at Crescent Bay, with some also at Moccasin Bay (0.8 acres).

Impacts of Alternative D

Alternative D would also result in new facilities where none are now present, including on the Spokane Arm.

New areas of development in Alternative D would include walk-in camping between Jerome Point and Daisy, with an additional walk-in camping area/rest area at Jerome Point; some new facilities at Crescent Bay (although these would be reduced compared to Alternatives B and C with only one developed parking area and outdoor interpretive exhibit panels instead of an interpretive/education center); the deepwater launch, combined with a day use area and additional designated swim beach at Rickey Point; and additional designated group boat-in campgrounds.

Expanded facilities would include not only the boat dock and log-boom extensions related to the proposed additional summer draw down of Lake Roosevelt, but also expansion of docks to accommodate increased visitor use at Spring Canyon, Keller Ferry, Jones Bay, Fort Spokane, Porcupine Bay, Gifford and Evans. Expanded overflow parking lots would include those at Keller Ferry, Porcupine Bay and Fort Spokane, while other new facilities would also include Moccasin Bay and Corkscrew. The combined effects of these changes would be localized and moderate and would change passive recreation areas to developed recreation areas. There would be approximately 4.97 acres of new developed areas and 6.57 acres of expansion. Restoration of approximately 9.27 acres would contribute long-term moderate localized beneficial impacts, primarily at Crescent Bay, with some also at Moccasin Bay (0.8 acres).

Measures to Avoid, Minimize, or Mitigate Impacts

- New areas of development would be the minimum needed to accommodate proposed activities.
- Development footprints would be concentrated, rather than spread out.
- Construction limits



Spring Canyon, circa 1961

- would be clearly delineated to prevent expansion of construction operations into undisturbed areas.

Cumulative Impacts

Over time, land use within and around Lake Roosevelt National Recreation Area has changed. Setting aside the effects of the creation of the dam, areas adjacent to the lake have, over time, been modified to accommodate additional recreational access to the lake. New areas have been developed and previous access areas have been redeveloped, such as Spring Canyon during the 1960s. In addition, there have been slight modifications of the recreation area boundary, such as the inclusion of the Crescent Bay area. These actions have both decreased and increased the amount of open space on public lands surrounding the lake. In addition, there has been ongoing private land use development outside the boundary of the recreation area that has resulted in a dramatically different landscape along this edge.

Alternative A would contribute negligible cumulative effects on land use, while Alternatives B, C, and D would contribute additional localized minor adverse effects on land use by expanding development into new areas and by expanding the development footprints of existing areas. Effects would be similar, but would be greatest in Alternative D, followed by B and C.

Conclusion

Alternative A would have minor adverse effects on land use and negligible cumulative adverse effects from the implementation of existing plans and programs. Alternative B would have localized moderate adverse effects on land use from new and expanded developments in some areas and would contribute minor cumulative effects on land use. Alternative C would have minor to moderate adverse effects on land use and minor cumulative adverse effects. Alternative D would have moderate adverse effects and minor cumulative adverse effects on land use. Alternatives B, C and D would also have long-term localized moderate beneficial effects from restoration at Crescent Bay and Moccasin Point.

B. Impacts to Air Quality



Impacts of Alternative A

Although air quality within the park is generally very good and meets attainment standards for all pollutant criteria measured, ongoing temporary impacts to air quality would continue to occur from existing operations, including from automobile, heavy equipment, and boat emissions, heating of nearby homes and businesses, NPS administrative operations, wildland and prescribed fires and weather conditions, such as temperature inversions. Particulates would continue to be released during windy conditions as the lake level is drawn down and the shoreline dries out and from driving on unpaved roads and parking areas. Minor localized adverse impacts would continue to occur from existing use of the recreation area.

Administrative operations, including operation of automobiles and diesel-powered tools and equipment, such as patrol boats, pump-out barges and other equipment would continue to cause negligible localized air quality impacts. In addition, periodic NPS construction and maintenance projects would also cause negligible to minor localized degradation depending on the project and its duration.

Impacts of Alternative B

In addition to impacts from Alternative A, short-term negligible to moderate localized adverse effects could occur from exhaust emissions and dust during construction activities for minor facilities, such as restrooms, and for major facilities, such as the proposed Crescent Bay development. These would be reduced, where possible, by using water trucks and other best management practices, such as those to minimize dust generation during excavation and to minimize trip generation by contractors and/or NPS maintenance staff by carpooling and other means.

Compared to Alternative A, there would be an increase in gravel overflow parking areas under Alternative B, with new gravel parking lots planned for boat launches at Crescent Bay, Keller Ferry, Porcupine Bay, Fort Spokane, Gifford and Lincoln, there would be additional long-term negligible to minor localized adverse impacts on air quality from additional release of dust from driving over these unpaved surfaces. Additional minor to moderate localized adverse impacts would come from allowing beach fires year-round in designated fire pits, depending on the number of fires at boat-in and other campgrounds and on weather conditions. Negligible adverse effects would be contributed by increasing the number of floating toilets/dump stations, thereby increasing travel time to maintain these.

Negligible to minor long-term beneficial effects would occur from paving of roads and restoration of denuded areas in the Crescent Bay area, while long-term minor beneficial effects would occur from increasing the number of Community Access Point (CAP) facilities, including docks, launches and mooring buoys as well as from establishing new facilities that required residents to drive shorter distances to access Lake Roosevelt facilities (including new boat launches at Rickey Point, Moccasin Bay, Corkscrew, Laughbon Landing, and Kamloops Island and from expanding docks at various locations). These new facilities would help to minimize the need to continue boating up- or down-lake to access other facilities. Similarly negligible beneficial effects could also occur from the implementation of a zone-based boat-in camping permit system, which would confirm camping access instead of visitors having to boat until a free location was found as in Alternative A. For the same reason, these negligible beneficial effects could also occur from the proposed expanded campground reservation system and from extending dock or log-booms so that launches continued to be accessible during draw-downs.

Impacts of Alternative C

Adverse impacts would be similar to Alternative B; however, there would be fewer new overflow parking lots, with four, rather than six new overflow parking lots. This could result in fewer impacts from dust from construction and use of the parking lots, or it could result in future unanticipated impacts from visitors driving around more as they continued to search for available parking spaces. Because no additional floating toilets would be added, there would be no additional need for travel time to pump these out, thus impacts from floating toilet operations would be similar to Alternative A.

Impacts from construction of new facilities would be similar to Alternative B, with many of the same new facilities added, including some new boat-in campsites, Crescent Bay facilities, some new trails and beach access routes, and from changes to existing designated swim areas.

Beneficial effects would also be similar to Alternative B, with a variety of negligible to minor benefits, including those related to new facilities, to expansion of docks and log-booms related to the proposed additional draw down, and to the zone-based boat-in camping permit system; however there could be fewer CAPs since the ones at Laughbon Landing and Kamloops Island would not be used.

Impacts of Alternative D

As in Alternative C, adverse impacts from four new overflow parking areas would be similar to Alternative C, however, instead of an overflow lot at Gifford, there would be one at Lincoln. This could result in fewer impacts from dust from construction and use of the parking lots than in Alternative A, or it could result in future unanticipated impacts from visitors driving around more as they continued to search for available parking spaces.

Impacts from boaters driving long distances searching for camping facilities during high use periods would be the same as in Alternative A, because permit systems proposed in Alternatives B and C would not be implemented, however this would be partially mitigated by the addition of the boat-in campsites and the ability to continue to camp anywhere along the shoreline.

Compared to Alternatives B and C, there would be additional beneficial effects from adding directional signage on the lake to assist boaters in finding needed services, such as toilets and gas; and from expanding docks at areas such as Spring Canyon, Keller Ferry, Jones Bay, Fort Spokane, Porcupine Bay, Gifford, and Evans, as well as minor beneficial and negligible adverse effects from adding more floating toilets.

Measures to Avoid, Minimize, or Mitigate Impacts

- Spraying water over exposed soil, particularly during dry conditions to minimize fugitive dust.
- Covering trucks transporting cut or fill material to reduce or eliminate particle release during transport.
- Encouraging contractor and NPS employees to travel together to and from the project site to the extent possible (rather than in multiple separate vehicles).
- Revegetating bare and staging areas as soon as possible.
- Minimizing the extent of vegetation removal associated with construction activities.
- Encouraging the use of local labor sources and large-volume material delivery to minimize trip generation during construction activity.
- Using propane and solar devices for heating.
- Using low VOC paints, solvents and other chemicals in building construction.
- Restricting idling of construction vehicles and equipment to no longer than 15 minutes when not in use.
- Using biodiesel rather than traditional diesel fuel.
- Have flagger request that non-work vehicles be turned off if delays are longer than 5 minutes to reduce air pollution until traffic flow resumes.

Cumulative Impacts

Over time, human impacts such as the development of roads, businesses and housing have contributed to increasing vehicle travel to obtain goods and services and to access recreational experiences. In Washington, as elsewhere, population increases have resulted in dramatic increases in the number of vehicle miles traveled. In addition, these increases associated with vehicle travel have been coupled with increases in the number of industrial, commercial and other vehicle sources of pollution. With the passage of the federal and state clean air acts, emissions controls have been implemented on stationary and mobile sources of air quality degradation. Washington has been proactive in establishing vehicle emissions standards for urban areas. Over time, these standards have changed and have resulted in moderating the effect of ever increasing population and industry.

In the recreation area, existing adverse impacts to air quality (vehicle traffic, campfires, etc.) would not increase substantially as a result of the proposed actions under the alternatives described herein, nor would there be changes to existing long-term regional beneficial effects such as public transportation. Near Lake Roosevelt National Recreation Area, a large number of vehicle miles are traveled on surrounding roads to access recreation area facilities. In some cases the nearest boat launch or swim beach may be more than an hour's drive from nearby homes. As a result, over time, with the development of more facilities and as the areas surrounding the recreation area boundary have developed, long drives to access the lake have become less common for nearby residents. Because no additional long-term emissions sources would occur from the actions described herein, the contribution of Alternatives B-D to regional long-term cumulative effects would be small (negligible to minor) and would not be detectable. Alternative A contributions would be negligible since it would minimally change existing conditions.

Conclusion

Alternative A would have localized negligible to minor adverse effects on air quality. Alternatives B and C would have short-term localized negligible to moderate adverse effects and negligible to minor long-term beneficial effects on air quality, with fewer moderate adverse effects in Alternative C. Alternative D would also have a series of short-term negligible to moderate adverse effects related to construction, with some additional beneficial effects primarily related to improving signage to facilities from the lake. Alternative A would contribute negligible cumulative adverse effects, while Alternatives B-D would contribute negligible to minor long-term cumulative adverse effects and negligible beneficial effects on air quality. There would be no major adverse effects and no impairment of air quality or air quality related values from the implementation of the alternatives described in this Environmental Assessment.

C. Impacts to Soils and Vegetation



Impacts of Alternative A

There would be ongoing negligible to minor, localized adverse impacts to soils and vegetation from shoreline access trails; land based facilities, such as parking and access roads at community access points and primitive boat launches; overflow parking at high use areas; undesignated shoreline campsites; informal pedestrian access to shoreline areas; limited day use toilet facilities along the shoreline; allowing informal camping anywhere along the shoreline; as well as from ongoing maintenance of existing recreation area facilities, including trails, buildings and roads and native and non-native vegetation removal.

Impacts of Alternative B

In addition to ongoing negligible to minor impacts from existing operations as in Alternative A, Alternative B would have negligible to moderate localized impacts on soils and vegetation.

Additional localized negligible to minor adverse effects would occur from the following activities: controlling native and non-native aquatic vegetation in designated swim beach areas; constructing new designated boat-in campsites; designating additional group campsites; extending boat docks and log booms; permitting additional community access points; and formalizing or consolidating neighborhood beach access trails.

More extensive impacts (as described below) would occur from proposed actions at Crescent Bay, Moccasin Bay, Corkscrew and Rickey Point and from establishing new and overflow parking areas and trails and providing for walk-in camping.

TABLE VII-1: SUMMARY OF IMPACTS FOR NEW DEVELOPMENTS

	Miles of Paved Road	New Paved Surface Area (sq ft)	New Structure Footprint Area (sq ft)	Restored Area (sq ft)
Crescent Bay	0.7	188,800	5,100 (Alts B, C) 3,100 (Alt D)	485,900 (Alts B, C) 403,603 (Alt D)
Moccasin Bay	0.15	33,500	100	3,300
Rickey Point	0.5	145,250 (+ 7,500 boat launch)	175	n/a
Corkscrew	0.1 (unpaved)	30,500	100	n/a

CRESCENT BAY

There would be minor to moderate localized impacts on soils and vegetation from constructing and paving roads and constructing facilities (including formalizing the existing parking area; constructing an overflow parking area, education/interpretive center, outdoor amphitheater, restrooms, picnic shelter, kayak/canoe launch, fishing pier and campground) within the Crescent Bay development. Overall impacts on soils in the Crescent Bay area would be minor because this area has been heavily disturbed by dam construction and other activities and is largely comprised of non-native fill material and plants. Approximately 15 to 25 acres of fill with mostly non-native vegetation, interspersed with pockets of native shrub-steppe and other native vegetation are located at the Crescent Bay area. Another approximately 7.6 acres of this area currently consists of roads and parking areas currently used informally to access Crescent Bay Lake, an informal swim beach, and formally to access the existing boat launch. The education/interpretive center would occupy approximately 2,000 square feet, while the swim beach and campground area restrooms would each be about 100 square feet and the amphitheater would be about 3,800 square feet. Small (21,500 square-foot) parking areas would be located near the swim beach/day use picnic area, canoe/kayak launch, and education interpretive center. Approximately 20 drive-in campsites along a loop road would be constructed.

Among the vegetation that would be affected at Crescent Bay would be a variety of annual and perennial grasses, including needlegrass, bluegrass and wheatgrass; herbs such as arrowleaf balsamroot, phlox, and lupine; shrubs such as sagebrush, bitterbrush, rabbitbrush, purple sage and serviceberry; as well as a variety of non-native trees.

MOCCASIN BAY

There would be minor to moderate localized adverse impacts on soils and vegetation from constructing a 800-foot long road and boat launch, as well as a small parking area. Minor beneficial impacts would occur from restoration of the area now containing access to the damaged boat docks/boat access. Approximately 0.1 acres of existing annual and perennial grasses, willows and other vegetation would be affected for the boat launch, while 0.77 acres (including the removal of various shrubs, forbs and grasses and three trees) would be affected for the parking area.

CORKSCREW

There would be minor to moderate localized adverse impacts on soils and vegetation from improving a short (100-foot ingress road, constructing a turnaround, and improving the short egress road in this area, as well as from delineating a small parking area. Approximately 0.7 acres would be affected.

RICKEY POINT

There would be minor to moderate localized adverse impacts on soils and vegetation from constructing a new deepwater boat launch, parking area, day use/picnic area, and restroom near Rickey Point. Approximately 3.05 acres of existing low lying annual and perennial grasses and forbs with sporadic shrubs would be affected. Among the vegetation that would be affected at Rickey Point would be Ponderosa pine forest and open grasslands with a mix of native and non-native species, including willows, alders and apple trees.

OVERFLOW PARKING LOTS

The six overflow parking lots proposed in Alternative B for Crescent Bay, Keller Ferry, Porcupine Bay, Fort Spokane, Gifford and Lincoln would have minor to moderate localized adverse effects on soils and vegetation from the removal of a variety of trees, shrubs, and forbs to construct the parking lots and from compacting soil and fill with a gravel surface (see Table VII-2: New and Overflow Parking Lots). Affected vegetation and area size is identified in the table below.

WALK-IN CAMPING

Vegetation and soils would be disturbed to create the walk-in campground (approximately 12 sites with a short (0.4 mile) access trail and a small parking area (10,000 square feet) between Jerome Point and Daisy. This walk-in camp area would comprise an area of approximately 0.55 acres and is currently comprised of mixed Ponderosa pine and grasslands.

TRAILS

Minor to moderate, localized adverse effects on soils and vegetation would also occur from the construction of trails, including the shoreline trail between Crescent Bay and Spring Canyon (approximately 3.75 miles) and Crescent Bay and Grand Coulee (approximately 0.5 miles to the interpretive panels or 1.0 mile to the swim beach), from Bradbury Beach to Rickey Point (approximately 3.5 miles), from Kettle River Campground to Napoleon Bridge (approximately 1.85 miles) and for the interpretive overlook (0.15 miles) and loop trails at Crescent Bay (approximately 1.5 miles for a short loop and 3.0 miles for a longer loop). Negligible vegetation impacts would occur from formalizing trails within the shrub-steppe hillside at Crescent Bay (approximately 2.5 miles). Linking other recreation sites by trail would also have minor to moderate localized impacts on soils and vegetation. These trails pass through the following vegetation communities: shrub-steppe, non-native grassland, and Ponderosa pine forest.

TABLE VII-2: NEW AND OVERFLOW PARKING LOTS

Parking Lot	General Description	Vegetation	# Cars # Boat Trailers	Size of Proposed Parking Area
Crescent Bay Overflow (Alt B)	New overflow parking area.	Disturbed shrub-steppe	100 boat trailer	83,500 sq ft 1.92 acres
Crescent Bay Parking (Alt B, C, D)	Install paved parking area for boat launch and marina	Disturbed shrub-steppe and existing crushed gravel	50 car 100 boat trailer	108,000 sq ft 2.48 acres
Keller Ferry Overflow (Alt B, C, D)	New parking area adjacent to existing parking lot; extend existing parking lot 40 ft south; realign existing intersection of the main road, existing boat launch parking lot, campground road and concession road	Shrub-steppe	10 car 84 boat trailer	90,320 sq ft 2.07 acres
Porcupine Bay Overflow (Alt B, C, D)	New parking area southwest of the existing parking lot. Use existing gravel service road for access; requires thinning within the wooded area	Ponderosa pine forest	30 boat trailer	40,000 sq ft 0.85 acres
Lincoln Overflow (Alt B)	Private gravel lot was acquired by recreation area to be used as overflow. No new development	N/A	40 boat trailer	36,000 sq ft 0.83 acres
Gifford Overflow (Alt B, C)	New parking area to the northeast of the existing parking area	Ponderosa pine forest	40 boat trailer	43,560 sq ft 1.00 acre
Fort Spokane Overflow (Alt B, D)	New parking area and one-way road; relocate fee station; widen launch ramp	Disturbed roadside grasses with mix ponderosa pine and shrub steppe	80 boat trailer	98,010 sq ft 2.25 acres
Rickey Point (Alt B,C, D)	New deep water launch, parking and day-use area	Mix ponderosa pine and shrub steppe	40 day use 110 boat trailer	133,000 sq ft 3.05 acres
Moccasin Bay (Alt B, C, D)	New launch with parking	Mix ponderosa pine and shrub steppe	3 car 10 boat trailer	33,500 sq ft 0.77 acres
Corkscrew (Alt B, C, D)	New launch with parking	Ponderosa pine forest	8 boat trailer	30,500 sq ft 0.70 acres

Note: Most overflow parking areas would include an added base course and pervious crushed gravel surface with concrete bumper stops to orient vehicles.

Minor to moderate, localized, long-term beneficial impacts would occur from removing non-public constructed trails; from restoring the paved road and hillside near the entrance to Crescent Bay, and the steep bluff encircling the bay below and from restoration in the vicinity of the interpretive trail. Approximately 11.2 acres throughout the site would be restored to a native shrub-steppe community. Other restoration actions at Crescent Bay would have long-term minor to moderate beneficial impacts from removal of fill with intermittent chunks of concrete and other debris from long-time impacts at this site and replacement with topsoil and native vegetation. Restoration associated with the Moccasin Bay # Rickey Point developments would also provide long-term minor beneficial effects. Negligible beneficial effects would occur from increasing public education about native and non-native invasive weeds and from using volunteer work parties to control invasive weeds, from expansion of the Tread Lightly® program as well as from continuing interpretive programming for school children regarding lake ecology other key park resources.

Impacts of Alternative C

Impacts of Alternative C would be similar to Alternative B. For actions at Crescent Bay, Moccasin Bay, Corkscrew, and walk-in camping impacts would be the same as Alternative B, including negligible to moderate adverse effects and localized long-term beneficial effects from restoration. With no new facilities at Rickey Point, overall impacts affecting new areas would be reduced.

Other negligible to minor adverse impacts would also be similar, including for controlling native and non-native aquatic vegetation in designated swim beach areas; constructing new designated boat-in campsites; designating additional group campsites; extending boat docks and log booms; and from permitting additional community access points. Encouraging linked public trail connects to non-adjacent communities would also result in some negligible impacts (primarily from increased use of recreation area trails).

OVERFLOW PARKING LOTS

Rather than six overflow parking lots, as in Alternative B, there would be four in Alternative C (Crescent Bay, Keller Ferry, Porcupine Bay and Gifford) that would have minor to moderate localized adverse effects on soils and vegetation from the removal of a variety of trees, shrubs, and forbs to construct the parking lots and from compacting soil and fill with a gravel surface (see Table VII-2: New and Overflow Parking Lots).

TRAILS

Alternative C would have fewer minor to moderate, localized adverse effects on soils and vegetation from the construction of trails compared to Alternative B. As in Alternative B, negligible vegetation impacts would occur from formalizing trails within the shrub-steppe hillside at Crescent Bay (approximately one mile). While the shoreline trail between Crescent Bay and Spring Canyon (approximately 3.75 miles) and Crescent Bay and Grand Coulee (approximately 0.5 miles), and the interpretive overlook (approximately 0.15 miles) and loop trails at Crescent Bay (approximately 1.5 miles/3.0 miles) would be constructed, there would be no trails from Bradbury Beach to Rickey Point or from Kettle River Campground to Napoleon Bridge. Instead, new non-motorized multiple use trails would be encouraged, such as a trail from Kettle Falls to Colville. As a result, there would be some impacts within the recreation area and some impacts outside of it.

Negligible to moderate beneficial impacts associated with Crescent Bay, Moccasin Bay and restoration would be the same as in Alternative B. Other negligible beneficial effects would also be the same as Alternative B.

Impacts of Alternative D

Although Alternative D impacts to soils and vegetation would be similar to Alternatives B and C, Alternative D would establish some new facilities, including at Jerome Point and would likely have more formal beach access trails from nearby communities and a joint visitor center. Alternative D would also have fewer developed facilities at Crescent Bay (without an education/interpretive center, campground, and overflow parking area) but with a dog-loop trail through the shrub-steppe hillside (approximately 2.5 miles). Additional negligible to minor impacts could occur from expanding docks to accommodate increases in visitor use, including at Spring Canyon, Keller Ferry, Jones Bay, Fort Spokane, Porcupine Bay, Hunters and Evans.

JEROME POINT

There would be minor to moderate localized adverse impacts on soils and vegetation from developing a formal walk-in campground and day use/rest area facilities at Jerome Point in addition to the walk-in camping between Jerome Point and Daisy in Alternatives B and C. Approximately 12 walk-in sites within existing and enhanced vegetation would be developed in an area comprising approximately 0.55 acres. The rest area would comprise an additional 0.25 acres.

RELOCATING SWIM AREAS

There would be minor to moderate localized adverse impacts on soils and vegetation from relocating the Kettle Falls swim area to north Rickey Point and from relocating the Marcus Island swim area downstream.

CONSTRUCTING BEACH ACCESS TRAILS

Because many of the new trails would use existing disturbed pathways, there would be limited (minor) adverse impacts from establishing beach access trails at regular intervals throughout the recreation area.

JOINT VISITOR CENTER

Minor to moderate adverse impacts on soils and vegetation could occur from establishing a joint visitor center, depending on how large it was and where it was located. This action would likely require additional environmental analysis once a location is identified and specific plans developed.

Measures to Avoid, Minimize, or Mitigate Impacts

SOILS

- Locating staging areas where they will minimize new disturbance of area soils and vegetation.
- Minimizing ground disturbance to the extent possible.
- Avoiding precipitation times during construction.
- Minimizing driving over or compacting root-zones and using mats or plywood to minimize soil compaction impacts in sensitive areas.
- Salvaging topsoil from excavated areas for use in re-covering source area or other project areas.
- Not piling excavated soil alongside trees to remain, and providing tree protection for trees to remain.
- Windrowing topsoil at a height that will help to preserve soil microorganisms (less than three feet).
- Reusing (rather than removing) excavated materials from the project area.
- Revegetating project areas through native seeding and/or planting.
- Importing weed-free clean fill and topsoil.
- Delineating clearing limits to minimize the amount of vegetation loss.
- Clearing and grubbing only those areas where construction would occur.
- Installing silt fencing or other erosion control methods, to prevent loss of native soil.

VEGETATION

- Driving only on established roads and trails away from weed infested areas.
- Removing seeds from vehicles and equipment.
- Not driving recreation vessels through Eurasian water milfoil mats.
- Preventing the spread of Eurasian water milfoil by removing plant fragments from boat props, trailers, fishing lines, etc.
- Salvaging native plant material prior to construction and re-planting it afterwards.

Cumulative Impacts

Combined, past actions have had moderate, long-term localized adverse impacts on soils and vegetation due to an increase in the amount of impervious surface, decreased infiltration, soil compaction, loss of soil moisture and loss of organic soil horizons. These effects are spread throughout the recreation area. Ongoing effects from construction of the dam continue to occur, including from increased soil erosion from fluctuating water levels, lakeside instability, and windblown erosion during draw downs, as well as from an increase in water availability in new areas. Adverse impacts to soils and vegetation as a result of other past and ongoing actions include compaction, soil mixing, and soil and vegetation loss from removal and erosion, from development and concentrated visitor use in the recreation area, as well as from areas where soils have been disturbed and revegetation has not occurred naturally or been undertaken by the recreation area. There has been an overall decrease in soil infiltration, where hardening of surfaces (roads, walkways, buildings) has occurred. Revegetation and other restoration projects have contributed both minor beneficial and negligible adverse impacts. Compared to these recreation area-wide impacts, Alternative A would contribute additional negligible cumulative impacts on soils, while Alternatives B, C and D would contribute additional negligible to minor cumulative adverse impacts and long-term negligible to minor beneficial effects from restoration.

Conclusion

Alternative A would have ongoing negligible to minor adverse impacts on soils and vegetation and negligible cumulative adverse effects. Alternatives B, C and D would include most impacts from ongoing operations in Alternative A, but would have additional short- and long-term negligible to moderate adverse impacts on soils and vegetation and long-term moderate localized beneficial effects on vegetation and would contribute negligible to minor cumulative adverse and beneficial impacts. Impacts on soils and vegetation would likely be greatest (but still negligible to moderate) under Alternative D, followed by Alternative B and Alternative C. Alternative A would contribute additional negligible cumulative impacts on soils, while Alternatives B, C and D would contribute additional negligible to minor cumulative adverse impacts and long-term localized minor to moderate beneficial effects from restoration. There would be no major adverse effects and no impairment of soils and vegetation or their values from the implementation of the alternatives described in this Environmental Assessment.

D. Impacts to Water Resources (Water Quality)



Impacts of Alternative A

Marinas, campgrounds and other large developments along the reservoir can potentially impact water quality. Sanitary facilities and boat fuel and cleaning solvents at marinas are of particular concern (Riedel 1997:63). Nine sites within the recreation area still have pit toilets, while others have vault toilets and 16 sites contain running water. As a result, there would be ongoing impacts from the presence of these facilities on Lake Roosevelt. Where new marinas were permitted, such as the one at Crescent Bay, operations would need to adhere to management practices that would minimize the release of paints and solvents by providing boat cleaning facilities with state-of-the-art water treatment (similar to those provided for commercial car washes).

Ongoing water quality impacts, including the release of unspent fuel from boats and personal watercraft would also continue and would likely increase over time until better technology results in the reduction of these contaminants during boat and PWC operation. Although several reports (1980 and 2000 GMPs, and Water Resources Scoping Report (Riedel 1997)), have recommended water quality monitoring programs for human health at Lake Roosevelt, water quality monitoring has been conducted only sporadically. For awhile, it was conducted by the Washington State Department of Ecology (under Memoranda of Agreements with the NPS, counties, and USFS). This lack of consistent water quality monitoring would likely continue under Alternative A. Because there would be ongoing unknown impacts to water quality from ongoing operations, because new facilities would be added or replaced intermittently as needed, and because of potential impacts from the new marina at Crescent Bay, overall effects on water quality under Alternative A would likely continue to be minor to moderate and localized.

Impacts of Alternative B

Existing minor to moderate adverse impacts to water quality in Alternative A would mostly continue in Alternative B. Impacts would be similar to Alternative A, however, all new designated facilities, such as the drive-in and boat-in campgrounds would be required to have self-contained toilet facilities, rather than pit toilets thus reducing the potential to contribute water quality impacts. In addition, under Alternative B, day use boaters would be required (in addition to overnight boaters) to have portable self-contained toilets on board to minimize human waste, deposited in an unsanitary manner along the Lake Roosevelt shoreline. This requirement would result in long-term minor to moderate localized beneficial effects regarding potential impacts from human waste on Lake Roosevelt water quality.

Additional potential beneficial effects on water quality would occur from relocating and increasing the number of boater accessible toilets in Alternative B, including changing the location of the Kettle Falls floating toilet and adding vault toilets at Cayuse Cove and Corkscrew as well as a number of these associated with three new designated boat-in campgrounds. Other actions in this alternative related to improvements in the disposition of human waste would include the provision of waste bags at boat launches and a rebate program for returning these. The boat-in camping permit system would likely also reap negligible long-term beneficial effects from better understanding of park rules and regulations.

Long-term beneficial effects on water quality could also occur from the coordinated water quality sampling that would be conducted in cooperation with the tribes, other agencies and park partners. Such a monitoring program could lead to preventative closure of affected beach areas, investigation into poor water quality conditions at shoreline recreation sites, and better overall knowledge on the part of park managers under the 5-party agreement regarding how best to improve water quality in Lake Roosevelt related to human recreational use.

Impacts of Alternative C

Impacts from Alternative C would be similar to Alternative B, with long-term minor to moderate localized adverse effects from ongoing operations and from new pavement and marina runoff, however, there would be fewer long-term beneficial impacts because some of the provisions in Alternative B would not be implemented in Alternative C. Among those actions that would not occur in Alternative C would be the toilet at Cayuse Cove and the bag dispenser/rebate program. Therefore overall effects in Alternative C would continue to be minor and beneficial but would be less than Alternative B.

Impacts of Alternative D

Similar to Alternative C, Alternative D would also not contain the toilet at Cayuse Cove or the bag dispenser/rebate program. Alternative D would also not contain the boat-in camping permit system. As a result, the beneficial impacts in Alternative D would be fewest compared to other action alternatives but would improve conditions over Alternative A from the requirement for day use boaters to carry portable toilets and from better communication of recreation area rules and regulations. Therefore, Alternative D, like Alternatives B and C, would continue to have existing long-term minor to moderate adverse impacts from existing operations; however as in other alternatives these would be partially improved by actions in this alternative.

Measures to Avoid, Minimize, or Mitigate Impacts

- Establishing a long-term repeatable water quality monitoring program to detect undesirable effects on water quality.
- Using the water quality monitoring program to mitigate detectable adverse effects on water quality.
- Increasing the number of toilets within the recreation area.
- Implementing the provision to require day use as well as overnight boaters to carry portable toilets.
- Educating recreation area visitors about potential impacts to water quality from improperly disposed of human waste.
- Continuing to monitor study results from the industrial plant contamination on the Canadian border to implement any future recommendations.
- Adding runoff barriers to paved parking areas where possible to reduce contamination from petroleum products .
- Gradually incorporating new boating technology to reduce unspent fuel contamination in the park's administrative operations fleet.
- Considering a requirement for marinas to have self-contained wash-bays to prevent pollution runoff contamination within the lake.
- Delineating staging areas away from the lake and marking them to prevent incremental expansion.
- Covering stockpiled soil and rock throughout the duration of the project with a breathable, water repellent fabric anchored around the perimeter to minimize sedimentation.
- 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.
- Retaining silt fencing in disturbed areas until stabilization (by reseeding or revegetation).
- 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 and biodiesel in heavy equipment, when possible.

- Paving (creation of impervious surface) would also be minimized.
- Requiring and approving an Oil and Hazardous Materials Spill Prevention, Control, and Countermeasure Plan to address hazardous materials storage, spill prevention and response before construction begins.

Cumulative Impacts

Past actions occurring in the recreation area and surrounding Lake Roosevelt have affected water quality. These actions include road construction, industrial releases, and recreational use. Visitor use and facilities in the recreation area contribute to sediments and pollutants, including oil and other contaminants from motor vehicles as well as litter that can enter drainages and affect water quality. Some restoration and development projects (e.g., addition of new visitor service facilities, restoration of old roads and campgrounds or building sites) would continue to occur within the recreation area and would contribute both beneficial and adverse impacts to water quality. Given the localized nature of these actions, overall effects on recreation area waters would generally be limited to short-term construction impacts coupled with long-term beneficial impacts from actions that preserve water quality such as properly disposing of human waste and refuse. Non-human factors, such as natural erosion of exposed soils can also have primarily short-term effects on water quality. Alternatives A–D would contribute additional short- and long-term negligible cumulative adverse effects on water quality from construction and from location of the marina as well as from ongoing operations. Alternatives B-D would also contribute long-term negligible beneficial effects.

Conclusion

Alternative A would likely continue to have short- and long-term, localized, minor to moderate adverse effects on water quality. Alternatives B-D would have short- and long-term localized minor adverse effects and long-term negligible to minor beneficial effects on water quality. Alternatives A-D would contribute additional short- and long-term negligible cumulative adverse effects on water quality from construction and from location of the marina as well as from ongoing operations. Alternatives B-D would also contribute long-term negligible beneficial effects. There would be no major adverse effects and no impairment to water quality or water quality related values from the implementation of the alternatives described in this Environmental Assessment.

E. Impacts to Wildlife



Impacts of Alternative A

Ongoing negligible to minor adverse impacts to wildlife would continue to occur, including noise and activity associated with administrative operations such as boat and road patrols, cleaning of facilities, wildland fire operations, and visitor contacts and interpretive programs. Resource management activities, such as removal of native and non-native aquatic vegetation in limited amounts and areas, would continue to have both negligible to minor beneficial and adverse impacts on wildlife.

Impacts of Alternative B

There would be above ambient noise, dust and activity during construction of facilities which could affect the use of surrounding habitats by wildlife. Much of the construction would also likely coincide with the peak visitor use season, when some of the heaviest visitor use and traffic occurs. The noise and activity associated with the construction would be similar to, but in addition to, the noise and disruption of wildlife caused by visitor use. Areas of greatest intensity of construction activity under Alternative B would include Crescent Bay, Rickey Point and other areas where docks or log-booms were extended, as well as in more isolated areas to add facilities for new designated boat-in campsites or to improve primitive launch areas such as Corkscrew and Moccasin Bay.

Habitat areas used for temporary staging would result in some short-term minor loss of habitat for wildlife, until these areas were restored. Excavation activities, including for building foundations for restrooms and the education center and to relocate the road at Crescent Bay could adversely affect small mammals and invertebrates. The importation of fill materials, including topsoil, combined with compaction from construction equipment has the potential to change the soil physical and chemical composition and therefore its viability for some organisms. The use or diversion of water could result in unnatural drying or wetting of habitats within and adjacent to construction sites. There would be increased likelihood of wildlife (such as small mammals and insects) being directly harmed or killed by construction traffic and machinery or by getting caught in construction areas.

Noise and activity would cause wildlife to temporarily avoid these areas. Where buildings and other facilities, including new paved and unpaved roads and parking areas were constructed, impacts would be long-term and would cause permanent displacement of wildlife. Paving could also increase the delivery of contaminants such as petroleum products originating from the asphalt, adversely affecting water quality for wildlife. Similarly unpaved parking areas could result in long-term inputs of dust to nearby surrounding areas and decreased production for plants and therefore habitat for wildlife. Habitat modification, including vegetation removal would preclude short and long-term return to the former level of use by

some species of wildlife, particularly perching birds, where loss of trees and shrubs occurred. Overall habitat for roosting, nesting, and foraging and food would be reduced.

Specific impacts associated with Alternative B would include minor to moderate short- and long-term adverse effects from the construction of a variety of facilities at Crescent Bay that would be used year-round by residents and visitors. Short-term effects would include noise and activity during construction, while long-term effects would include habitat modification with built facilities and additional visitor use activity in this seasonally quiet area.

Other short- and long-term minor adverse effects would occur from construction of facilities at Moccasin Bay, Corkscrew and Rickey Point and overflow parking areas and from the vault toilet upstream of Cayuse Cove on the Spokane Arm. These facilities would result in the loss of native and non-native plants and associated habitat for wildlife. There would also be impacts from noise and activity associated with construction or rehabilitation activities near or on the lake, such as dock and log-boom extensions, establishment of buoy fields, moving the Kettle Falls floating toilet, and modifications to boat-in campsites.

Proposed restoration, especially in the Crescent Bay area since it has lost much of its integrity, would result in short-term negligible adverse effects coupled with long-term localized minor to moderate benefits to wildlife and wildlife habitat from planting and seeding of native species. Smaller areas of restoration at Moccasin Bay and elsewhere would also have long-term minor beneficial effects. Off-season and other periods of low use would likely allow wildlife to return to levels near their former abundance and uninhibited use of the areas, a long-term beneficial effect.

Impacts of Alternative C

Impacts of Alternative C would be similar to Alternative B, however, there would be fewer overflow parking lots and a different array of trails, focusing on connecting recreation area developments with areas outside the park, instead of expanding the variety of trails within the park, except at the Crescent Bay area, which would have the same overlook and interpretive trails, trail connection to Spring Canyon and to Grand Coulee as in Alternative B.

These actions would have the same localized negligible to moderate impacts; however, because there would be fewer actions, there would be fewer overall impacts. Restoration of extensive areas at Crescent Bay, as well as in smaller areas associated with other developments would continue to provide minor to moderate long-term beneficial impacts.

Impacts of Alternative D

As with Alternative C, actions and impacts would be similar to Alternative B. Additional facilities would be constructed at Jerome Point, Rickey Point, and throughout the recreation area for beach access trails and there would be a number of additional boat dock extensions throughout the recreation area (at Spring Canyon, Keller Ferry, Jones Bay, Fort Spokane, Porcupine Bay, Hunters and Evans). Fewer facilities, however, would be constructed at the Crescent Bay development, and there would be fewer new trails within the park. Instead trails would be focused on linking recreational facilities, where possible within the park. There would also be a new designated dog-walking loop trail at Crescent Bay. And, at a location yet to be determined, a new joint visitor center would be established, either in an existing structure or from new construction.

Because there would be more facilities spread out over a larger area, there could be greater wildlife impacts. These impacts, however, would continue to be associated with short-term noise and activity during construction and long-term impacts from facilities where none previously existed after construction. As in Alternatives B and C, however, the facilities would be relatively small and set within primarily natural and/or restored landscapes, therefore impacts would continue to be localized and minor to moderate. The greatest long-term impacts in Alternative D would come from facilities at Crescent Bay, Moccasin Bay, Corkscrew, Rickey Point, Jerome Point, overflow parking area construction, and from the proposed visitor center. Alternative D would have more new on-lake facilities, including dock extensions not part of Alternatives A, B and C, and more floating and constructed toilets. Since shoreline camping would continue to remain open and unregulated by a permit system, unlike in Alternatives B and C, there would continue to be a potential for more widely dispersed impacts, although as in Alternatives B and C, there would be more designated boat-in campsites with facilities.

As in Alternatives B and C, restoration of areas associated with proposed developments, including a rather large area at Crescent Bay would provide long-term minor to moderate beneficial impacts on wildlife by enhancing habitat.

Measures to Avoid, Minimize, or Mitigate Impacts

- Scheduling construction activities with seasonal consideration of wildlife lifecycles to minimize impacts during sensitive periods (i.e., bird nesting and breeding seasons, periods of bat breeding, rearing and hibernating, etc).
- Minimizing the degree of habitat removal (clearing) by clearly 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.
- Maintaining routes of escape for animals that might fall into excavated pits and trenches. During construction activities, Contractor personnel would maintain vigilance for animals caught in excavations and take appropriate action to free them.
- Ensuring that spill prevention measures are in place 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.
- Maintaining proper food storage, disposing of all food waste and food-related waste promptly, in a bear-proof receptacle, if available and removing all garbage off-site at the end of each working day.
- Using sediment traps and other water quality protection measures around new parking areas to minimize the effects of runoff contaminated with petroleum products from vehicle use.

Cumulative Impacts

The combined effects of significant changes to the recreation area prior to its establishment from creation of Grand Coulee Dam, pockets of development in the recreation area, agricultural land uses and development outside the recreation area over time coupled with the purposeful eradication of predators through the mid-1900s have contributed to low level or extirpated wildlife populations of some key species. The unnatural, narrow truncated boundary of the recreation area also has resulted in the inability of the area to allow for long-term protection of wildlife from impacts associated with ongoing development, since it does not envelop a physiographic context that includes natural wildlife movement areas. Past and reasonably foreseeable development projects planned for the recreation area, such as additional construction of visitor and administrative facilities would result in additional negligible to minor cumulative effects to wildlife. The effects of existing development continue to take a toll on wildlife primarily from collisions on roadways as well as from occasional inappropriate wildlife-human interactions. Development within the recreation area has remained at relatively low levels; however, and because of the extensive protected areas in and around the recreation area on nearby federal lands, portions of the recreation area provide some protected, fairly intact habitat. Because no major land areas would be converted to developed areas under Alternatives A-D, these alternatives would contribute additional negligible to minor localized adverse effects on wildlife. Following the short-term impacts of construction, in most areas, most wildlife would return to their normal population levels and dispersion.

Conclusion

Alternative A would have negligible to minor adverse and beneficial effects on wildlife. Alternatives B, C and D would have a series of short- and long-term, localized negligible to moderate adverse and beneficial effects on wildlife. These impacts would be greatest under Alternative D, with more new and expanded facilities, slightly less under Alternative B and the fewest impacts would occur under Alternative C. Alternatives A-D would contribute negligible to minor cumulative adverse effects on wildlife. There would be no major adverse effects and no impairment of wildlife or wildlife values from the implementation of the alternatives described in this Environmental Assessment.

F. Impacts to Special Status Species



Impacts of Alternative A

There would be no impacts to special status species from proposed actions under Alternative A. Ongoing programs to monitor rare, threatened, and endangered species would continue and would continue to provide additional information about the life history and habitat of these species within the recreation area.

Impacts of Alternative B-D

There would be no known direct or indirect impacts to special status species. Actions under Alternatives B-D would have no effect on grizzly bears, gray wolves, Canada lynx, Ute ladies'-tresses or Spalding's silene. In addition, there would be no effect on other species considered rare, threatened or endangered by the State of Washington or species of concern noted by the USFWS.

Measures to Avoid, Minimize, or Mitigate Impacts

Continuing to conduct additional site specific surveys for special status plants and wildlife prior to actual implementation of project actions, where warranted, and as specific project implementation details are developed.

Cumulative Impacts

Over time, long-term adverse effects to special status species have occurred throughout Washington State as well as in much of the mountain west from development, predator control and from unnaturally frequent wildland fire as well as from habitat fragmentation, primarily from transportation corridors. Effects from past, present and future actions occurring within the recreation area would continue to be primarily from administrative and private development in areas in close proximity to where it has already occurred. Ongoing park operations would continue to have indirect, negligible to minor adverse effects. These NPS actions, however, would continue to be modified if possible pending identification of special status species through surveys and other analysis. Alternatives A-D would not contribute additional cumulative adverse effects from new and expanded development of recreation area facilities because no known species would be affected by proposals in these alternatives.

Conclusion

There would be no impacts (no effect) on special status species from the implementation of Alternative A. Actions under Alternatives B-D would have no effect on known special status species, including those considered rare by the State of Washington or on species of concern. There would be no contribution to cumulative effects on endangered species from the actions proposed herein. There would be no major adverse effects and no impairment of special status species or their values from the implementation of the alternatives described in this Environmental Assessment.

G. Impacts to Cultural Resources

(INCLUDING ARCHEOLOGICAL RESOURCES, HISTORIC STRUCTURES, AND ETHNOGRAPHY)



Impacts of Alternative A

Routine, ongoing maintenance activities would have limited additional ground disturbance. Because numerous archeological surveys have been conducted; because no archeological resources have been found in the project areas; and because the discovery of potential buried archeological resources would employ mitigation measures noted below there would be no effect on known archeological resources from proposed project actions.

Although ethnographic traditional cultural properties have been identified, none have undergone a determination of eligibility for nomination to the National Register and none are located in areas that would be affected by the implementation of Alternative A. Because no ethnographic resources have been identified from within the project area and because mitigation measures would be employed during project implementation, there would also be no effect on ethnographic resources.

No historic resources have been identified in areas that would be affected from the implementation of Alternative A. Therefore, there would be no effect on known historic resources.

Impacts of Alternative B

Because no known archeological or ethnographic resources are located in areas that would be affected by the implementation of Alternative B and because mitigation measures would be employed during project implementation, there would be no effect on archeological or ethnographic resources.

As noted in “Chapter Six: Affected Environment,” the Fruitland irrigation canal, which is partially located in the national recreation area (near Rickey Point) has not been formally evaluated for eligibility for listing on the National Register of Historic Places. Because this feature, from the early 20th century, could potentially be eligible for the National Register developing a trail alongside it in Alternative B could potentially affect it. As a result ongoing consultation with the State Historic Preservation Officer would need to occur prior to implementation of this action to ensure that proposed work would have no adverse effect. Other proposed work at Rickey Point under Alternative B could introduce additional visitors to the presence of this resource but would have no adverse effect on it.

Impacts of Alternative C–D

Because no known archeological or ethnographic resources are located in areas that would be affected by the implementation of Alternatives C or D and because mitigation measures would be employed during project implementation, there would be no effect on archeological or ethnographic resources.

Measures to Avoid, Minimize, or Mitigate Impacts

Based on the national Programmatic Agreement with the Association of State Historic Preservation Officers and the Advisory Council (NPS 2003), the following measures would be included in the proposed project to minimize impacts to archeological resources:

- Notifying the park archaeologist of the specific work schedule prior to staging and construction to have the opportunity to conduct any test excavation surveys prior to ground disturbance.
- Stopping work in the area of identification and nearby areas if archeological resources are discovered at any point during the project work, as directed by the park until the find could be evaluated and action taken to avoid or mitigate the impact. When it is necessary to stop work due to archeological resources discovery, the contractor would cease all activities in the area of discovery; allow the archeologist to complete investigations; and take measures to protect the resources discovered as directed by the park.
- Avoiding further impact by modifying project implementation as needed at the site if archeological resources are discovered during implementation. If this is not possible, as much information as possible would be collected about the site in accordance with applicable laws and regulations and additional consultation with applicable agencies and tribes would occur as specified in the implementing regulations for Section 106 of the NHPA.
- Monitoring ground disturbing actions as appropriate during construction to ascertain presence/absence of archeological materials within the proposed construction zone. Monitoring would be focused where buried historical deposits might be present beneath existing development.
- Determining if a monitoring plan is needed to detail the final construction plans, the cultural material that might be encountered, important archeological questions that could be addressed, and a range of treatment options (e.g., avoidance, data recovery) for any findings.
- Evaluating the eligibility of the site as a whole under National Register of Historic Places Criteria If monitoring results in the discovery of important materials.
- Following procedures outlined in the Native American Graves Protection and Repatriation Act in the unlikely event that human remains or any objects protected under NAGPRA are exposed. This would include the potential need to stop work for a minimum of 30 calendar days. During that time, work may resume in non-sensitive areas.

Cumulative Impacts

The majority of cultural resources are inundated during peak use periods. During draw-downs, these cultural resources are exposed and vulnerable to damage from visitors or relic collectors. There are usually few visitors present during the annual spring flood draw-down. In recent years, however, draw-down has occurred in August for flow augmentation downriver for salmon recovery (NPS 2000b:93). With the additional 1.8 feet of draw-down, beyond the 1,280 foot level in summer, it is evident that more cultural resources will be exposed during periods of heavy visitation, making them more susceptible to discovery and loss. To the degree that archeological and historical resources are known and can be additionally protected, there would continue to be long-term beneficial effects from discouraging use in sensitive areas and from increasing monitoring of known areas of potential impact.

Conclusion

Because no known archeological or ethnographic resources are located in areas that would be affected by the implementation of Alternative A-D and because mitigation measures would be employed during project implementation, there would be no effect and no contribution to cumulative effects on archeological or ethnographic resources. Similarly, evaluation of the Fruitland irrigation canal in Alternative C would ensure that there would be no adverse effect on the historic resources, if it is determined to be eligible for the National Register. There would be no major adverse effects and no impairment of archeological / ethnographic resources or their values from the implementation of the alternatives described in this Environmental Assessment.

H. Impacts to Visitor Experience



VISITOR ACCESS AND OPPORTUNITIES

Impacts of Alternative A

There would be no new visitor access points to Lake Roosevelt. Visitor access to Lake Roosevelt would remain the same under Alternative A. There would, however, be several new visitor use opportunities associated with the Crescent Bay area, including for the marina development called for by the GMP. Because no new access points would be created overall impacts regarding access would be long-term, negligible and beneficial, while impacts on visitor use opportunities from the new marina would be minor and beneficial.

Impacts of Alternative B

Under Alternative B, new visitor access points would be created at Moccasin Bay (boat launch, docks and parking), Corkscrew (primitive boat launch, courtesy dock, parking area and vault toilet), and Rickey Point (deep-water boat launch, day use area and parking). New designated, rather than informal, boat-in campgrounds would be located at Neal Canyon, Cougar Cove and Enterprise Bar and new walk-in camping between Jerome Point and Daisy. Unlike Alternative A, these boat-in camps would contain a toilet, picnic tables and fire pits and walk-in camping would be allowed, rather than prohibited. New trails at Crescent Bay, linking Crescent Bay to Spring Canyon, Kettle River Campground to Napoleon Bridge, and Bradbury Beach to Rickey Point would also provide new visitor use opportunities. Public buoy fields and new community access points would add new long-term mooring opportunities for boaters. Designated access trails to the shoreline would also expand access points. These new and expanded facilities would result in moderate, long-term beneficial effects on visitor access and opportunities.

Expanded facilities would include more parking at Crescent Bay, Keller Ferry, Porcupine Bay, Fort Spokane, Gifford and Lincoln and a vault toilet at Cayuse Cove. Crescent Bay would also have a variety of expanded facilities, in addition to the current boat launch, restrooms and informal parking area. These would include the new marina (as in Alternative A), as well as a drive-in campground, accessible fishing pier, dock, education/interpretive center, outdoor amphitheater, day use picnic areas, a designated swim beach and trails along with a realigned road and designated parking areas. The new Crescent Bay education/interpretive center could eventually serve an expanded role as a visitor information center, giving visitors a better understanding of the recreation area and its resources, a long-term moderate beneficial effect.

Construction of new and expanded facilities would result in short-term minor to moderate localized adverse effects on visitors, depending on whether the construction required the closure of existing facilities or delays in accessing these facilities. Noise and activity associated with the construction areas could also impact natural quiet and visitor opportunities to enjoy some resources, such as wildlife, another short-term minor adverse effect.

Changes in the number and location of floating toilets would contribute long-term minor beneficial effects on visitor access to facilities. Expansion of facilities would also result in localized minor to moderate beneficial effects, especially at Crescent Bay, where both nearby residents and visitors would be able to take advantage of a range of new activities.

Besides facility improvements, Alternative B would also establish a permit system based on lake zones for boat-in camping. While the permit system could have short-term negligible to minor adverse effects on visitor access to informal boat-in camping opportunities, it would have long-term minor to moderate beneficial effects on visitor use opportunities by allowing visitors to identify beforehand what camping areas they will occupy and to ensure that these areas would be available to them.

Visitor access to information about facilities and operations on Lake Roosevelt would also expand under Alternative B. Because of new signage in gateway communities and wider provision of visitor use information not only throughout the park but also in improved communications with partners, visitors would have more opportunities to understand peak use conditions and lake level forecasts on Lake Roosevelt and to plan their visit accordingly, a long-term minor to moderate beneficial effect.

There would also be additional expanded communication from providing joint staffing of a new visitor center in Kettle Falls; from expansion of information provided at visitor centers; from a new toll-free phone line to direct visitor inquiries to; and better efforts to educate partners about differences in operations.

Impacts of Alternative C

Under Alternative C, a new community-constructed visitor access point would be created at Moccasin Bay and Corkscrew (boat launch, docks and parking). As in Alternative B, there would be new designated, rather than informal, boat-in campgrounds would be located at Neal Canyon, Cougar Cove and Enterprise Bar and new walk-in camping between Jerome Point and Daisy. Unlike Alternative A, these boat-in camps would contain a toilet, picnic tables and fire pits and walk-in camping would be allowed, rather than prohibited. There would be new trails at Crescent Bay, linking Crescent Bay to Spring Canyon and a new interpretive trail. There would also be an effort to link existing trail networks outside the recreation to facilities within it via trails. New community access points would add new long-term mooring opportunities for boaters and working with communities and counties there would be more designated access trails to the shoreline that would also expand access points. Combined, these new and expanded facilities would result in moderate, long-term beneficial effects on visitor access and opportunities.

There would be fewer expanded visitor use opportunities in Alternative C, with only one additional boat-in campground and four rather than six new overflow

parking areas. Expanded visitor use opportunities would include the new boat-in campground at Cougar Cove and expanded parking at Crescent Bay, Keller Ferry, Porcupine Bay, and Gifford and from changes in the number and location of floating toilets. As in Alternative B, Crescent Bay would also have a variety of expanded facilities, in addition to the current boat launch, restrooms and informal parking area. These would include the new marina (as in Alternative A), as well as a drive-in campground, accessible fishing pier, dock, education/interpretive center, outdoor amphitheater, day use picnic areas, a designated swim beach and trails along with a realigned road and designated parking areas. This expansion of facilities would also result in localized minor to moderate beneficial effects, especially at Crescent Bay, where both nearby residents and visitors would be able to take advantage of a range of new activities.

Impacts associated with construction of new and expanded facilities would be the same as described in Alternative B.

As in Alternative B, Alternative C would establish a permit system based on lake zones for boat-in camping. This permit system would have the same short-term negligible to minor adverse effects on visitor access to informal boat-in camping opportunities, and the same long-term minor to moderate beneficial effects on visitor use from additional certainty about camping availability.

Where possible, there would also be additional uniformity regarding rules and regulations among the Confederated Tribes of the Colville Reservation, the Spokane Tribe of the Spokane Reservation, and the NPS-managed areas. These would potentially include regulations related to beach fires, securing permits, and related to other key visitor use activities as well as associated with exchanging fees for permits. If possible, the tribal fee system would be used as a model for the recreation area to make fee processes (if any) consistent. To the degree that additional uniformity would be established, these would result in long-term minor beneficial effects for visitors and adjacent residents, who could obtain a single permit, such as for beach fires, applicable to Lake Roosevelt endorsed by both the NPS and tribes. Joint and separate regulations would be showcased in a publication describing differences in management among the tribes and NPS, another long-term beneficial effect.

The volunteer boat monitoring patrol would potentially increase long-term negligible to minor beneficial effects on visitor access and opportunities by increasing the ability to gain compliance from boaters on the lake engaging in various activities while limiting effects of non-compliant boaters on the recreation area and other visitors, such as in increasing the tagging of unattended personal property when it is left to “reserve” an unreservable area.

New cooperation in aquatic weed management would allow recreation area neighbors to assist in control efforts under specific conditions, a long-term negligible beneficial effect on visitor opportunities. This would be combined with

benefits from the proposed “Living on Lake Roosevelt” program that would target neighbors.

As in Alternative B, visitor access to information about facilities and operations on Lake Roosevelt would also expand. Expansion would include many of the same actions in Alternative B, including expanded communication from providing joint staffing of a new visitor center in Kettle Falls; more information provided at visitor centers; and better efforts to educate partners about differences in operations, including consistency regarding adopting and enforcing noise regulations. There would be an expansion of signage in gateway communities and wider provision of visitor use information not only throughout the park but also in improved communications with partners, visitors would have more opportunities to understand peak use conditions and lake level forecasts on Lake Roosevelt and to plan their visit accordingly, a long-term minor to moderate beneficial effect. Unlike other alternatives, Alternative C would include expanded efforts to orchestrate or participate in seasonal meetings between NPS, chambers of commerce, local tourism industry officials and others to discuss opportunities for collaboration, another negligible long-term beneficial effect that would improve coordination of visitor services.

Impacts of Alternative D

Alternative D would include a major new facility not present in Alternatives A, B or C – a NPS/tribal jointly operated visitor center at a location and facility to be determined. This new visitor center would provide expanded recreation area information to a wide array of visitors. While there would be short- and long-term adverse effects from its construction, there would be long-term moderate beneficial effects on visitor access and opportunities once it was complete.

As in Alternative B, new visitor access points would be created at Moccasin Bay and Corkscrew (boat launch, docks and parking), Rickey Point (deep-water boat launch, day use area and parking) and new designated boat-in campgrounds would be located at Neal Canyon, Cougar Cove and Enterprise Bar, with a new walk-in campground between Jerome Point and Daisy. Unlike Alternative B, however, there would also be a designated swim beach at Rickey Point and a new rest area/day use area at Jerome Point as well as additional designated and reservable group boat-in campsites at Detillion and Penix Canyon. The additional designation of group campsites would increase the number of areas with amenities available. There would be new trails at Crescent Bay and these would be different than in other alternatives, including a designated dog-walking trail and fewer trail connections (only to Spring Canyon) and a shorter interpretive trail. For access trails to the shoreline, these would be both regular and more numerous than in other alternatives, with trails established at more frequent intervals along the shoreline. Other actions that would be the same as Alternative B would include public mooring buoy fields and new community access points. Combined, these new facilities would have long-term minor to moderate beneficial effects on visitor

access to the shoreline and visitor use opportunities by providing more facilities and more access points. Alternative D also would potentially add other public launch facilities in the future, a long-term beneficial effect on access to the lake.

Expansion of existing facilities would also be included in Alternative D, with expansion of boat docks beyond that needed to accommodate draw down effects to that needed to accommodate additional visitor use at Spring Canyon, Keller Ferry, Jones Bay, Fort Spokane, Porcupine Bay, Hunters and Evans. There would also be expanded overflow parking at Crescent Bay, Fort Spokane, Keller Ferry and Porcupine Bay. Unlike Alternatives B and C, there would be fewer expanded facilities at Crescent Bay. These would, however, include the new marina, dock, interpretive panels, day use picnic areas, a designated swim beach and trails, as well as new designated parking areas. Other changes in Alternative D would include moving the Marcus Island swim area downstream. This expansion of facilities would also result in localized minor to moderate beneficial effects.

Impacts associated with construction of new facilities and expansion of existing facilities would be the same as described in Alternative B, however there would likely be greater impacts because there would be more new and expanded facilities.

As in Alternative A, there would be new information and access opportunities for visitors from the new visitor information center on Highway 395; from educating school groups; from using neighborhood clean-up programs and stewardship groups to improve shoreline resources. As in Alternatives B and C, there would also be better information from using more sources to communicate facility availability; from educating neighbors about the public nature of the shoreline; and from publication of a welcome neighbor brochure.

Overall, there would be more new and expanded facilities in Alternative D that would increase the number of visitor use access points and opportunities and provide wide-ranging moderate long-term beneficial effects on visitor experience.



VISITOR SAFETY

Impacts of Alternative A-D

There would continue to be long-term negligible to moderate beneficial impacts on visitor safety associated with water quality from maintaining existing toilets, pump-out facilities, and dump stations under all alternatives and from requiring overnight visitors to carry and use portable toilets. Additional potential safety impacts would occur from visitors not knowing about the fishing advisory and eating excessive quantities of potentially harmful contaminants. Other long-term minor beneficial effects would continue to occur from ongoing employee patrols and availability to visitors during emergencies and as a source of visitor information about recreation area resources. Boating safety would be enhanced

by continuing to remove non-compliant docks and boat launches (that don't meet CAP criteria), from removing unattended buoys (thereby decreasing obstacles on the lake); and from expanded use of the Tread Lightly® brochure for mail and campground use.

Additional Impacts of Alternative B-D

Several of the potential negligible to minor long-term impacts on visitor safety in Alternative A would continue in these alternatives, including those associated with the fishing consumption advisory, and from potentially improper disposal of food. The action alternatives would have additional long-term minor to moderate beneficial impacts on visitor safety associated with water quality from increasing the availability of floating toilets by providing a longer season of use; from requiring day-use boaters to carry portable toilets; and from coordinating water quality sampling with agencies, tribes and other partners.

Beneficial effects on visitor safety associated with vehicle travel would include more and better signs about availability of recreation area resources; and coordinating with the county to ensure safe parking for proposed walk-in camping; and with the counties and Washington Department of Natural Resources on fire bans. Allowing year-round beach fires but only in designated fire pits would also improve visitor safety given other associated fire rules from the Tread Lightly® Program. Other benefits would come from enhance the provision of fire safety education with partners and neighbors and from increasing knowledge about lake level forecasts.

Additional Impacts of Alternative B

In addition to strategies that would enhance visitor safety from ongoing programs and activities (Alternative A) and from proposed new programs and activities (Alternatives B-D) as noted above, Alternative B would include potential additional enhancement of water quality from the provision of additional floating toilets where needed; from moving the floating toilet near Kettle Falls closer to Rice; from installing waste bag dispensers at boat launches and creating a rebate program to return them; from additional restrooms at new boat-in campgrounds, Cayuse Cove, Crescent Bay, and Rickey Point; and from the proposed new permit system for boat-in camping. Other benefits would likely occur from potential relocation of the Marcus Island swim area and from improving water circulation at the Kettle Falls swim area. Combined these would primarily be long-term negligible to moderate localized beneficial effects.

The proposed permit system for boat in-camping would also have long-term minor to moderate beneficial effects from informing visitors of the rules and regulations (on the back of the permit), including information about the expanded Tread Lightly® Program. Other beneficial effects from the permit system would include making it easier for law enforcement and other emergency personnel to find campers when the need arises. Enhancements to user education would also

come from additional signage, pamphlets and visitor contacts. Knowledge of recreation area regulations would help direct visitor activities toward more safe practices, a long-term minor beneficial effect.

Impacts of Alternative C

Although some actions proposed in Alternative B would not occur in Alternative C, many of the same long-term beneficial impacts on improving visitor knowledge of recreation area resources (such as from the boat-in camping permit system); and from the provision of a few additional toilet facilities would occur; other beneficial effects from the permit system would also be part of Alternative C. In addition, Alternative C would allow for the development of a volunteer boat monitoring network to supplement ranger patrols, thereby improving additional compliance with recreation area rules and regulations by having more uniformed personnel patrolling the lake. Other benefits in Alternative C would come from adopting a lake-wide fire permit system in coordination with tribes, which could result in long-term minor to moderate beneficial effects from knowing where permitted and illegal fires were occurring during questionable periods of moderate fire danger (before fire safety bans are enacted).

Impacts of Alternative D

In addition to strategies that would enhance visitor safety from ongoing programs and activities (Alternative A) and from proposed new programs and activities (Alternatives B-D) as noted above, Alternative D would include potential additional enhancement of water quality from the provision of additional floating toilets where needed; from moving the floating toilet near Kettle Falls closer to Rice; from installing waste bag dispensers at boat launches; and from additional restrooms at new boat-in campgrounds, Crescent Bay, Moccasin Bay, Corkscrew and Rickey Point. Other benefits would likely occur from relocation of the Marcus Island and Kettle Falls swim areas. Combined these would be long-term negligible to moderate localized beneficial effects.

As in Alternatives B and C, there would be enhancement to user education that would come from additional signage, pamphlets and visitor contacts. Signage would be greatest in Alternative D, with directional signage to more recreation area facilities that in many cases would be visible to boaters. Knowledge of not only recreation area regulations but also where the most convenient recreation area resources are located would help direct visitor activities toward more safe practices, a long-term minor beneficial effect.

Measures to Avoid, Minimize, or Mitigate Impacts (Visitor Access, Opportunities and Safety)

- Avoiding evening, weekend and holiday work by requiring approval from the superintendent. Longer construction delays or total road closures may also require approval from the superintendent.

- Conducting materials deliveries (to the degree possible) in the early morning and late evening hours.
- Distributing press releases to local media, signs in the recreation area and ferry information to inform visitors about construction conditions during the projects.
- Scheduling work around high visitor use days and times, such as holidays and weekends.
- Developing a safety plan prior to the initiation of construction to ensure the safety of recreation area visitors, workers, neighbors, and park staff.
- Controlling dust during construction (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).



SCENIC RESOURCES

Impacts of Alternative A

Alternative A would have negligible effects on scenic resources from the location of a marina at Crescent Bay. Proposed facilities would be constructed to fit into the landscape according to recreation area and/or NPS design standards.

Impacts of Alternative B and D

With major new facilities at Crescent Bay and moderate facility development at Moccasin Bay, Corkscrew and Rickey Point, with a walk-in camping area between Jerome Point and Daisy, there would be long-term minor impacts on scenic resources from implementation of these alternatives. For the most part, however, these facilities would be concealed from most viewpoints above the lake since they are set alongside the shoreline, close to the lake. Negligible to minor impacts would occur from expansion of facilities in other areas, including for boat-in camping and overflow parking. Additional minor impacts would occur in Alternative D from the construction of not only the walk-in camping area between Jerome Point and Daisy, but also from the construction of a rest area/day use area at Jerome Point. Long-term negligible to minor beneficial effects would be achieved from increased efforts to cooperate with county land use planning departments regarding impacts from new developments, including scenic qualities, close to the shoreline/boundary of the recreation area.

Impacts of Alternative C

Similar impacts to scenic resources would occur in Alternative C, however, since the Rickey Point facilities would not be developed under this alternative, there would be no impacts to scenic resources in that vicinity. The grassy shoreline above Rickey Point would continue to remain as it is today. Alternative C would likely allow for more cooperation with county land use planning departments to

designate access trails to the recreation area and for preserving shoreline scenic qualities, a long-term minor beneficial effect.

Measures to Avoid, Minimize, or Mitigate Impacts (Scenic Resources)

- New structures, including signs, buildings and other facilities would be designed to fit into the existing vernacular landscape, including associated colors, textures and styles.
- New structures would be concealed from major viewpoints as much as possible.
- Additional cooperation with county land use planning departments for shoreline access and for mitigating the effects of boundary development along the recreation area would occur.



SOUNDSCAPE

Impacts of Alternative A

There would be ongoing short-term moderate adverse impacts from excessive boat noise based on special use permit exceptions to Code of Federal Regulations (CFR) noise requirements from periodic special events for cigar boats when these events are hosted by Lake Roosevelt managers (tribes and/or NPS). During other times of the year, the CFR regulation would be used to reduce noise when possible, subject to staffing and training.

There would be long-term negligible to minor adverse impacts on soundscape from the provision of the marina and other facilities at Crescent Bay, which would increase noise and activity in an area that is often quiet, except on weekends.

Impacts of Alternative B-D

Under all of the action alternatives, NPS would increase training and the procurement of specialized equipment to more effectively regulate excessive boat noise (except during special events when exceptions to these rules would apply based on permit conditions). In addition, the NPS would work with the tribes to regulate and to monitor these special events. As a result, there would be a reduction in excessive boat noise over time, a localized, long-term minor to moderate beneficial effect.

As in Alternative A, there would be long-term negligible to minor adverse impacts on soundscape from the provision of the marina and numerous other facilities at Crescent Bay, as well as in other areas where new or expanded facilities would be constructed, such as Rickey Point (Alternatives B and D), and Jerome Point (Alternative D). There would also be short-term negligible to moderate localized adverse impacts from noise and activity associated with construction

of new and expanded recreational facilities. These would be greatest under Alternative D followed by Alternatives B and C.

Measures to Avoid, Minimize, or Mitigate Impacts (Soundscape)

- Minimizing construction activities during normally quiet or sensitive times of day, such as during the morning, evening and at night.
- Considering changing the nature and scope of special use permits for cigar boat races and other special events if these events became more frequent or use of the boats more widespread.
- Have flagger request non-work idling vehicles to reduce noise pollution if delays will be more than five minutes until traffic flow resumes.

Cumulative Impacts

Over time there have been many visitor use facilities constructed within Lake Roosevelt National Recreation Area by the NPS and by the tribes. These facilities have had both short-term minor to moderate and long-term moderate to major beneficial impacts on visitor experience. Under all alternatives, the recreation area would continue to implement the direction found in the GMP to modify recreational facilities and to improve resource conditions. These new actions combined with ongoing management of recreation area resources would continue to result in negligible to minor adverse and beneficial effects on visitor experience. When the impacts of Alternative A are combined with these, Alternative A would have negligible cumulative adverse and beneficial effects on visitor experience, including access and opportunities, safety and scenic resources. Alternatives B-D would also contribute negligible to minor cumulative beneficial and adverse effects.

Conclusion

Alternative A would have short- and long-term negligible adverse effects and minor long-term beneficial effects on visitor experience, including visitor access and opportunities, safety, and scenic resources. Alternatives B-D would have short- and long-term negligible to moderate localized adverse effects and long-term negligible to moderate beneficial impacts. Adverse impacts would be greatest from Alternatives B and D, whereas beneficial impacts would be greatest in Alternatives B and C. As noted above, impairment conclusions are not made for visitor use opportunities or safety. There would be no major adverse effects to and no impairment of scenic resources or soundscapes or their values from the implementation of the alternatives described in this Environmental Assessment.

I. Impacts to Socioeconomics



Impacts of Alternative A

There would be short-term minor to moderate beneficial impacts during construction and long-term negligible to minor beneficial impacts during operations on local communities near Crescent Bay from the construction of the marina, depending on where employees were drawn from and the state of the local economy. To the extent that goods and services were purchased locally and employees were drawn from the area, beneficial impacts could be localized and moderate. Overall, under Alternative A, there would be few long-term beneficial impacts since most activities under Alternative A would be the same as those now occurring. Over time, the park would likely continue to add employees and these employees would have long-term beneficial effects on the local economy from the purchases of goods and services. Approximately \$1,220,000 is spent on annual operating costs.

Impacts of Alternative B

Alternative B would have additional short-term minor to moderate beneficial impacts from construction of a variety of new facilities, including from the marina as in Alternative A, but also from the new education/interpretive center at Crescent Bay, from dock and log-boom extensions throughout the recreation area; from construction of a new deepwater launch and other facilities at Rickey Point, Corkscrew and Moccasin Bay; and from the construction of the following additional facilities at Crescent Bay: dock, marina store, restrooms, campground, day use picnic areas, trails, swim platform, kayak/canoe launch, and accessible fishing pier.

Overall, there would be long-term minor beneficial impacts from other provisions in Alternative B that would improve facilities throughout the recreation area, potentially encouraging longer visits by both local and out-of-town visitors.

This alternative would result in more long-term park operational expenses than Alternative A, resulting in some long-term minor benefits on the local economy from additional employees and maintenance of facilities. A preliminary cost estimate completed as part of the selection of the preferred alternative came to \$6,847,000 for implementation of Alternative B, and \$468,000 in annual operating costs in addition to the current \$1,220,000 annual operating expense.

Impacts of Alternative C

Impacts from Alternative C would be similar to Alternative B, except that fewer overall facilities would be constructed, resulting in fewer short-term beneficial impacts on socioeconomics. Major facilities would be similar except that Rickey Point facilities would not be constructed and there would be fewer overflow parking areas and boat-in campsites. Long-term beneficial impacts would be similar with more money needed to manage new programs, maintenance of new facilities and for new employees. A preliminary cost estimate completed as part of the selection of the preferred alternative came to \$5,967,000 for implementation and construction of Alternative C, and \$437,000 in annual operating costs in addition to the current \$1,220,000 operating costs.

Impacts of Alternative D

Alternative D would result in the greatest number of new and expanded facilities being constructed, including most of those identified in Alternative B, except for some overflow parking areas and some of the Crescent Bay facilities (no campground, education/ interpretive center, fewer trails, and no amphitheater of fishing pier). Among the other new facilities would include a day use/rest area at Jerome Point, a new joint visitor center, and group boat-in campsites. A preliminary cost estimate completed as part of the selection of the preferred alternative came to \$5,572,000 for implementation and construction of Alternative D, and \$133,000 in annual operating costs in addition to the current \$1,220,000 annual operating costs.

Measures to Avoid, Minimize, or Mitigate Impacts

- Where possible projects would be combined or phased to allow for cost-savings measures related to staging remaining in place rather than setting up and taking down for sequential implementation actions.
- New facilities would be constructed according to LEED standards to minimize long-term operations costs.
- New buildings, facilities and other improvements would be constructed from recycled and reused materials to the extent possible.

Cumulative Impacts

National Parks, including national recreation areas like Lake Roosevelt have been shown to be a significant benefit to local community economies because of recreation dollars and park employee salaries paid. A 2005 money generation model study shows that Lake Roosevelt benefits the local economy by contributing 851 jobs, \$15,612,000 in personal income created (including NPS salaries), and \$35,677,000 in non-local visitor and park payroll spending (NPS 2006). Ongoing impacts from park spending on salaries and projects would continue and would continue to have a minor to moderate beneficial impact. Because there would be few major changes in Alternative A, it would contribute minor beneficial effects, primarily from employment and revenue generated as a result of the new marina complex at Crescent Bay. Alternatives B, C and D would also contribute the same minor employment and revenue generation from the new marina, but would also result in more money spent by Lake Roosevelt NRA in the local area, both for new employee salaries and for project work, including for employees, contractors and materials and supplies, these would constitute short- and long-term minor to moderate beneficial effects on the local economy.

Conclusion

Alternative A would have short-term minor to moderate beneficial impacts and long-term negligible to minor beneficial impacts. Alternatives B, C, and D would have more short-term moderate beneficial impacts (from construction) and long-term minor beneficial impacts. Based on very preliminary estimates, Alternatives B and C would have similar needs for additional operating costs (\$468,000 and \$437,000), while Alternative D would cost much less to operate annually (\$133,000), but would have about the same construction costs (which varied among the alternatives only by \$880,000 between B and C, with B being more expensive, and by \$395,000 between C and D, with C being more expensive.

J. Impacts to Park Operations



Impacts of Alternative A

There would continue to be ongoing minor to moderate impacts on park operations from managing a variety of programs related to the shoreline of Lake Roosevelt. These include maintenance and operations associated with visitor facilities, administrative facilities, resource management, and interpretive programming. Existing staff at Lake Roosevelt would continue to have duties associated with maintenance, administration, resource management and interpretation as well as management. Existing operations concerned with human waste and litter removal from beach campsites, illegal fire rings, aquatic vegetation management and other shoreline activities would continue at the same level as would aquatic vegetation management programs. Ongoing management of the CAP program would continue using existing and later refined criteria. Staff would continue to be needed to physically manage parking and day use at high use areas since visitors would continue to arrive at these areas on peak use days, not knowing they were at or over capacity. Existing management and operations staff would continue to need to meet regularly with the Confederated Tribes of the Colville Reservation, with the Spokane Tribe of the Spokane Reservation, and with the Bureau of Reclamation (BOR). Frequent meetings with the five counties, with the Washington Department of Natural Resources and other partners would also continue to be needed. A short-term increase in staffing or contracting oversight would also be needed under Alternative A to oversee the implementation of the dock and log-boom extension projects and concession marina development as well as for the proposed joint staffing of the Highway 395 joint visitor center. Included in ongoing park operations would be educational programming, ongoing maintenance operations, patrolling of the lake and shoreline access roads, and other projects that would continue to contribute to short- and long-term improvements in management of the recreation area, such as one-time, specially funded projects for research or resources management and routine and cyclic maintenance of facilities.

Impacts of Alternative B

Most of the park operations in Alternative A would continue in Alternative B, however, a number of key measures in Alternative B would both add more and redistribute some park operations. For some programs, such as the boat-in camping permit system, additional staff responsibilities would be created which would either have to be absorbed by existing staff or which would require new staff. The need to manage new signs and public information dissemination about facility capacity on peak use days would also likely require additional staffing or redistribution of responsibilities. With the increasing emphasis on partnerships in this alternative and in providing more information to the public, there would also be a greater need than in Alternative A for staff to be present at a variety of community meetings and for ongoing coordination with the tribes and BOR. The need for maintenance, engineering and contracting oversight staff would also be increased to manage the variety of projects that would be implemented under this alternative.

Over time, there would likely be less human waste to remove, fewer beach campsites to clean-up and fewer illegally constructed trails to be removed because of actions that would be implemented as a result of Alternative B, including the use of portable toilets by all boaters, a campsite permit system, and a system of designating beach access trails through cooperation with partners. There would also likely be fewer illegally reserved beach campsites and day use areas from ongoing efforts to tag apparently abandoned property. Allowing for CAP buoy fields would likely lead to fewer unattended buoys in unauthorized areas on the lake. Providing additional boat launches and other designated facilities in key areas would limit the need for visitors to drive many miles in search of an access point or facility and would likely increase overall compliance with park rules and regulations thereby avoiding some visitor encounters that would otherwise occur under Alternative A. More prominent provision of visitor information on boat-in camping permits, at visitor centers and in partner managed areas would increase visitor knowledge of recreation area resources and regulations and reduce the number of visitor conflicts. Allowing walk-in camping and creating a designated overnight campground at Crescent Bay would reduce some non-compliant visitor behavior that occurred when these facilities were unavailable, thereby negligibly reducing staff time to manage some of these incidences. There could also be a reduction in the law enforcement staff time needed to find boaters on the lake because the boat-in camping permit system would allow additional knowledge of what individuals were camped in different zones on the lake. This would likely also aid emergency personnel when responding to incidents since boaters would have a better idea of where they were.

Together the actions in Alternative B would have negligible to moderate adverse impacts on park operations, including the need to manage new facilities and programs, and to attend and facilitate additional cooperation among partners. There would be additional short-term minor to moderate adverse impacts as park staff implemented new programs. Long-term negligible to minor beneficial impacts would be realized from the successful implementation of some programs and from the consequent reduction in effort needed to manage visitors engaging in those activities.

Impacts of Alternative C

Actions and impacts would be similar to Alternative B, however because there would be fewer facilities, including no facilities at Rickey Point, less overflow parking and no public buoy mooring system, there would be less overall need for short-term construction oversight and long-term maintenance operations than in Alternative B. As in Alternative B, because of the permit system and additional information systems and some new facilities (such as the education/interpretive center at Crescent Bay), visitor services and interpretation staff would need to increase to manage these additional programs. In addition to the programs to improve visitor information and communications with partners in Alternative B, there would be broader programs to involve partners in Alternative C that would

mean more staff time for coordination efforts, such as for publishing a brochure of regulatory differences, and for working with the county and developers to establish legal access to the shoreline for neighboring communities. Other programs, such as developing a volunteer boat monitoring patrol and increasing tribal coordination and orchestrating meetings among partners to identify opportunities for collaboration would also require additional staff time.

Together, actions in Alternative C would have long-term negligible to moderate adverse impacts on park operations and long-term negligible beneficial effects from implementation. These would be coupled with short-term adverse effects as park staff got used to new responsibilities and changes in operations.

Impacts of Alternative D

There would be more new facilities and more expanded facilities in Alternative D, but fewer coordination efforts among partners. As a result, Alternative D would have more short-term but fewer long-term adverse impacts on park operations. Long-term impacts would primarily come from maintaining more facilities, and continuing to address visitor use impacts that remain unsolved by proposed actions. Ongoing management actions from Alternative A would continue for managing boat-in camping because there would be no permit system. Because visitors could continue to camp anywhere along the shoreline and would not have direct access to recreation area regulations there would likely continue to be a need for park staff to deal with human waste and other ongoing impacts. As in Alternative B, some benefits would be provided by the public buoy mooring system, by formal beach access trails, from additional designated boat-in campsites and from other actions. Because Alternative D would rely more on facilities, there would likely be fewer staffing impacts from implementation. Much of the agency coordination would come from joint visitor centers on Highway 395 and a new one at a location to be determined that would be operated in conjunction with the tribes.

Alternative D would likely have long-term negligible to minor adverse impacts on park operations, which would increase to moderate for maintenance staff; short-term adverse effects to manage construction and expansion of facilities; and long-term negligible beneficial effects during implementation.

Cumulative Impacts

Over time, Lake Roosevelt NRA has become more expensive to manage and to operate. Current operating costs run about 1.25 million dollars. Based on the need for additional personnel and services, Alternatives B and C would increase this by nearly 0.5 million dollars, while Alternative D would increase it by about 30 percent of that. Negligible adverse effects would be contributed to cumulative impacts on park operations from Alternative 1, and moderate adverse effects from Alternatives B and C, while minor adverse effects would be contributed in Alternative D.

Conclusion

Impacts to park operations would be negligible in Alternative A, moderate in Alternatives B and C and minor in Alternative D. Negligible adverse effects would be contributed to cumulative impacts on park operations from Alternative A, and moderate adverse effects from Alternatives B and C, while minor adverse effects would be contributed in Alternative D.

TABLE VII - 3: FACILITY IMPACTS FOR DRY AND DROUGHT YEARS

Facility	Amenities Impacted	Recommended Mitigation	Estimated Total Cost
Spring Canyon	three courtesy docks, PVC and wood swim booms	Add a 20-foot long dock section to each dock, add four logs, move four buoy anchors to log boom, and retrofit PVC boom for easy removal.	\$52,200
Plum Point	one courtesy dock	Add a 20-foot long dock section.	\$12,000
Keller Ferry	two courtesy docks, wood swim boom	Add a 20-foot long dock section to each impacted dock, add four logs, and move three buoy anchors.	\$28,200
Goldsmith	one courtesy dock	Add a 20-foot long dock section.	\$15,000
Penix Canyon	one courtesy dock	Add a 20-foot long dock section.	\$12,000
Jones Bay	two courtesy docks	Add two 20-foot dock sections to one dock.	\$24,000
Sterling Point	one courtesy dock	Add a 20-foot long dock section.	\$12,000
Seven Bays	three marina dock systems	Move location of two docks and shore connections. Retrofit dock to allow temporary relocation to attach to main dock.	\$42,000
Fort Spokane	seven courtesy docks, wood swim boom	Add two 20-foot sections to one dock, and one 20-foot section to another. Mitigation of other docks not recommended, due to steep bank. Swim area mitigation not recommended, due to narrow deep channel.	\$55,000
Detillion	two courtesy docks	Add a 20-foot long dock section to each dock.	\$24,000
Porcupine Bay	two courtesy docks, PVC and wood swim booms	Add two 10-foot long sections to one dock and one 20-foot long section to the other. Add one log and two PVC pipes to swim booms and Sheet 2 anchors to enlarge swim area. Add plant prohibitory fabric to new swim beach.	\$37,100
Hunters	three courtesy docks, wood swim boom	Add a 20-foot long section to each dock. Add two logs to swim boom and one anchor.	\$49,500
Gifford	two courtesy docks	Add one 20-foot long dock section to one dock and two 10-foot long dock sections to the other.	\$35,000
Cloverleaf	wood swim boom	Add three logs and one anchor and relocate shore anchor.	\$5,000
French Rocks	one courtesy dock	Add a 20-foot long section to dock.	\$12,000
Kettle Falls	one government dock	Add a 10-foot long section to dock.	\$6,000
Evans	one courtesy dock, wood swim boom	Add a 20-foot long section to dock, add four logs, move two anchors, and add two anchors to swim boom.	\$21,000
Snag Cove	one courtesy dock	Add a 20-foot long section to dock.	\$12,000
		Total	\$454,000

TABLE VII - 4: IMPACT COMPARISON CHART

	Alternative A Impacts
Land Use	Minor adverse effects from the implementation of existing plans and programs. Negligible cumulative adverse effects.
Air Quality	Localized negligible to minor adverse effects Negligible cumulative adverse effects
Soils and Vegetation	Ongoing negligible to minor adverse impacts. Negligible cumulative adverse effects.
Water Resources: Water Quality	Short- and long-term, localized, minor to moderate adverse effects on water quality. Short- and long-term negligible cumulative adverse effects from construction and from location of the marina as well as from ongoing operations.
Wildlife	Negligible to minor adverse and beneficial effects. Negligible to minor cumulative adverse effects.
Special Status Species	No effect and no contribution to cumulative effects on grizzly bears, gray wolves, Canada lynx, Ute ladies'-tresses or Spalding's silene. No effect on other species considered rare, threatened or endangered by the State of Washington or species of concern noted by the USFWS.
Visitor Experience, including Visitor Access and Opportunities, Safety, Scenic Resources, Soundscape	Short- and long-term negligible adverse effects and minor long-term beneficial effects. Negligible cumulative beneficial and adverse effects.
Socioeconomics	Short-term minor to moderate beneficial impacts and long-term negligible to minor beneficial impacts. Annual operating and construction costs estimated at \$1,220,000 potential marina operation costs.
Park Operations	Negligible adverse effects. Negligible cumulative adverse effects.
Impairment	No impairment of park resources or values

Alternative B Impacts	Alternative C Impacts	Alternative D Impacts
<p>Localized moderate adverse effects from new and expanded developments and long-term localized moderate beneficial effects from restoration at Crescent Bay and Moccasin Point.</p> <p>Minor cumulative adverse effects.</p>	<p>Minor to moderate adverse effects from new and expanded developments and long-term localized moderate beneficial effects from restoration at Crescent Bay and Moccasin Point.</p> <p>Minor cumulative adverse effects.</p>	<p>Moderate adverse effects from new and expanded developments and long-term localized moderate beneficial effects from restoration at Crescent Bay and Moccasin Point.</p> <p>Minor cumulative adverse effects.</p>
<p>Short-term localized negligible to moderate adverse effects and negligible to minor long-term beneficial effects.</p> <p>Negligible to minor long-term cumulative adverse effects and negligible beneficial effects.</p>	<p>Similar to B except fewer moderate adverse effects.</p> <p>Negligible to minor long-term cumulative adverse effects and negligible beneficial effects.</p>	<p>Similar to B except additional series of short-term negligible to moderate adverse effects related to construction, with some additional beneficial effects primarily related to improving signage to facilities from the lake.</p> <p>Negligible to minor long-term cumulative adverse effects and negligible beneficial effects.</p>
<p>Short- and long-term negligible to moderate adverse impacts and long-term moderate localized beneficial effects on vegetation.</p> <p>Negligible to minor cumulative adverse and minor to moderate localized beneficial effects.</p>	<p>Similar to Alternative B, except fewer localized moderate adverse effects.</p> <p>Negligible to minor cumulative adverse and minor to moderate localized beneficial effects.</p>	<p>Similar to Alternative B, except more localized moderate adverse effects.</p> <p>Negligible to minor cumulative adverse and minor to moderate localized beneficial effects.</p>
<p>Short- and long-term localized minor adverse effects and long-term negligible to minor beneficial effects.</p> <p>The contribution to cumulative impacts would be the same as Alternative A plus additional long-term negligible beneficial effects.</p>	<p>Same as Alternative B</p>	<p>Same as Alternative B, with fewer long-term beneficial effects.</p>
<p>Short- and long-term, localized negligible to moderate adverse and beneficial effects.</p> <p>Negligible to minor cumulative adverse effects.</p>	<p>Similar to Alternative B with fewer overall adverse impacts.</p>	<p>Similar to Alternative B, with greater overall adverse impacts.</p>
<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>	<p>Same as Alternative A.</p>
<p>Short- and long-term negligible to moderate localized adverse effects and long-term negligible to moderate beneficial impacts.</p> <p>Minor cumulative beneficial and negligible adverse effects.</p>	<p>Similar to Alternative B, with fewer long-term minor adverse effects.</p>	<p>Similar to Alternative B, with fewer long-term beneficial effects.</p>
<p>Greater short-term moderate beneficial impacts (from construction) and long-term minor beneficial impacts.</p> <p>Annual operating and construction costs estimated at \$468,000 (over Alternative A) and \$6,847,000.</p>	<p>Similar to Alternative B. Annual operating and construction costs estimated at \$437,000 (over Alternative A) and \$5,967,000.</p>	<p>Similar to Alternative B. Annual operating and construction costs estimated at \$133,000 (over Alternative A) and \$5,572,000.</p>
<p>Moderate adverse effects.</p> <p>Moderate cumulative adverse effects.</p>	<p>Same as B.</p>	<p>Minor adverse effects.</p> <p>Minor cumulative adverse effects.</p>
<p>Same as A.</p>	<p>Same as A.</p>	<p>Same as A.</p>

VIII. Consultation and Coordination



A. Project Scoping History



The NPS initiated a 30-day public scoping period for the proposed plan from August 14, 2008, to September 30, 2008. A public scoping announcement was placed on the park's webpage and in the following newspapers: Spokesman Review (Spokane), Davenport Times, Wilbur Register, Grand Coulee Star, and the Statesman Examiner (Colville). The park conducted both internal and external scoping with appropriate NPS staff, agencies, tribes, and the public to determine the range of issues to be analyzed in the EA. Internal scoping included analysis from specialists such as historical landscape architects, hydrologists, biologists, engineers and other NPS staff from Lake Roosevelt, the Denver Service Center, and the Pacific West Region, as well as staff from other agencies. Based on scoping comments received, and federal laws, regulations, and executive orders, the NPS determined that an EA was the appropriate level of compliance for this stage of the project. This scoping process was used to define the project purpose and need, identify issues and impact topics, outline reasonable and feasible alternative actions, and to describe and evaluate the relationship of the preferred alternative to other planning efforts in the park.

Approximately 37 public comment letters (including 18 questionnaires) containing about 295 individual comments were also received: 34 from individuals, three from non-profit or homeowner organizations (NPCA, Riverview Area Association, Upper Columbia Boat Club), four from business owners or managers (Grand Coulee Yacht Club, Seven Bays Marina, Comfort Inn), and one from a local government (City of Kettle Falls). These were received via PEPC (13 letters), U.S. mail (17), and/or email (3) or handed to staff at public meetings (4). All of the comment letters listed Washington State addresses. These comments were analyzed to identify issues and concerns, and the input was incorporated into the project design as appropriate. Park staff also continued to consider public and internal concerns as they arose throughout project planning, and to integrate these additional ideas where possible and appropriate. Another 28 comment letters were submitted on the alternatives newsletter (see "Chapter Two: Purpose and Need").

Comments were submitted directly to the park at the following address: Lake Roosevelt National Recreation Area, 1008 Crest Drive, Coulee Dam, Washington 99116-1259. Comments were also submitted via the NPS Planning Environment and Public Comment (PEPC) web site at <http://parkplanning.nps.gov/laro> or sent via e-mail to the superintendent, project manager or other staff. Information about the planning process was updated and posted on the park's web site: www.nps.gov/laro and on PEPC.

B. Consultation



U.S. Fish and Wildlife Service (USFWS)

Section 7 of the Endangered Species Act (1973) requires agencies to consult with the U.S. Fish and Wildlife Service (USFWS) regarding any action authorized, funded, or carried out by a federal agency to ensure that it does not jeopardize any listed species or its critical habitat. The NPS received a project-area species list from the USFWS in a letter dated January 2009 (reference number: 1-9-09-SP-0007). This list was used as the basis for the special-status species analysis in this EA. Because there would be no effect on any species listed or proposed as rare, threatened, or endangered, no additional consultation with the USFWS is necessary.

American Indian Tribes

Lake Roosevelt National Recreation Area is consulting with American Indian tribes having cultural association with areas affected by the Shoreline Management Plan, including the Confederated Tribes of the Colville Reservation and the Spokane Tribe of the Spokane Reservation. Representatives of the tribes were part of the Interdisciplinary Planning Team established by the recreation area for this project. A summary of this involvement may be found in “Chapter Two: Purpose and Need.” Ongoing consultation with the tribes is continuing through review of this Environmental Assessment and incorporation of requested information. Additional information sharing and project planning will continue throughout the planning and implementation of the proposed project.

State Historic Preservation Officer (SHPO)

Lake Roosevelt National Recreation Area consults with the State Historic Preservation Officer during projects that have the potential to adversely impact historic or prehistoric properties. Based on current analysis, there would be No Historic Properties Affected by the implementation of the proposed actions under Alternatives A - D. If analysis later reveals that historic properties could be affected, additional consultation with the SHPO would occur, including concurrence with the proposed determinations of effect. This is possible if the Fruitland Irrigation Canal is eventually incorporated as a trail and is determined eligible for the National Register of Historic Places and/or if previously unidentified archeological resources are found during proposed actions.

Public Review of this Environmental Assessment and Project Updates

This EA is available for a forty-five (45) day public review and comment period which begins the date the EA is distributed. The availability of the EA is being announced via press releases and the EA is being mailed or emailed to the list of persons and agencies that have expressed interest in Lake Roosevelt proposed actions and events. This includes agencies, public libraries, and organizations such as The Wilderness Society, The Alpine Club, Sierra Club, etc (see Distribution List in “Appendix 3”). The EA will also be available at local libraries in Colville, Grand Coulee, Davenport, Republic, and Kettle Falls. An electronic copy of the EA is also available on-line at <http://www.nps.gov/laro>.

Comments on the EA, or requests for additional copies of this EA (please specify CD or printed copy) should be directed to:

Superintendent
Lake Roosevelt National Recreation Area
1008 Crest Drive
Coulee Dam, Washington 99116-1259
(509) 633-9441
www.nps.gov/laro or parkplanning.nps.gov/laro

Comments will be documented and analyzed at the close of the public review period. If no significant impacts from the proposed action are identified, the EA will then be used to prepare a Finding of No Significant Impact (FONSI), which will be sent to the NPS Pacific West Regional Director for consideration.

During the public review period, additional consultation will occur to affirm determinations of effect (if needed) with the California State Historic Preservation Officer, the U.S. Fish and Wildlife Service, and the U.S. Army Corps of Engineers. Consultation with the Confederated Tribes of the Colville Nation, the Spokane Tribe of the Spokane Reservation, and the U.S. Bureau of Reclamation is ongoing. Notice of concurrence with the determinations of effect will be documented in the FONSI, if prepared, for this EA (see above).

For more information concerning this EA, please contact the park Chief of Natural Resources and Compliance, Jerald Weaver at (509) 633-9441, extension 128.

C. List of Persons and Agencies Consulted/Preparers

The following people and agencies were consulted during the preparation of this Environmental Assessment:

Lake Roosevelt National Recreation Area

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Frank Andrews (former Chief, Cultural Resources Management)

Debbie Bird (Superintendent)

Ray Dashiell (Facility Manager)

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Nate Krohn (Landscape Architect)

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Lee Snook (former North District Interpretive Ranger/former Acting Chief of Interpretation)

Jerald Weaver (Chief, Compliance and Natural Resources Management, Preparer)

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Ferry County

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Brad Miller (County Commissioner)

Stevens County

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Merrill Ott (County Commissioner)

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Appendices



Appendix 1: Measures to Avoid, Minimize, or Mitigate Impacts

LAND USE

- New areas of development would be the minimum needed to accommodate proposed activities.
- Development footprints would be concentrated, rather than spread out.
- Clearly delineate construction limits to prevent expansion of construction operations into undisturbed areas.

AIR QUALITY

- Spraying water over exposed soil, particularly during dry conditions to minimize fugitive dust.
- Covering trucks transporting cut or fill material to reduce or eliminate particle release during transport.
- Encouraging contractor and NPS employees to travel together to and from the project site to the extent possible (rather than in multiple separate vehicles).
- Revegetating bare and staging areas as soon as possible.
- Minimizing the extent of vegetation removal associated with construction activities.
- Encouraging the use of local labor sources and large-volume material delivery to minimize trip generation during construction activity.
- Using propane and solar devices for heating.
- Using low VOC paints, solvents and other chemicals in building construction.
- Restricting idling of construction vehicles and equipment to no longer than 15 minutes when not in use.
- Using biodiesel rather than traditional diesel fuel.
- If delays for non-work vehicles will be more than five minutes, have flagger request that visitors turn off idling vehicles to reduce air pollution until traffic flow resumes.

SOILS

- Locating staging areas where they will minimize new disturbance of area soils and vegetation.
- Minimizing ground disturbance to the extent possible.
- Avoiding precipitation times during construction.
- Minimizing driving over or compacting root-zones and using mats or plywood to minimize soil compaction impacts in sensitive areas.
- Salvaging topsoil from excavated areas for use in re-covering source area or other project areas.
- Not piling excavated soil alongside trees to remain, and providing tree protection for trees to remain.
- Windrowing topsoil at a height that will help to preserve soil microorganisms (less than three feet).
- Reusing (rather than removing) excavated materials from the project area.
- Revegetating project areas through native seeding and/or planting.
- Importing weed-free clean fill and topsoil.
- Delineating clearing limits to minimize the amount of vegetation loss.
- Clearing and grubbing only those areas where construction would occur.
- Installing silt fencing or other erosion control methods, to prevent loss of native soil.

VEGETATION

- Driving only on established roads and trails away from weed infested areas.
- Removing seeds from vehicles and equipment.
- Not driving recreation vessels through Eurasian water milfoil mats.
- Preventing the spread of Eurasian water milfoil by removing plant fragments from boat props, trailers, fishing lines, etc.
- Prior to construction, salvage native plant material and re-plant after construction.

WATER QUALITY

- Establishing a long-term repeatable water quality monitoring program to detect undesirable effects on water quality.
- Using the water quality monitoring program to mitigate detectable adverse effects on water quality.
- Increasing the number of toilets within the recreation area.
- Implementing the provision to require day use as well as overnight boaters to carry portable toilets.
- Educating recreation area visitors about potential impacts to water quality from improperly disposed of human waste.
- Continuing to monitor study results from the industrial plant contamination on the Canadian border to implement any future recommendations.
- Where possible and retrofits occur, adding runoff barriers to paved parking areas to reduce contamination from petroleum products.
- As new boating technology arises to reduce unspent fuel contamination, gradually incorporating it into the park's administration operations fleet.
- Considering a requirement for marinas to have self-contained wash-bays to prevent pollution runoff contamination within the lake.
- Delineating staging areas away from the lake and marking them to prevent incremental expansion.
- Covering stockpiled soil and rock throughout the duration of the project with a breathable, water repellent fabric anchored around the perimeter to minimize sedimentation.
- 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.
- Retaining silt fencing in disturbed areas until stabilization (by reseeding or revegetation).
- 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 and biodiesel in heavy equipment, when possible.
- Paving (creation of impervious surface) would also be minimized.
- An Oil and Hazardous Materials Spill Prevention, Control, and Countermeasure Plan to address hazardous materials storage, spill prevention and response would be in place and approved by the park before construction begins.

WILDLIFE

- Scheduling construction activities with seasonal consideration of wildlife lifecycles to minimize impacts during sensitive periods (i.e., bird nesting and breeding seasons, periods of bat breeding, rearing and hibernating, etc).
- Minimizing the degree of habitat removal (clearing) by clearly 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.
- Maintaining routes of escape for animals that might fall into excavated pits and trenches. During construction activities, Contractor personnel would maintain vigilance for animals caught in excavations and take appropriate action to free them.
- Ensuring that spill prevention measures are in place 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.
- Maintaining proper food storage, disposing of all food waste and food-related waste promptly, in a bear-proof receptacle, if available and removing all garbage off-site at the end of each working day.
- Using sediment traps and other water quality protection measures around new parking areas to minimize the effects of runoff contaminated with petroleum products from vehicle use.

SPECIAL STATUS SPECIES

- Continuing to conduct additional site specific surveys for special status plants and wildlife prior to actual implementation of project actions, where warranted, and as specific project implementation details are developed.

CULTURAL RESOURCES

- Notifying the park archaeologist of the specific work schedule prior to staging and construction to have the opportunity to conduct any test excavation surveys prior to ground disturbance.
- Stopping work in the area of identification and nearby areas if archeological resources are discovered at any point during the project work, as directed by the park until the find could be evaluated and action taken to avoid or mitigate the impact. When it is necessary to stop work due to archeological resources discovery, the contractor would cease all activities in the area of discovery; allow the archeologist to complete investigations; and take measures to protect the resources discovered as directed by the park.
- Avoiding further impact by modifying project implementation as needed at the site if archeological resources are discovered during implementation. If this is not possible, as much information as possible would be collected about the site in accordance with applicable laws and regulations and additional consultation with applicable agencies and tribes would occur as specified in the implementing regulations for Section 106 of the NHPA.
- Monitoring ground disturbing actions as appropriate during construction to ascertain presence/absence of archeological materials within the proposed construction zone. Monitoring would be focused where buried historical deposits might be present beneath existing development.
- Determining if a monitoring plan is needed to detail the final construction plans, the cultural material that might be encountered, important archeological questions that could be addressed, and a range of treatment options (e.g., avoidance, data recovery) for any findings.
- Evaluating the eligibility of the site as a whole under National Register of Historic Places Criteria If monitoring results in the discovery of important materials.
- Following procedures outlined in the Native American Graves Protection and Repatriation Act in the unlikely event that human remains or any objects protected under NAGPRA are exposed. This would include the potential need to stop work for a minimum of 30 calendar days. During that time, work may resume in non-sensitive areas.

VISITOR ACCESS, OPPORTUNITIES, AND SAFETY

- Avoiding evening, weekend and holiday work by requiring approval from the superintendent. Longer construction delays or total road closures may also require approval from the superintendent.
- Conducting materials deliveries (to the degree possible) in the early morning and late evening hours.
- Distributing press releases to local media, signs in the recreation area and ferry information to inform visitors about construction conditions during the projects.
- Scheduling work around high visitor use days and times, such as holidays and weekends.
- Developing a safety plan prior to the initiation of construction to ensure the safety of recreation area visitors, workers, neighbors, and park staff.
- Controlling dust during construction (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).

SCENIC RESOURCES

- New structures, including signs, buildings and other facilities would be designed to fit into the existing vernacular landscape, including associated colors, textures and styles.
- New structures would be concealed from major viewpoints as much as possible.
- Additional cooperation with county land use planning departments for shoreline access and for mitigating the effects of boundary development along the recreation area would occur.

SOUNDSCAPE

- Minimizing construction activities during normally quiet or sensitive times of day, such as during the morning, evening and at night.
- Considering changing the nature and scope of special use permits for cigar boat races and other special events if these events became more frequent or use of the boats more widespread.
- If delays for non-work vehicles will be more than five minutes, have flagger request that visitors turn off idling vehicles to reduce noise impacts until traffic flow resumes.

SOCIOECONOMICS

Where possible projects would be combined or phased to allow for cost-savings measures related to staging remaining in place rather than setting up and taking down for sequential implementation actions.

New facilities would be constructed according to LEED standards to minimize long-term operations costs.

New buildings, facilities and other improvements would be constructed from recycled and reused materials to the extent possible.

Appendix 2: Site Analysis Summary of Lake Roosevelt Facilities

NAME	EXISTING FACILITIES	RIVER MILE	GMP MGMT AREA	SUMMARY SITE ANALYSIS FINDINGS	POTENTIAL FACILITIES
SOUTH—CRESCENT BAY TO SEVEN BAYS					
Crescent Bay	Launch	1	Concentrated Rec	Large, disturbed site in close proximity to recreation users	Potential for expanded boat launch, education center, deep water marina and day-use area
Eden Harbor	Community Access Pt.	2	Developed Rec	Primitive access; sheltered cove	
Spring Canyon	Campground & Launch	3	Concentrated Rec	Popular beach and group campsites	
Plum Point	Boat-in CG	7	Dispersed Rec	Small cove with shade trees	Potential for additional boat-in campsites
Neal Canyon	No facilities	10	Dispersed Rec	Large flat areas above high water	Potential new boat launch and parking lot, dependent on improved road access
Keller Ferry	Marina, CG & Launch	16	Concentrated Rec	Popular campground and small marina operate at full capacity in summer	Potential for additional camping and parking
Goldsmith	Boat-in CG	18	Developed Rec	Under-utilized boat-in campground	
Hanson Harbor	Launch	21	Developed Rec	Accessible launch ramp to alleviate demand at K. Ferry	Potential for additional parking
Jones Bay	Campground & Launch	22	Developed Rec	Secluded campground among Ponderosa pines	
Penix Canyon	Boat-in CG	22	Developed Rec	Little-used boat-in campground near Jones Bay	
Rantz Marine Park	Community Access Pt.	25	Developed Rec		
Sterling Point	Boat-in CG	31	Developed Rec		Potential for additional boat-in campsites
Lincoln	Launch	36	Developed Rec	Small enclosed site near old sawmill; constrained by topography and property lines	Unable to extend ramp; potential to formalize parking lot to the west
Hawk Creek	Campground & Launch	37	Developed Rec; Passive waters	Cool, small valley for tent camping and fishing	
Seven Bays	Marina, Restaurant & Launch	39	Concentrated Rec	Full-service marina where demand far exceeds capacity; restricted by topography and property boundaries.	Potential to change management area designation

NAME	EXISTING FACILITIES	RIVER MILE	GMP MGMT AREA	SUMMARY SITE ANALYSIS FINDINGS	POTENTIAL FACILITIES
SPOKANE ARM—FORT SPOKANE TO SUNSET POINT					
Fort Spokane	Day use area, Campground & Launch	Spokane Arm 43	Concentrated Rec	Large, historic, facility-rich area with popular campground and swim beach	Potential for additional parking, launch ramp extension and campsites
Crystal Cove	Boat-in CG	Spokane Arm 48	Dispersed Rec	Smallest boat-in campground; little use	
Cougar Cove	No facilities	Spokane Arm 49	Dispersed Rec	Popular informal beach area	Potential for small boat-in campground and vault toilet
Ponderosa	Boat-in CG	Spokane Arm 50	Dispersed Rec	Serves popular boating area	
Detillion	Boat-in CG	Spokane Arm 50	Dispersed Rec	NPS land area is narrow; Development does not match management area.	Potential to convert part or all of campground to boat-in group sites
Porcupine Bay	Campground & Launch	Spokane Arm 55	Concentrated Rec	Most popular camping area; closest to Spokane	Potential expansion of parking lot to SW of existing parking lot with some tree removal
Laughbon Bay	No facilities	Spokane Arm 55	Developed Rec	Road access across Spokane River prior to lake	
Teel Flats	No facilities	Spokane Arm 58	Developed Rec	Flat bench 10 feet above high water; public road access is possible	Potential for new large campground and boat launch
Cayuse Cove	Non-Compliant Launch	Spokane Arm 60	Developed Rec	Privately constructed road and boat launch area; no public road access; need for public toilet accessible to boats	Potential for vault toilet accessible from water
Moccasin Bay	Non-Compliant Dock	Spokane Arm 62	Developed Rec	Shallow bay with privately constructed boat launch and docks; public road access	Potential for new small boat launch with parking for boat trailers
Sunset Point	Non-Compliant Dock	Spokane Arm 62	Developed Rec	Shallow bay with privately constructed launch area and dock; no public road access	

NAME	EXISTING FACILITIES	RIVER MILE	GMP MGMT AREA	SUMMARY SITE ANALYSIS FINDINGS	POTENTIAL FACILITIES
HUNTERS AREA—ENTERPRISE TO COLVILLE RIVER					
Enterprise Bar	No facilities	50	Developed Rec	Large flat area north of Spokane Indian Res	Potential for new boat-in campground facility
Corkscrew	Non-compliant launch and dock	52	Developed Rec	Primitive launch with difficult access; steep cove walls	Potential for public, primitive launch if land-based access is resolved
Camp Na-Bor-Lee	Group Camp	53	Special Uses	Independent, non-profit camp for youth and families with kitchen facilities	
Enterprise	Boat-in CG	57	Dispersed Rec	Large site	Potential to add campsites
Hunters	Campground & Launch	64	Concentrated Rec	Largest facility between Ft Spokane and Kettle Falls	Potential to expand the campground and extend launch ramp
Jerome Point	No facilities	71	Developed Rec	Large forested area with public road access	Potential for boat launch and/or small day use area
Gifford	Campground & Launch	78	Developed Rec	Forested campground, parking and launch site	Potential to expand the facility if management area designation changes, including parking
Cloverleaf	Campground and day use area	79	Developed Rec	Small day-use and camping area with highway noise	
Daisy	Launch	85	Developed Rec	Popular launch for fishermen	
French Rocks	Launch	94	Developed Rec		
Bradbury Beach	Launch and day use area	95	Developed Rec	Day use area with popular beach; small campsite was closed	
Rickey Point	Vacation Cabins	98	Special Uses	16 cabins in gently sloping forest accessed by public road	Potential for new boat launch, day-use area and campground
Rickey Point CAP	Community Access Pt.	98	Special Uses	Sail boat moorage	
Haag Cove	Campground	99	Developed Rec	Small campground and picnic area	
Colville Flats	Day Use	100	Developed Rec	Popular day use area and swim beach; flat topography not conducive for a boat launch	Potential to improve access road and add vault toilets with better site delineation

NAME	EXISTING FACILITIES	RIVER MILE	GMP MGMT AREA	SUMMARY SITE ANALYSIS FINDINGS	POTENTIAL FACILITIES
NORTH—KETTLE FALLS TO CHINA BEND					
Sherman Creek	Vacation Cabins	101	Special Uses	8 cabins accessed by a steep, curvy road	Potential for small day-use area or boat-in campground (single or group)
Kettle Falls	Marina, CG & Launch	102	Concentrated Rec	Full-service marina, NPS facilities spread over large area; swim area has silted in	Potential for improvement through re-design
Marcus Island	Campground & Launch	110	Developed Rec	Forested launch area and campground on island; swim area has silted in	Potential for moving the swim area downstream
Summer Island	Boat-in CG	111	Developed Rec		
Evans	Campground & Launch	112	Concentrated Rec	Simple boat launch and campground; large open lawn	Potential for additional campsites
Snag Cove	Campground & Launch	115	Developed Rec	Sparsely populated area	
North Gorge	Campground & Launch	118	Developed Rec	Wooded hill with campsites and walk-in sites; protected cove	
China Bend	Launch	122	Developed Rec	Scenic, simple boat launch	
Kamloops	Campground	Kettle River 110	Developed Rec	Island campground and courtesy dock	
River Road Bar	No facilities	Kettle River 111	Developed Rec	Large flat area on Kettle River	Potential new boat launch and campground.
Kettle River	Campground	Kettle River 112	Developed Rec	Campground adjacent to shallow, river run	
Napoleon Bridge	Launch	Kettle River 113	Dispersed Rec	Little used simple boat launch without dock	Use does not fit with management area designation

Appendix 3: Plan Distribution List

On September 25, 2009, the Shoreline Management Plan / Environmental Assessment will be distributed to individuals and organizations for formal public review. Public distribution and notification of the comment period, September 28-November 11, 2009, will occur through web sites, press releases, cd copies, hard copies, and letters. On October 5th - 8th, open house meetings at Colville, Davenport, Coulee Dam, and Spokane will be held. The complete plan, including maps will be available on the NPS Planning, Environment and Public Comment (PEPC) website. A link to the PEPC site was added to the Lake Roosevelt NRA home page. The distribution list includes the following:

U.S. Congress

U.S. SENATOR MARIA CANTWELL

U.S. SENATOR PATTY MURRAY

CONGRESSWOMAN CATHY MCMORRIS RODGERS

REPRESENTATIVE DOC HASTINGS

Federal Agencies

U.S. NATIONAL PARK SERVICE

Columbia Cascade System Support Office, Seattle, WA

Pacific West Region, Oakland, CA

Regional Solicitor's Office

Pacific West Region Library

Amistad National Recreation Area, Superintendent

Great Basin National Park

Glen Canyon National Recreation Area

Water Resources Division, Denver and Ft. Collins, CO (Wetlands Specialist and Hydrologist)

Natural Resource Program Center, Denver, CO (Soils Scientist)

Inventory and Monitoring (Invasive Species Coordinator, Upper Columbia Network Coordinator)

Threatened and Endangered Coordinator for Pacific West

Invasive Species Coordinator, Fort Collins

U.S. BUREAU OF RECLAMATION

Grand Coulee Office, Planning

Ephrata Office, Realty Specialist

U.S. BUREAU OF LAND MANAGEMENT

Spokane Office, Range Management Specialist

U.S. FOREST SERVICE

Colville National Forest

Okanogan National Forest

U.S. NATURAL RESOURCE CONSERVATION SERVICE

Colville, Washington
Davenport, Washington
Ephrata, Washington
Okanogan, Washington
Colville Tribal Liaison

U.S. BUREAU OF INDIAN AFFAIRS

Natural Resources (Nespelem and Wellpinit, WA)
Superintendent (Nespelem and Wellpinit, WA)

U.S. FISH AND WILDLIFE SERVICE (SPOKANE, WA)

U.S. ENVIRONMENTAL PROTECTION AGENCY (SEATTLE, WA)

BONNEVILLE POWER ADMINISTRATION (SPOKANE, WA)

ARMY CORE OF ENGINEERS (IDAHO)

Indian Nations

CONFEDERATED TRIBES OF THE COLVILLE RESERVATION

Historic Preservation Office
Business Council
Environmental Trust
Fish and Wildlife
Parks and Recreation
Planning Department
Tribal Attorney

SPOKANE TRIBE OF THE SPOKANE RESERVATION

Business Council
Natural Resources
Historic Preservation Office
Planning

State of Washington

STATE REPRESENTATIVE, SHELLY SHORT

STATE REPRESENTATIVE, JOEL KRATZ

DEPARTMENT OF AGRICULTURE

DEPARTMENT OF ECOLOGY, WATER RESOURCES

DEPARTMENT OF FISH AND WILDLIFE

DEPARTMENT OF NATURAL RESOURCES

OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

Counties

LINCOLN COUNTY

Weed Control Board Coordinator
Planning Department
County Commissioners

STEVENS COUNTY

Weed Control Board Coordinator
Planning Department
Federal Lands Advisory Committee
County Commissioners

FERRY COUNTY

County Commissioners
Planning Department
Weed Control Board Coordinator

Chamber of Commerce/Town Councils

ELECTRIC CITY

GRAND COULEE

KETTLE FALLS

TOWN OF COULEE DAM

DAVENPORT

Organizations and Educational Institutions

LAKE ROOSEVELT FORUM

NATIONAL PARKS AND CONSERVATION ASSOCIATION

NORTH CASCADES CONSERVATION COUNCIL

NORTH COLUMBIA FORESTRY ASSOCIATES

NORTHWEST ECOSYSTEM ALLIANCE

SIERRA CLUB

WASHINGTON STATE CATTLEMEN'S ASSOCIATION

WASHINGTON ENVIRONMENTAL COUNCIL

WASHINGTON STATE UNIVERSITY EXTENSION (LINCOLN AND FERRY COUNTY)

TRI COUNTY HEALTH



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