Exhibit 2

Boundary Hydroelectric Project (FERC No. 2144)

Terrestrial Resources Management Plan

Seattle City Light

March 2010

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List of Acronyms and Abbreviations

ATV	all-terrain vehicle
BLM	Bureau of Land Management
BMP	best management practice
BPA	Bonneville Power Administration
BWP	Boundary Wildlife Preserve
CNF	Colville National Forest
DHS	Department of Homeland Security
EAP	Emergency Action Plan
Ecology	Washington State Department of Ecology
FERC	Federal Energy Regulatory Commission
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FR	Forest Road
GIS	geographic information system
GPS	global positioning system
GRank	Global Rank
HPA	Hydraulic Project Approval
HPMP	Historic Properties Management Plan
I&E	interpretation and education
IWMP	Integrated Weed Management Program
kV	kilovolt
NAVD	North American Vertical Datum
NAWMA	North American Weed Management Association
NFS	National Forest System
NPDES	National Pollutant Discharge Elimination System
NWCB	Noxious Weed Control Board
PAD	Pre-Application Document
PCWCB	Pend Oreille County Weed Control Board
PHL	Project Habitat Lands
PLP	Preliminary Licensing Proposal
PM&E	Protection, Mitigation, and Enhancement
POC	Pend Oreille County
Project	Boundary Hydroelectric Project
PUD	Public Utility District
RCW	Revised Code of Washington
ROW	right-of-way
RP	Relicensing Participant
RRMP	Recreation Resources Management Plan
RTE	rare, threatened, or endangered

RRWG	Recreation Resources Work Group
SCL	Seattle City Light
TNC	The Nature Conservancy
TRMP	Terrestrial Resources Management Plan
TRWG	Terrestrial Resources Work Group
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USR	Updated Study Report
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington State Department of Natural Resources
WNHP	Washington Natural Heritage Program

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Terrestrial Resources Management Plan

Boundary Hydroelectric Project (FERC No. 2144)

1 INTRODUCTION

Seattle City Light (SCL) owns and operates the Boundary Project (FERC No. 2144) (Project), which is located on the Pend Oreille River in Pend Oreille County, Washington. The Project was constructed in the mid-1960s and operates under a license administered by the Federal Energy Regulatory Commission (FERC). The current license for the Project expires on September 30, 2011, and in accordance with FERC regulations, SCL must file its application for a new license no later than September 30, 2009.

As part of a comprehensive protection, mitigation, and enhancement (PM&E) program, SCL, in coordination with the relicensing participants (RPs), has prepared this Terrestrial Resources Management Plan (TRMP) to describe the measures that will be implemented over the next Project license period to protect and enhance plant and wildlife resources occurring within the FERC Project boundary or affected by Project-related operations. SCL will implement the final TRMP in coordination with a Terrestrial Resources Work Group (TRWG), which currently includes SCL and representatives from the U.S. Department of Agriculture, Forest Service (USFS), Washington Department of Ecology (Ecology), Washington Department of Fish and Wildlife (WDFW), U.S. Fish and Wildlife Service (USFWS), and the Pend Oreille County Weed Board (see Section 2.1.2 for more detail).

This introductory chapter of the TRMP provides general information on Project facilities and operations and the Project's environmental setting (Section 1.1). It also describes the purpose, scope, content, and organization of the TRMP (Sections 1.2 and 1.3).

1.1. Description of Project Area, Facilities, and Operations

The Project is located in the northeast corner of Washington State. The dam is located approximately 1 mile south of the U.S.-Canada border and 16 miles west of the Idaho border. Overall, there is relatively little development along the reservoir. Land along the reservoir is owned by SCL, the USFS, U.S. Department of Interior, Bureau of Land Management (BLM), Washington State Department of Natural Resources (WDNR), Pend Oreille County, and private entities. The communities of Metaline Falls and Metaline are located midway along the reservoir, on its east and west sides, respectively. Both sides of the northern portion of the reservoir, from Metaline Falls to Boundary Dam, are relatively inaccessible by road and are bordered mostly by land in federal ownership. Lands along the southern portion of the reservoir are a mixture of private and publicly owned parcels, including SCL's Boundary Wildlife Preserve (BWP). The western side of the reservoir south of Metaline is bordered by U.S. Highway 31.

1.1.1. Project Facilities

Boundary Dam is a 340-foot-high, variable-radius concrete arch dam and is situated in a narrow canyon and founded on interbedded limestone and dolomite of the Metaline Limestone formation. The dam impounds the Pend Oreille River to a normal maximum water surface elevation of 1,994 feet North American Vertical Datum (NAVD) 88[1], as measured in the forebay. The underground power plant was excavated within the massive rock forming the left abutment of the dam. Power from the Project is transmitted to a Bonneville Power Administration (BPA) interconnection via a 0.5-mile-long, 500-kilovolt (kV) transmission line.

Boundary reservoir extends approximately 17.5 miles south from Boundary Dam to the Box Canyon Dam tailrace. At its normal maximum water surface elevation (1,994 feet at the forebay), Boundary Reservoir has a surface area of approximately 1,794 acres, a shoreline length of roughly 47 miles, and a maximum depth in the forebay of approximately 270 feet. Inflows to the reservoir on annual, seasonal, and monthly time intervals are influenced by the operations of upstream projects.

Near the town of Metaline Falls, the Pend Oreille River passes through a bedrock-controlled constriction (elevation 1,970.6) that geographically divides the reservoir into two distinct reaches: an upstream reach that extends from Box Canyon Dam to Metaline Falls, and a downstream reach that extends from Metaline Falls to Boundary Dam. Depths in the upstream reach typically range from 10 to 25 feet, while the lower reservoir is much deeper.

1.1.2. Project Boundary and Operations

North of Metaline Falls, the current Project boundary is located 200 feet horizontally above the reservoir's normal maximum pool elevation (1,994 feet NAVD 88 at the forebay); south of Metaline Falls, the boundary follows specified contour lines that generally approximate the pre-Project ordinary high water line.

The Boundary Project is operated in a load-following mode that uses available water to deliver power during peak-load hours. The normal maximum reservoir water surface varies from elevation 1,994 feet at the forebay to 1,999 feet at the Box Canyon tailrace. The reservoir has relatively little active storage (about 40,843 acre-feet) within the maximum drawdown of 40 feet (active storage from elevation 1,994 NAVD 88 to elevation 1,954 NAVD 88 feet) authorized under the current license. Currently, SCL voluntarily restricts and maintains the summer forebay pool level to facilitate recreational access and use.

In its License Application, SCL proposes to formalize this operation as follows: from Memorial Day weekend (starting Friday evening) through Labor Day weekend (on Monday evening), forebay water surface elevations will be maintained at or above 1,984 feet NAVD 88 from 6:00 am through 8:00 pm. From 8:00 pm through 6:00 am, forebay water surface elevations will be maintained at or above elevation 1,982 feet NAVD 88. Under SCL's proposed operation, the 1,984 and 1,982 foot elevations would be license requirements that could not be violated except for conditions such as equipment failures, maintenance activities, electrical and mechanical

[1] Elevation values are in datum NAVD 88 unless otherwise noted.

device limitations, safety inspections, testing, natural disasters (e.g., lightning), compliance with WECC and NERC requirements, capacity and energy emergencies, and any event that triggers the Project Emergency Action Plan (EAP).

From Labor Day weekend to Memorial Day weekend, the Project will be operated as it currently is, with forebay water surface elevations generally fluctuating between 1,994 feet and 1,974 feet NAVD 88, although minimum forebay elevations will often be above 1,980 feet and will only occasionally be below 1,974 feet. The range of water surface elevations for dry (2001), average (2002), and wet (1997) inflow years is shown in Figures E.2-6 through E.2-8 of Exhibit E of SCL's License Application.

1.1.3. Environmental Setting

The Project is located in the Selkirk Mountains, a western extension of the Rocky Mountains. The topography surrounding the Project is relatively rugged, with nearby mountains rising more than 6,500 feet in elevation and intervening valleys ranging from approximately 2,000 to 2,400 feet. The Pend Oreille River bisects the Selkirk Mountains and cuts through the Metaline Limestone and Ledbetter Slate formations. These two formations predominate along Boundary Reservoir downstream of Metaline Falls and confine the reservoir to a narrow canyon. The adjacent area is characterized by cliffs, rock talus, and steep slopes (SCL 2006). In contrast, the area upstream of Metaline Falls consists predominantly of unconsolidated glacial sediments and river alluvial deposits. The river channel in this area is broader and the surrounding topography more moderate (SCL 2006).

The Project area is within the eastern portion of the Okanogan Highlands physiographic province, which lies east of the Cascade Range, north of the Columbia Basin, and extends into northern Idaho and southern British Columbia (Lasmanis 1991). The climate of the Okanogan Highlands has both continental and Pacific maritime aspects. The continental aspect results from a combination of the inflow of dry, cold air from the interior valleys of British Columbia and the rain shadow effect that the Cascade Mountains exert on most of eastern Washington. The maritime influence on climate primarily occurs in the eastern portions of the Okanogan Highlands, where the Selkirk Mountains intercept the westerly maritime air flow, resulting in greater precipitation than is typical in eastern Washington.

Within the Pend Oreille River valley in the vicinity of the Project, mean annual precipitation is approximately 27 inches. December and January account for about 25 to 35 percent of the annual precipitation, while July and August account for only 6 percent. On average, approximately 30 days each year have rainfall of at least 0.1 inches, and approximately 73 days receive at least 1.0 inch of snow. Winters are typically cold, and the snowpack normally covers all but the lowest elevations continuously from November through May (ENTRIX 2001). Summers are generally warm and sunny with periodic light rainfall, although localized thunderstorms occasionally cause heavier amounts of precipitation (Pend Oreille Conservation District 2004).

1.1.3.1. Vegetation

The influence of the maritime climate on the dominant vegetation types in the Selkirk Mountains is profound and likely exceeds the influence of geology and soils in most parts of the eastern Okanogan Highlands (Philip and Durke 1972). Vegetation zones, or climax vegetation, in the Project area include the Douglas-fir/Grand Fir Zone on drier sites and the Western Hemlock/Cedar Zone on more mesic sites (Williams et al. 1995). Forest communities in the Pend Oreille River valley, including the Project area, are characterized by a higher diversity of tree species than other regions in Washington. These species include:

Douglas-fir (*Pseudotsuga menziesii*)	Lodgepole pine (*Pinus contorta*)
Western hemlock (*Tsuga heterophylla*)	Ponderosa pine (*Pinus ponderosa*)
Western red-cedar (*Thuja plicata*)	Trembling aspen (*Populus tremuloides*)
Grand fir (*Abies grandis*)	Black cottonwood (*Populus balsamifera* ssp. *tricocarpa*)
Western larch (*Larix occidentalis*)	Paper birch (*Betula papyrifera*)
Western white pine (*Pinus monticola*)	

Most of the land within the Project area has been logged or burned within the last 80 years, and the forested slopes adjacent to the reservoir are dominated by second-growth Douglas-fir and western larch. Mixed stands of western red-cedar and western hemlock occur in ravines and other shaded, moist areas. Riparian and wetland communities are uncommon, particularly downstream of Metaline Falls, where they occur only in sheltered coves and at the mouths of the few tributary streams in this reach. One of the largest and most diverse wetland/riparian communities in the Project area occurs on the BWP. More detail on vegetation communities in the Project vicinity can be found in SCL's Preliminary Application Document (PAD; SCL 2006) and Updated Study Report (USR; SCL 2009).

Surveys conducted during relicensing documented 52 populations of 15 vascular plant species in the Project area that are considered rare, threatened, or endangered (RTE) by state and/or federal agencies. In comparison to other similarly sized areas, the Project area has a relatively large number of both RTE plant species and populations. Four RTE plant species–yellow mountain-avens (*Dryas drummondii*), least bladdery milk-vetch (*Astragalus microcystis*), orange balsam (*Impatiens aurella*), and purple meadowrue (*Thalictrum dasycarpum*)–are locally abundant.

Relicensing studies also documented 20 non-native plant species in the Project area that are listed as noxious weeds by the Washington State Noxious Weed Control Board (State NWCB). Most of these species, such as oxeye daisy (*Leucanthemum vulgare*), spotted knapweed (*Centaurea biebersteinii*), and orange hawkweed (*Hieracium aurantiacum*) are ubiquitous in northeastern Washington, particularly in open or disturbed areas. Reed canarygrass (*Phalaris arundinacea*), which is pervasive in wetland and riparian areas throughout Washington, dominates many of the islands and shorelines of Boundary reservoir, especially upstream of Metaline Falls.

1.1.3.2. Wildlife

The northeastern corner of Washington is unique because it encompasses the edges of several species' ranges, and thus supports a number of species more commonly found in areas farther

north or nearer to the coast, including several that occur nowhere else in the state. The combination of topography, geographical location, and diversity of vegetation communities in the Pend Oreille River valley and surrounding Selkirk Mountains results in high wildlife species richness, particularly for mammals and birds (Cassidy 1997).

In total, 307 wildlife species potentially occur in the general vicinity of the Project. Of these, more than 100 species were confirmed to occur within the Project area during reconnaissance inventories conducted in 2005 and wildlife studies conducted in 2007-2008. The bald eagle (*Haliaeetus leucocephalus*), which is State-listed as sensitive, is a year-round resident in the Project area. As of 2008, there were four bald eagle territories associated with Boundary reservoir; one at Everett Island and three upstream of Metaline Falls. The peregrine falcon (*Falco peregrinus anatum*), another State Sensitive species, was documented in 2008 and 2009 nesting on Washington Rock, a cliff that borders the Project boundary near Metaline Falls. The Project also supports all six swallow species that occur in Washington, including several large nesting colonies of bank swallows (*Riparia riparia*).

Three federally listed species that have been observed in the Project area are the grizzly bear (*Ursus arctos*), woodland caribou (*Rangifer tarandus caribou*), and Canada lynx (*Lynx canadensis*), although it appears that their use of the area is occasional and transitory. The gray wolf (*Canis lupus*), which is state listed as endangered, has expanded into northeastern Washington from Idaho and/or British Columbia, and there is some evidence that wolves occasionally use the Project area. Recently, the WDFW documented an active breeding wolf pack in Pend Oreille County. More detail on wildlife in the Project area can be found in the PAD (SCL 2006) and the USR (SCL 2009).

1.2. TRMP Purpose and Scope

The purpose of the TRMP is to provide for the protection, management, and enhancement of terrestrial resources occurring within the FERC Project boundary (Project area) or affected by Project-related operations.[2] The TRMP establishes the goals, measurable program objectives, tasks, and schedule for implementing the terrestrial resource protection, mitigation, and enhancement measures included in the Project license.

The TRMP presently addresses 1,911.4 acres of land (either currently contained within or proposed for inclusion into the Project boundary) owned by SCL, USFS, and BLM (Table 1.2-1). These lands include the following:

- **Project Habitat Lands (PHLs)** - Lands owned by SCL that will be managed to benefit terrestrial plant and wildlife communities (unless other management considerations/constraints are identified in the descriptions of the parcels in Section

[2] Acreage calculations in this TRMP are based on the Project boundary in Exhibit K of the existing Project license. In contrast, acreages presented in Exhibit A of the License Application are based on the updated depiction of the Project boundary in Exhibit G of the License Application. As such, the TRMP presents some acreage values that differ slightly from those presented in Exhibits A and G. In addition, the Project boundary shown on maps in this TRMP is the existing Project boundary of Exhibit K. For the location of the proposed Project boundary, see Exhibit G of the License Application. Upon issuance of the FERC license order, SCL intends to update maps and acreages as needed.

4). Specific habitat protection and enhancement measures will be implemented on PHLs, as well as weed and erosion control/monitoring and RTE plant and wildlife surveys. PHLs include the following:

- ***SCL-owned parcels located within the existing Project boundary*** *(472.4 acres):* These lands include the BWP, which has been managed for wildlife since it was purchased by SCL in 1987, and all or part of five other SCL-owned parcels or parcel groups that are located within the existing Project boundary.
- ***SCL-owned parcels proposed for inclusion within the Project boundary*** *(276.3 acres)*: One parcel of land currently owned by SCL will be brought into the Project boundary to be managed for wildlife. The BWP Addition (89 acres) was purchased in 1994 to protect it from being logged and to provide a buffer for the BWP. In addition, portions of three other SCL-owned parcels currently reside outside of the Project boundary and will be brought into the boundary to be managed as PHLs, including Tailrace East (86.9 acres), Everett Creek (82.7 acres), and Sullivan Creek (17.7 acres). The relicensing participants, including SCL, agreed to manage these parcels as PHLs because they contain habitat that would benefit wildlife. [Note: SCL is proposing to bring into the Project boundary other parcels of land that will be managed primarily for the benefit of other resources or as support areas for Project operations and will *not* be managed as PHLs.]
- ***PHLs to be purchased***: SCL will purchase one or more parcels to be managed as PHLs. The target for purchase is approximately 158 acres of habitat and approximately 13,022 lineal feet of land immediately adjacent to water. Water refers to perennial flat-water, stream, creek, wetland, pond, or seep. These targets do not represent absolute amounts that must be acquired and further, they may be applied to the same parcel(s) of land. Once acquired, the desired condition of the parcel(s) will be assessed and habitat protection and enhancement measures will be developed as appropriate (see Section 5.2, Objective 6).

Figure 1.2-1 shows the locations of all PHLs (except those to be acquired). More detail on existing and proposed SCL-owned PHLs can be found in Chapter 4.

- **SCL Project Facility Lands** - Lands that support Project facilities and operations, including the dam, power plant, warehouses, and approximately 3,000 feet of transmission line right-of-way (ROW) that link to the BPA Substation, as well as Project recreation facilities and Project roads; some of these lands are owned by SCL, others are not. These lands will be managed to prevent the degradation of natural resources on site or on adjacent lands. TRMP activities will include erosion and weed control/monitoring and the protection of RTE plant and wildlife populations that occur. Enhancement measures may be implemented where appropriate.
- **Other SCL Lands** - Lands owned by SCL, including small parcels, steep cliffs, or talus slopes that generally provide less habitat value than the PHLs. No specific management prescriptions are proposed for these lands except for weed and erosion

control/monitoring and RTE plant and wildlife surveys (to the extent the lands can be accessed).

- **Federal Lands** - Lands managed by the USFS and BLM. USFS lands are part of the Colville National Forest (CNF) and are managed under the CNF Land and Resource Management Plan, as amended (USFS 1988), which is currently being revised. BLM-managed lands are guided by the Spokane District Resource Management Plan, as amended (BLM 1985). TRMP activities on federal lands will include weed and erosion control/monitoring and RTE plant and wildlife surveys. Habitat protection and/or enhancement measures also may be conducted on federal lands where adverse Project-related effects are documented.

SCL lands and facilities are described in detail in Chapter 4. Specific management actions to be conducted on SCL-owned lands, wildlife and plant monitoring, and cooperative efforts on federally-owned lands are described in detail in Chapter 5.

Table 1.2-1. Lands covered by the TRMP.

Land designations	Acres
Project Habitat Lands (PHLs)	
SCL-owned parcels located within existing Project boundary	
• Tailrace East	27
• Forebay/Peewee Falls/Lower Canyon Lands	202.3
• Flusey/Everett Creek/Beaver Creek Meadow Lands	37.4
• Upper Canyon Lands	39.3
• Sullivan Creek	17.4
• BWP[1]	149[2]
Subtotal	***472.4***
SCL-owned parcels proposed for inclusion within the Project boundary[3]	
• Tailrace East	86.9
• Everett Creek	82.7
• Sullivan Creek	17.7
• BWP Addition	89[4]
Subtotal	***276.3***
PHL Total	**748.7**
SCL - Project Facility Lands	
• Tailrace East Recreation Lands (Vista House)	0.6
• Tailrace West Facilities	24.3
• Tailrace West – undeveloped[5]	101.9
• Forebay Facilities	31.2
• Forebay Recreation Area	8.5
• Dispersed Recreation Lands	N/A
Subtotal	***166.5***
SCL – Other Lands	
• Junction Isolate	1.5
• Cliff Isolate	1.3
• Mine Isolate	0.3
• Flume Creek	73.1
Subtotal	***76.2***
Federal Lands	
• USFS	606
• BLM	314
Subtotal	***920***
TRMP Total	**1,911.4**

Notes:

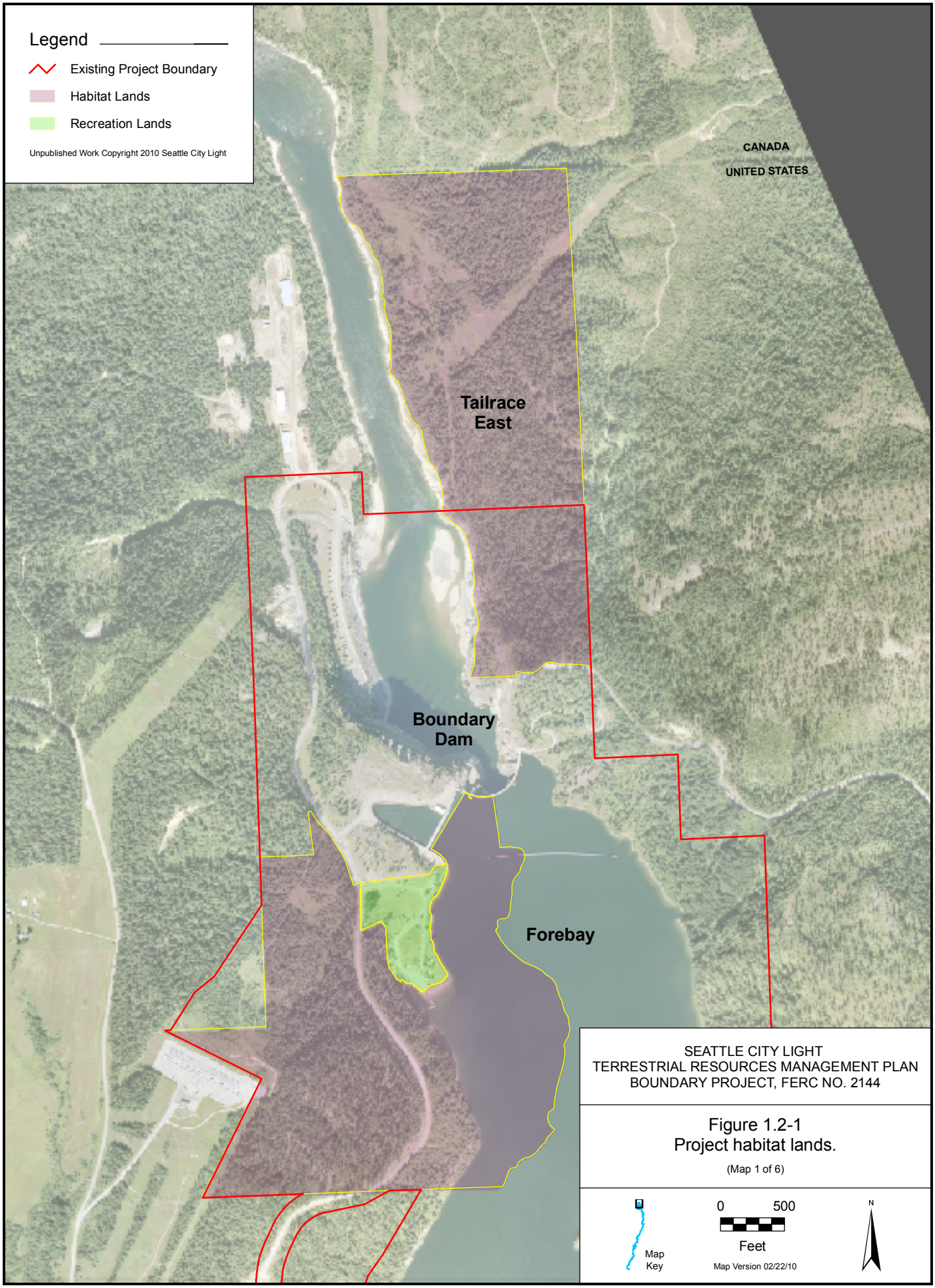
1 The BWP has been managed as a PHL under the current license although it was not brought into the Project boundary when it was purchased in 1994; it will be brought into the boundary under a new FERC license.

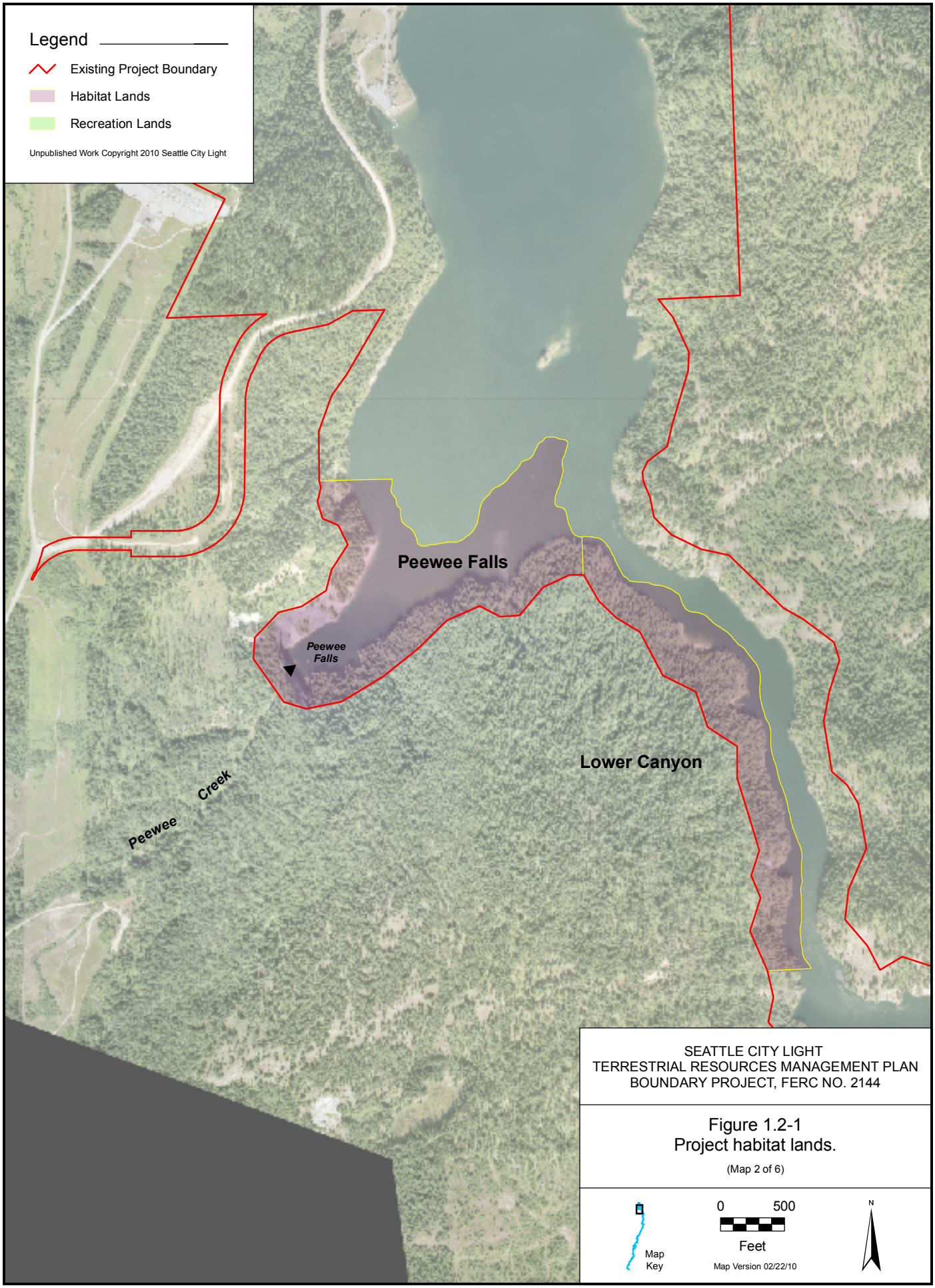
2 Due to parcel delineation updates, the total acreage for this parcel has been changed from the previously cited value of 155 acres.

3 The portions of SCL's Tailrace East, Everett Creek, Sullivan Creek, BWP Addition parcels currently residing outside of the existing Project boundary are being proposed for inclusion in the new FERC Project boundary.

4 The size of the BWP Addition is 89 acres, not 88 acres as previously reported.

5 SCL's Tailrace West parcel has been proposed for inclusion in the new FERC Project boundary; however, it will not be managed as a PHL.


Legend
Existing Project Boundary
Habitat Lands
Recreation Lands
Unpublished Work Copyright 2010 Seattle City Light
CANADA
UNITED STATES
Tailrace East
Boundary Dam
Forebay
SEATTLE CITY LIGHT
TERRESTRIAL RESOURCES MANAGEMENT PLAN
BOUNDARY PROJECT, FERC NO. 2144
Figure 1.2-1
Project habitat lands.
(Map 1 of 6)
Map Key
0
500
Feet
Map Version 02/22/10
N


Legend
Existing Project Boundary
Habitat Lands
Recreation Lands
Unpublished Work Copyright 2010 Seattle City Light
Peewee Falls
Peewee Falls
Lower Canyon
Peewee Creek
SEATTLE CITY LIGHT
TERRESTRIAL RESOURCES MANAGEMENT PLAN
BOUNDARY PROJECT, FERC NO. 2144
Figure 1.2-1
Project habitat lands.
(Map 2 of 6)
Map Key
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500
Feet
Map Version 02/22/10
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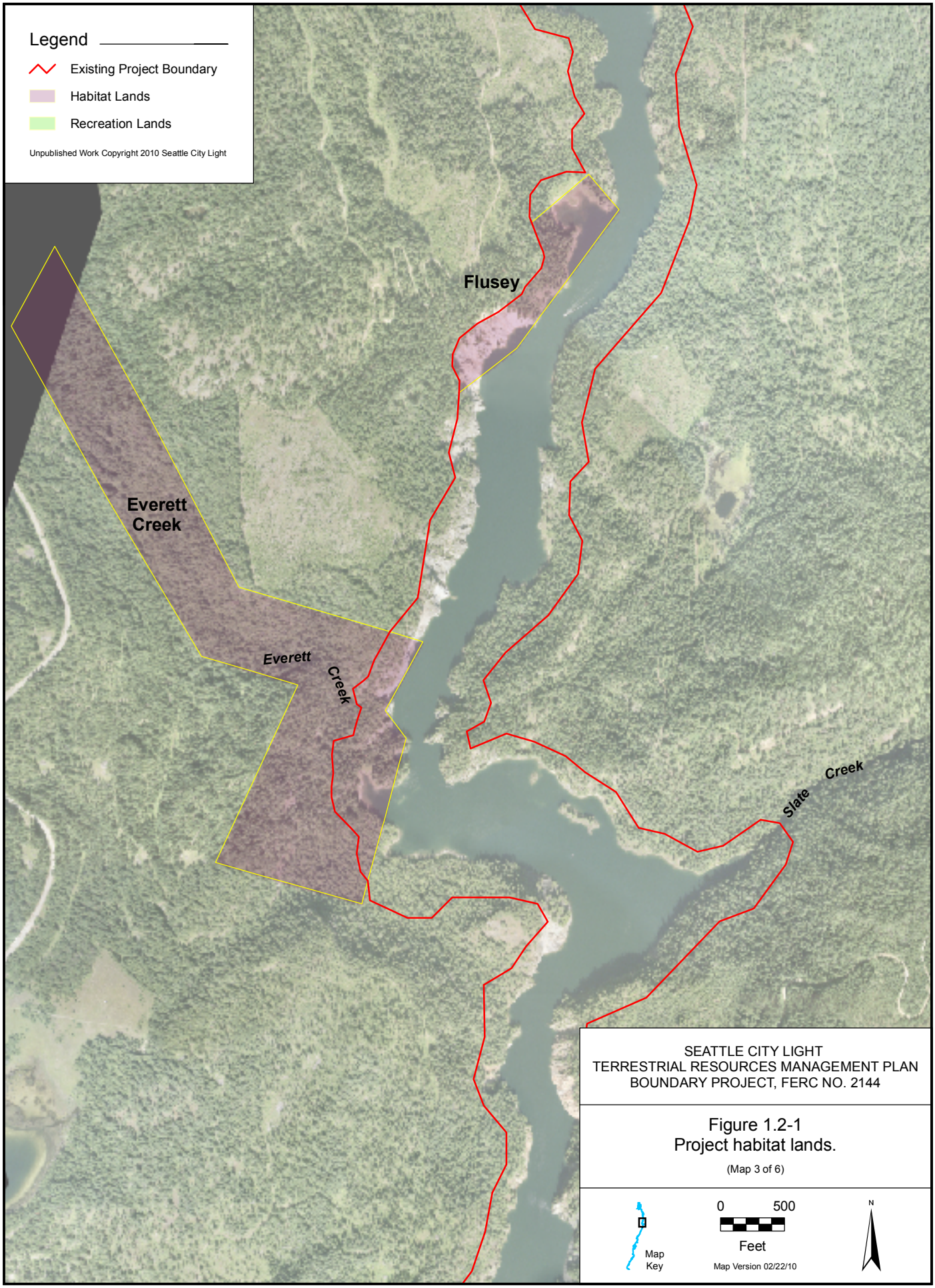
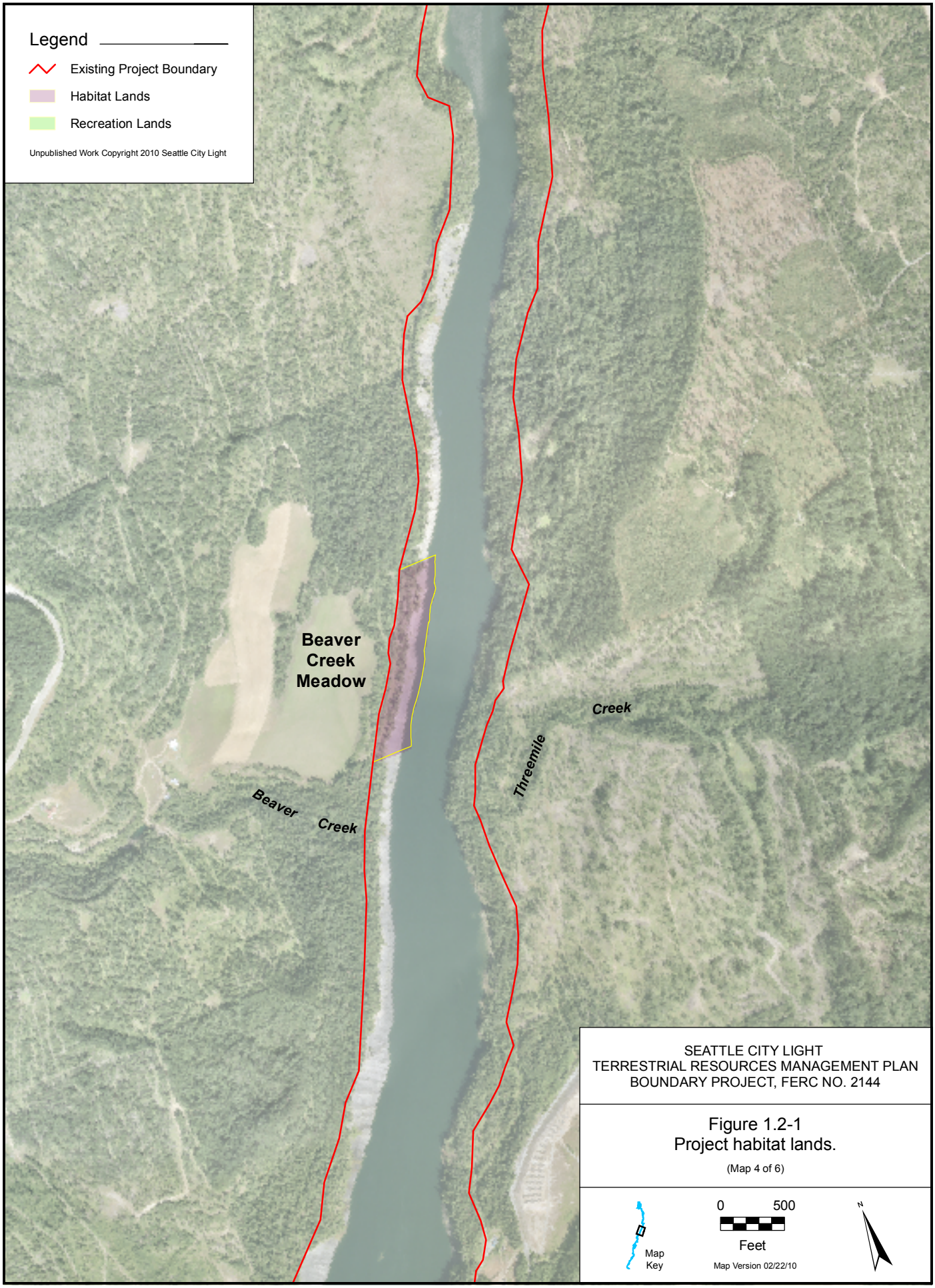

Legend
Existing Project Boundary
Habitat Lands
Recreation Lands
Unpublished Work Copyright 2010 Seattle City Light
Flusey
Everett Creek
Everett Creek
Slate Creek
SEATTLE CITY LIGHT
TERRESTRIAL RESOURCES MANAGEMENT PLAN
BOUNDARY PROJECT, FERC NO. 2144
Figure 1.2-1
Project habitat lands.
(Map 3 of 6)
Map Key
0
500
Feet
Map Version 02/22/10
N


Legend
Existing Project Boundary
Habitat Lands
Recreation Lands
Unpublished Work Copyright 2010 Seattle City Light
Beaver Creek Meadow
Beaver Creek
Threemile Creek
SEATTLE CITY LIGHT
TERRESTRIAL RESOURCES MANAGEMENT PLAN
BOUNDARY PROJECT, FERC NO. 2144
Figure 1.2-1
Project habitat lands.
(Map 4 of 6)
Map Key
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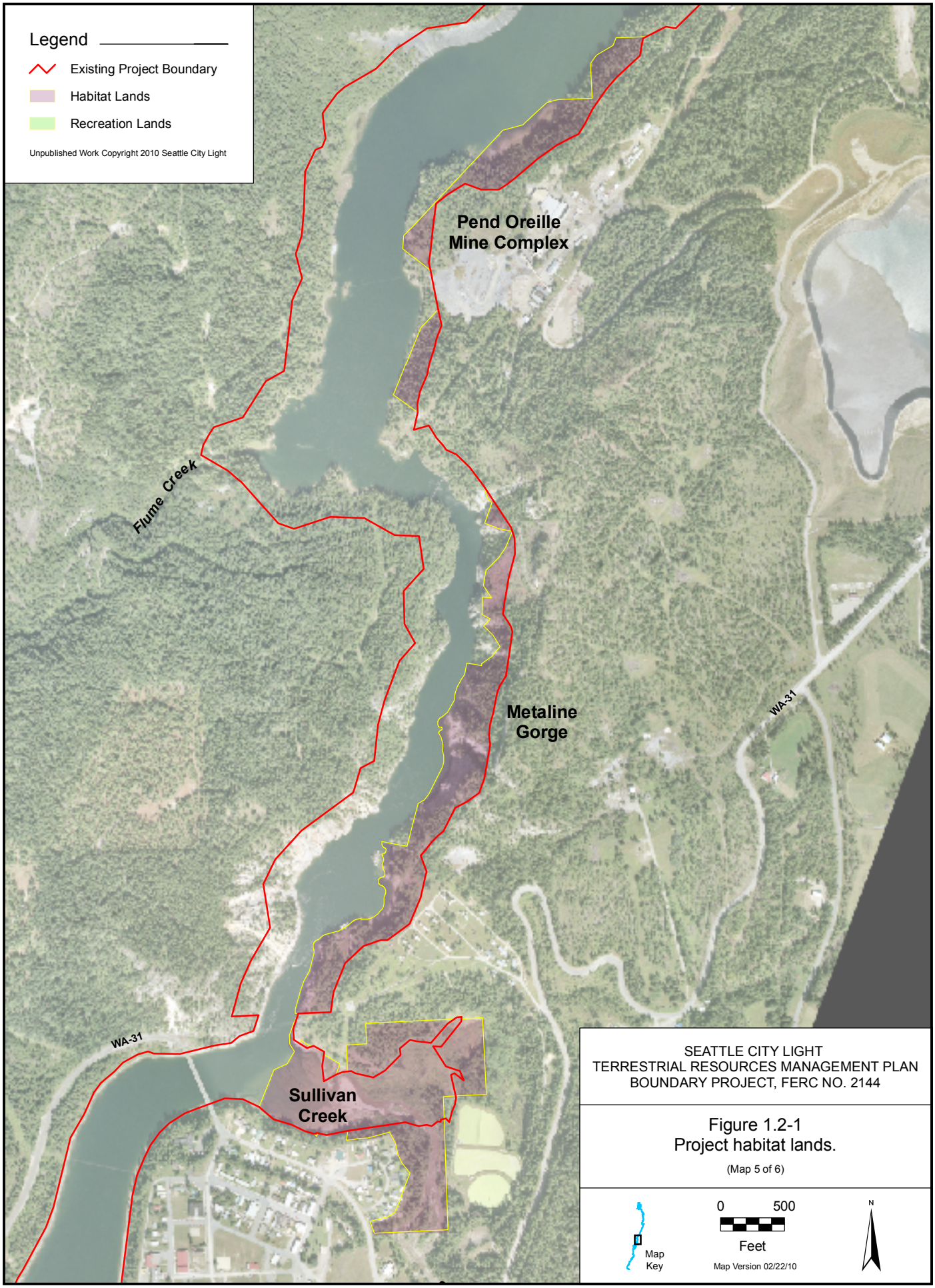
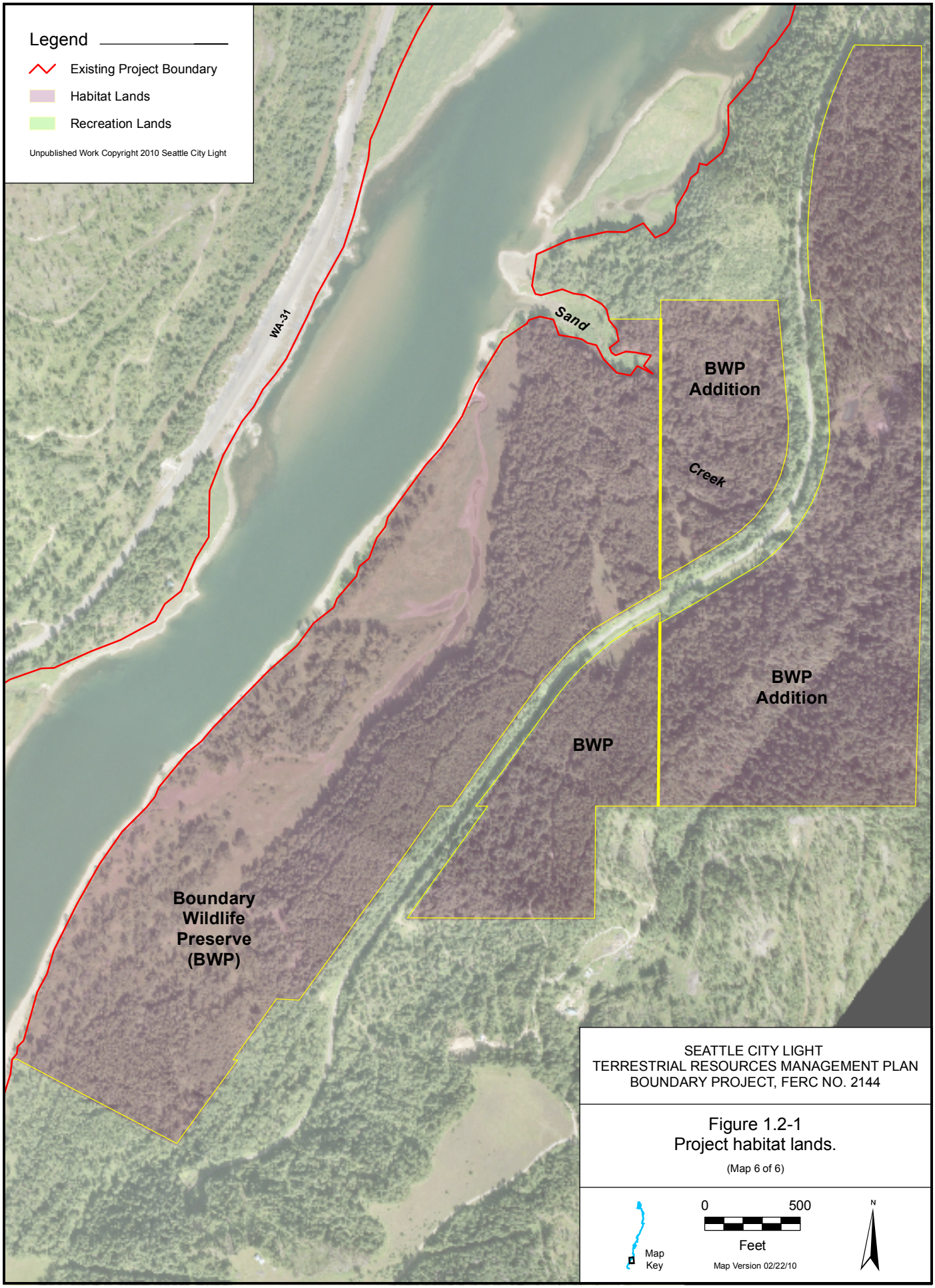
Feet
Map Version 02/22/10


Legend
Existing Project Boundary
Habitat Lands
Recreation Lands
Unpublished Work Copyright 2010 Seattle City Light
Pend Oreille
Mine Complex
Flume Creek
Metaline
Gorge
WA-31
WA-31
Sullivan
Creek
SEATTLE CITY LIGHT
TERRESTRIAL RESOURCES MANAGEMENT PLAN
BOUNDARY PROJECT, FERC NO. 2144
Figure 1.2-1
Project habitat lands.
(Map 5 of 6)
Map
Key
0
500
Feet
Map Version 02/22/10
N


Legend
Existing Project Boundary
Habitat Lands
Recreation Lands
Unpublished Work Copyright 2010 Seattle City Light
WA-31
Sand
Creek
BWP Addition
BWP Addition
BWP
Boundary Wildlife Preserve (BWP)
SEATTLE CITY LIGHT
TERRESTRIAL RESOURCES MANAGEMENT PLAN
BOUNDARY PROJECT, FERC NO. 2144
Figure 1.2-1
Project habitat lands.
(Map 6 of 6)
Map Key
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500
Feet
Map Version 02/22/10
N

1.3. TRMP Content and Organization

The TRMP is organized into the following seven chapters:

- **Chapter 1** - introduces the TRMP within the context of relicensing, describes Project facilities and operations and the Project's environmental setting, presents the purpose and scope of the TRMP, and provides an overview of document content and organization.
- **Chapter 2** - references TRWG formation and purpose, membership, coordination, roles, voting and consensus definitions, consultation, dispute resolution, agency involvement and approval, annual meetings, meeting minutes, and annual reports, as addressed in Section 8 of the Boundary Settlement Agreement (Settlement Agreement) and included as Appendix 2 in this TRMP.
- **Chapter 3** - provides the overarching goals for monitoring and managing terrestrial resources covered by the TRMP over the new license period. These goals form the foundation of the TRMP and are directed at mitigating Project effects, protecting habitats and species occurring within the Project boundary or affected by Project-related operations, and enhancing select habitats.
- **Chapter 4** - describes the lands to be managed under the TRMP. It addresses the physical location, existing conditions, previous land uses and management practices, desired conditions, and management considerations.
- **Chapter 5** - includes six individual resource management programs that are considered essential for protecting, mitigating, and/or enhancing terrestrial resources associated with the Project and describes each program's goals, objectives, and fundamental components and provides a monitoring and adaptive management process for these programs.
- **Chapter 6** - presents standard procedures and best management practices (BMPs) that apply throughout the entire Project area. These are intended to protect terrestrial resources from disturbance associated with Project operations, maintenance, and construction.
- **Chapter 7** - provides the references cited in the TRMP.

Monitoring/survey protocols and data forms associated with implementation of the TRMP and complete at the time of filing of this TRMP are included in Appendix 1. Protocols and data forms that require development or additional refinement are listed in Appendix 1 and will be submitted to FERC within 180 days after license issuance. At the time of submittal, SCL will request that FERC amend the TRMP to include the completed protocols.

2 ROLES AND RESPONSIBILITIES, COMMUNICATION, AND COORDINATION

SCL will convene the TRWG not later than 180 days after Commission issuance of the New Project License. Work Group formation and purpose, membership, coordination, roles, voting and consensus definitions, consultation, dispute resolution, agency involvement and approval,

annual meetings, meeting minutes, and annual reports are addressed in Section 8 of the Settlement Agreement (and included as Appendix 2 in this TRMP).

A detailed implementation schedule for all measures in the TRMP is provided in Appendix 3. The current draft of the schedule includes measures to be implemented within the first 10 years of the license period. Concurrent with the TRMP review, and as necessary amendment, to occur every 5 years, the implementation schedule will be amended to include the next 5-year period; the goal is for the TRWG to have a 10-year planning horizon from which to make management decisions. In accordance with License Article 3 and the TRWG procedures in Appendix 2, SCL shall prepare any proposed amendments to the TRMP in consultation with the TRWG and subject to approval by the United States Forest Service prior to filing with the Commission.

3 TERRESTRIAL RESOURCE GOALS

This chapter presents the goals that serve as the basis for the resource programs outlined in Chapter 5, Resource Management Programs. The goals reflect the overall intent of the TRMP to protect and enhance botanical and wildlife species and their habitats associated with the Project while providing for compatible human uses, and to avoid, minimize, or mitigate the effects of Project operations, maintenance, and construction activities. Each goal includes a number of sub-goals, and for each sub-goal, reference is made to the individual program(s) designed to address that sub-goal. Measurable objectives and associated tasks are described in detail for each program in Chapter 5 and Chapter 6, Management of Project-related Activities and Facilities.

Goal 1: Foster biodiversity, ecosystem function, and habitat connectivity within the Project area.

1a: Manage and monitor erosion at select sites and conduct long-term erosion monitoring along the Project reservoir (Erosion Program).

1b: Manage, enhance and protect wetland, upland, and riparian habitats on PHLs (Habitat Enhancement Program).

1c: Inventory and monitor select weed species on lands covered by the TRMP and control, suppress, and contain weeds on PHLs and in areas affected by the Project (Integrated Weed Management Program).

1d: Monitor and manage populations of select RTE plant species (RTE Plant Program).

1e: Monitor select wildlife species, including bald eagle (*Haliaeetus leucocephalus*), peregrine falcon (*Falco peregrinus*), and bank swallow (*Riparia riparia*) (Wildlife Program).

1f: Improve, enhance, and protect habitat diversity and function on PHLs (all programs).

Goal 2: Manage Project-related recreation and other human uses in a manner that is compatible with maintaining biodiversity, ecosystem function, and habitat connectivity.

2a: Manage Project-related recreation to minimize effects on wildlife and habitats (all programs).

2b: Protect shoreline habitats and associated RTE plant populations from trampling associated with over use, and control the development of docks and other shoreline structures (Shoreline Management Program).

2c: Protect wildlife from human interference during critical times of the year, close unneeded roads to improve habitat effectiveness, and reduce uncontrolled vehicle use on SCL lands within the proposed Project boundary (Travel and Public Access Management Program).

2d: Work cooperatively with the USFS and BLM to minimize effects on wildlife and habitats on their lands (all programs).

Goal 3: Avoid, minimize, or mitigate effects on wildlife and habitat from ongoing Project-related operations and maintenance.

3a: Educate Project personnel and contractors on ways to minimize the effects of ongoing Project-related operations and maintenance on wildlife and habitats (Management of Project-Related Activities and Facilities).

3b: Develop and implement appropriate planning guidelines and protection measures for avoiding, minimizing, and mitigating impacts from construction activities on wildlife and/or their habitats on a site-specific and Project-specific basis (Management of Project-Related Activities and Facilities).

3c: Implement BMPs to avoid or minimize adverse environmental effects of Project operations, maintenance, and construction activities (Management of Project-Related Activities and Facilities).

4 EXISTING AND DESIRED CONDITIONS OF PROJECT AREA LANDS

4.1. Project Habitat Lands (PHLs)

Approximately 749 acres of SCL-owned land within the proposed Project boundary will be managed for the benefit of wildlife and plant communities (with the exception of management needs/constraints addressed in this section); these parcels are designated as PHLs. This section describes the current and desired condition of the PHLs. Information for each parcel includes the following, where available:

- The geographic extent and condition of existing habitats.
- Known wildlife use.
- Presence of RTE plant populations.
- The ecological processes and past land uses that have influenced current vegetation communities and habitat conditions, if known.
- Observed human uses.
- Desired land/habitat conditions.
- Management considerations/constraints.

Information for each parcel was obtained during relicensing studies (2005-2008) and from observations made during a site visit by SCL in May 2009. In this section, PHLs are presented by location from north to south. Parcels that are partially within the existing Project boundary that also contain a portion proposed for inclusion into the boundary (e.g., the description of Tailrace East includes the 27 acres currently within the Project boundary and the 87 acres proposed for inclusion), are presented as one parcel, although the number of acres currently inside/outside the Project boundary is provided. Detailed descriptions of proposed habitat protection and enhancement measures are provided in Chapter 5, Resource Management Programs.

4.1.1. Tailrace East

The Tailrace East property (113.8 acres total; 27 acres currently within the Project boundary, 86.8 acres to be incorporated into the boundary) is dominated by early seral stage mixed conifer forest (Table 4.1-1). A number of seeps occur on the lower hill slope, particularly at the topographic break where the terrain transitions into the river terrace. The seeps likely contribute to the prevalence of western red-cedar on the slopes. Scattered fruit trees provide forage opportunities for Columbian white-tailed deer (*Odocoileus virginianus leucurus*), mule deer (*O. hemionus*), elk (*Cervus elaphus*), and black bear (*Ursus americanus*), and there is evidence that all of these species use this area. Two small excavated wetland/ponds are located on a bench about 40 feet above the river in a disturbed area. It appears that these small wetlands receive water from a combination of surface seeps and groundwater. There is a narrow band of cattails and rushes along the perimeter of the ponds. These ponds may provide resting habitat for waterfowl during migration and breeding habitat for some amphibians. Species observed on the site include osprey, bald eagle, Canada goose (*Branta canadensis*), painted turtle (*Chrysemys picta*), Columbia spotted frog (*Rana luteiventris*), muskrat (*Ondatra zibethicus*), bobcat (*Lynx rufus*), wild turkey (*Meleagris gallopavo*), and coyote (*Canis latrans*). Wolves might also be expected to use this area as a new pack has been confirmed in northeastern Pend Oreille County (south of the project), and wolves north of the international boundary were heard howling during relicensing studies of the Tailrace East property. Although the area to the north of this parcel has been logged recently and extensively, the shoreline likely serves as an important movement corridor for wildlife, particularly mammals. Cattle regularly trespass onto this parcel and may be contributing to the spread of weeds. The road leading to this parcel from atop the ridge may be used by B.C. Hydro to access their transmission line which crosses SCL land. No RTE plant species were found on this parcel.

Table 4.1-1. Vegetation associations on the Tailrace East parcel.

Vegetation Association	Tailrace East (acres)
Bedrock & Cliffs	0.7
Dry Meadow	11.3
Moist Mixed Coniferous Forest	96.4
Dry Mixed Coniferous Forest	1.5
Upland Shrub	0.6
Palustrine Emergent Wetland	0.4
Palustrine Scrub shrub	0.4
Palustrine Unconsolidated Bottom	0.1
Riparian Grass	0.1
Riparian Shrub	1.6
Riparian Deciduous Tree	0.1
Riverine Unconsolidated Shore	0.6
Total Acres	**113.8**

4.1.1.1. Desired Conditions

- A structurally diverse, mature, mixed conifer forest that provides wildlife habitat and contributes to ecological functions.
- Maintenance of dry meadow habitat to provide forage and maintain habitat diversity.
- Small areas of shrubland adjacent to the transmission line ROW within existing mature forest stands that provide habitat diversity at a landscape level, if consistent with resource agency management objectives.
- Seeps that continue to function and support the western red-cedar community and associated wildlife.
- Diverse vegetative composition and structure in and around existing ponds.
- Continued functional wildlife corridor.
- Livestock exclusion.
- No vehicle access (except for Project purposes), but continued pedestrian access for recreation.

4.1.1.2. Management Considerations/Constraints

- It will be necessary to coordinate with BPA and/or B.C. Hydro to determine the extent of vehicle access necessary to maintain the transmission line that crosses SCL-owned land.

- Soils and/or hydrology will influence the ability to improve the habitat associated with the ponds.
- Management measures that prohibit livestock from using the site will require the cooperation of adjacent land owners in Canada.
- A rare plant survey will be conducted on the portion of this parcel that is currently outside of the project boundary (but proposed for inclusion).

4.1.2. Forebay/Peewee Falls/Lower Canyon Lands

Three properties are included in this portion of the Project area: the Forebay, Peewee Falls, and the Lower Canyon lands (Table 4.1-2).

Table 4.1-2. Vegetation associations of the Forebay, Peewee Falls, and Lower Canyon lands.

Vegetation Association	Property (acres)		
	Forebay	**Peewee Falls**	**Lower Canyon**
Moist Mixed Conifer Forest	58.8	19.8	21.2
Dry Meadow	4.2	0.0	0.0
Bedrock & Cliffs	0.0	1.4	2.2
Erosion Areas	2.5	3.6	0.0
Lacustrine Unconsolidated Bottom	46.4	31.8	9.3
Lacustrine/Littoral Unconsolidated Shoreline	0.5	0.0	0.3
Palustrine Scrub Shrub	0.0	0.0	0.1
Palustrine Emergent Wetland	0.0	0.0	0.1
Lacustrine Emergent Wetland	0.0	0.0	0.1
Total Acres	**112.4**	**56.6**	**33.3**

4.1.2.1. Forebay

The Forebay property (112.4 acres, all within the Project boundary) includes a large stand of young mixed conifer forest that dominates the area upslope of the Forebay Recreation Area. Bald eagles and osprey often perch in trees here, and great blue herons (*Ardea herodias*) forage in the shallows of the reservoir. No RTE plants were recorded on this parcel. A portion of SCL's ownership of this parcel extends into the reservoir and will not be managed for terrestrial purposes.

4.1.2.1.1. Desired Conditions

- A structurally diverse, mature, mixed conifer forest that provides wildlife habitat and ecological functions.
- Native plant communities that are protected from human disturbances associated with the nearby Forebay Recreation Area (social trails, trash, wood cutting).

4.1.2.1.2. Management Considerations/Constraints

Habitat protection and management will need to be coordinated with implementation of the Recreation Resource Management Plan (RRMP) (Exhibit 3 of the Settlement Agreement).

4.1.2.2. Peewee Falls

The Peewee Falls parcel (56.6 acres, all within in the Project boundary) includes the shoreline of the reservoir, steep slopes between the uplands and riparian edge, and Peewee Falls. Much of the area is extremely steep and dominated by moist mixed conifer forest and cliffs. Because of the steepness of the terrain, it is considered marginal as habitat for big game but is used by a variety of bird species. Moderate-sized snags are available, and evidence of foraging by woodpeckers is common. Peewee Falls provides potential habitat for nesting black swifts (*Cypseloides niger*) in the rock cliff behind the waterfall, but no individuals were observed here during relicensing studies. Bank swallows have been observed nesting in a steep, eroded area east of the falls. No RTE plants were recorded for this parcel. A portion of SCL's ownership of this parcel extends into the reservoir and will not be managed for terrestrial purposes.

4.1.2.2.1. Desired Conditions

A structurally diverse, mature, mixed conifer forest, where possible, that provides ecological functions and habitat for songbirds and woodpeckers.

4.1.2.2.2. Management Considerations/Constraints

Because of the steepness of the terrain and lack of resource concerns, it is unlikely that this parcel would benefit from active habitat management.

4.1.2.3. Lower Canyon

The Lower Canyon parcel (33.3 acres, all within the Project boundary) includes cliffs, talus slopes, mixed conifer forest, and patches of Sitka alder (*Alnus sitchensis*). This area of the canyon appears to be used regularly by deer and elk to cross the river, as the terrain is less steep, the reservoir is relatively narrow, and human use is low. Canada geese make limited use of cliff faces for nesting, and roosting bats have been observed in two caves within this parcel. Three populations of Steller's rockbreak (*Cryptogramma stelleri)* and yellow mountain avens and two populations of wirestem muhly (*Muhlenbergia mexicana* var. *mexicana)* and purple meadowrue occur on this parcel. A portion of SCL's ownership of this parcel extends into the reservoir and will not be managed for terrestrial purposes.

4.1.2.3.1. Desired Conditions

- A structurally diverse, mature, mixed conifer forest, where possible, that provides ecological functions and wildlife habitat, including cover for big game.
- A functional wildlife corridor with suitable locations for crossing the reservoir.
- Undisturbed cave habitat for roosting bats.
- Undisturbed RTE plant populations.

4.1.2.3.2. Management Considerations/Constraints

Any measures to protect the caves on this site will need to be balanced against drawing unwanted attention to them.

4.1.3. Flusey/Everett Creek/Beaver Creek Meadow Lands

This group of SCL-owned lands along the reservoir includes three SCL properties: the Flusey, Everett Creek, and Beaver Creek Meadow parcels (Table 4.1-3).

Table 4.1-3. Vegetation associations of the Flusey/Everett Creek/Beaver Creek Meadow lands.

Vegetation Association	Property (acres)		
	Flusey	**Everett Creek**	**Beaver Creek Meadow**
Bedrock & Cliffs	3.7	1.5	3.1
Moist Mixed Conifer Forest	4.4	88.1	0.3
Upland Shrub	1.0	0.0	0.0
Timber Harvest	0.0	3.9	3.5
Palustrine Emergent Wetland	0.1	0.7	0.0
Palustrine Scrub Shrub	0.0	0.8	0.0
Aquatic Bed	0.6	0.0	0.0
Lacustrine Emergent Wetland	0.3	0.1	0.0
Lacustrine/Littoral Unconsolidated Bottom	3.1	0.1	0.0
Lacustrine Unconsolidated Shore	0.6	0.4	0.0
Lacustrine Unconsolidated Bottom	0.0	1.3	2.5
Total Acres	**13.8**	**96.9**	**9.4**

4.1.3.1. Flusey

The Flusey parcel is a 13.8 acre strip along the west side of the canyon, all within the Project boundary. Most of the parcel is steep, although there are a few areas of moderate terrain that allow big game access to the reservoir shoreline. A Canada lynx was observed crossing the reservoir in this narrow section of the canyon during relicensing studies. Young mixed forest dominates the vegetated portions of the site (Table 4.1-3). Some mature Douglas-fir and ponderosa pine occur in scattered areas along the shoreline, providing habitat for roosting dusky grouse (*Dendragapus obscurus*) and perch sites for bald eagles. Beaver (*Castor canadensis*) are commonly observed here, and there is a bank den on the northern boundary of the parcel. Mule deer and white-tailed deer have been observed foraging in a small cove on the parcel, which also supports a number of RTE plants and a small stand of Sitka alder. Single populations of each of the following species occur on this parcel: kidney-leaved violet (*Viola renifolia*), common northern sweetgrass (*Hierochloe odorata*), wirestem muhly, yellow mountain avens, and orange balsam. Evidence of dispersed camping use (e.g., fire rings, trampled vegetation, and cut vegetation) was observed on several small, flat areas adjacent to the reservoir's edge. A portion

of SCL's ownership of this parcel extends into the reservoir and will not be managed for terrestrial purposes.

4.1.3.1.1. Desired Condition

- A structurally diverse, mid-seral to mature mixed conifer forest that provides ecological functions and wildlife habitat.
- A functional wildlife corridor and associated river crossing.
- Habitat that continues to support RTE plant populations.
- No dispersed camping use.

4.1.3.1.2. Management Considerations/Constraints

Signage to restrict camping will need to be coordinated with implementation of the RRMP.

4.1.3.2. Everett Creek

The Everett Creek parcel (96.9 acres total; 14.2 acres currently within the Project boundary, 82.7 acres to be incorporated into the boundary) includes steep slopes of young mixed conifer forest, mature mixed conifer forest, and the mouth of Everett Creek (Table 4.1-3). The parcel extends as a narrow corridor upslope from the reservoir roughly following Everett Creek. The upper slopes are dominated by mid-seral stage conifer forest. There are several rock outcrops and benches along the upper slopes of the parcel. A number of large conifers and snags occur along the lower portion of this stream, which provide valuable habitat for woodpeckers and songbirds and perch sites for raptors. The forest provides cover for big game but lacks a well-developed understory that would provide forage for big game or cover for game birds. The drainage offers a corridor connection for big game between forage habitat in the meadows upslope and the reservoir. A pair of bald eagles has regularly been observed here, but no nest site has been located, and it is unlikely that the nest is within the Project boundary. Three populations of wirestem muhly and three of purple meadowrue occur on the property near the mouth of Everett Creek. A portion of SCL's ownership of this parcel extends into the reservoir and will not be managed for terrestrial purposes.

4.1.3.2.1. Desired Conditions

- A structurally diverse, mid-seral to mature mixed conifer forest that provides ecological functions and wildlife habitat.
- Continued maintenance of the riparian community along Everett Creek.
- Diverse vegetative composition and structure along the riparian zone and in the mixed conifer forest.
- Continued function as a wildlife travel corridor and reservoir crossing site.
- A source of large snags for woodpeckers and other cavity-nesting species.

4.1.3.2.2. Management Considerations/Constraints

- A rare plant survey will be conducted on the portion of this parcel that is currently outside of the Project boundary (but proposed for inclusion).

4.1.3.3. Beaver Creek Meadow

The Beaver Creek Meadow parcel (9.4 acres, all within the Project boundary) consists of a steep, eroding slate slope and a narrow band of mixed conifer forest on top of the slope (Table 4.1-3). This parcel is regularly traversed by elk and deer that forage in adjacent meadows outside the Project area and then cross the reservoir. Well-used big game trails are evident, leading down weaknesses in the steep and eroding slate slope. No RTE plants were recorded on this parcel. A portion of SCL's ownership of this parcel extends into the reservoir and will not be managed for terrestrial purposes.

4.1.3.3.1. Desired Conditions

Continued function as a wildlife travel corridor and resting site for deer and elk that extensively use the adjacent private property.

4.1.3.3.2. Management Considerations/Constraints

None identified.

4.1.4. Upper Canyon Lands

Two properties and one complex of parcels are included in this reach of the reservoir: The Pend Oreille Mine Complex (two separate properties) and the Metaline Gorge properties are described in Table 4.1-4.

4.1.4.1. Pend Oreille Mine Complex

The Pend Oreille Mine Complex (14.4 acres, all within the Project boundary) includes a series of small parcels between the Pend Oreille Mine and the reservoir that are dominated by young mixed conifer forest (Table 4.1-4). The habitat is generally unexceptional and functions as a travel corridor for deer moving between the reservoir shoreline and the open grass forage habitat associated with the developed mine areas. One population each of wirestem muhly, adder's tongue (*Ophioglossum pusillum*), and orange balsam and three populations of purple meadowrue occur on this parcel. Evidence of dispersed camping was observed at two flat areas adjacent to the reservoir's edge. A portion of SCL's ownership of this parcel extends into the reservoir and will not be managed for terrestrial purposes.

Table 4.1-4. Vegetation associations of the Upper Canyon lands.

Vegetation Association	Property (acres)	
	Pend Oreille Mine Complex	**Metaline Gorge**
Bedrock & Cliffs	0.0	8.2
Moist Mixed Conifer Forest	11.6	9.1
Dry Mixed Conifer Forest	0.0	0.7
Erosion Areas	0.1	1.0
Palustrine Emergent Wetland	0.9	0.0
Perennial Grassland	0.0	0.7
Timber Harvest	0.0	1.5
Upland Shrubs	0.0	0.5
Disturbed/Developed	0.0	0.4
Lacustrine Unconsolidated Bottom	1.0	2.4
Lacustrine Unconsolidated Shore	0.8	0.1
Palustrine Scrub-Shrub	0.0	0.1
Riverine Unconsolidated Shore	0.0	0.2
Total Acres	**14.4**	**24.9**

4.1.4.1.1. Desired Conditions

- Continued function as a wildlife travel corridor that will improve in value as the forest matures.
- No dispersed camping use of limited flat areas along the reservoir.
- Habitat that continues to support RTE plant species.

4.1.4.1.2. Management Considerations/Constraints

Signage to restrict camping will require coordination with implementation of the RRMP.

4.1.4.2. Metaline Gorge

The Metaline Gorge parcel (24.9 acres, all within the Project boundary) is dominated by rock bluffs and outcrops with sparse vegetation that has little value as wildlife habitat. Raptors perch on the cliffs and bats may use some cervices in the rock as daytime roost sites. Yellow-bellied marmots (*Marmota flaviventris*) and violet-green swallows (*Tachycineta thalassina*) likely use these areas as well. One population of yellow mountain avens and one of purple meadowrue occur on this parcel. Because of the steep terrain, the area does not experience human use. A portion of SCL's ownership of this parcel extends into the reservoir and will not be managed for terrestrial purposes.

4.1.4.2.1. Desired Condition

- Continued function as habitat for perching raptors, swallows, marmots, and possibly roosting bats.
- Habitat that continues to support RTE plant species.

4.1.4.2.2. Management Considerations/Constraints

None identified.

4.1.5. Sullivan Creek

The Sullivan Creek parcel (35.1 acres total; 17.4 acres currently within the Project boundary, 17.7 acres to be incorporated into the boundary), located at the mouth of the creek, includes a mixture of riparian deciduous forest, grass and shrub habitat, open water ponds, wetlands, and mixed forest (Table 4.1-5). The complex is located adjacent to the creek on a wide bench at the confluence with the reservoir. The area is used by Canada geese, wood ducks (*Aix sponsa*), northern flickers (*Colaptes auratus*), tree swallows (*Tachycineata bicolor*), violet green swallows (*T. thalassina*), and great blue herons for nesting. Other wildlife observed include ospreys, a variety of bats (*Myotis* spp.), Pacific treefrogs (*Pseudacris regilla)*, beavers, river otters (*Lontra canadensis*), mule deer, and white-tailed deer. The parcel has a high wildlife habitat value because of the diversity and interspersion of vegetation communities and its adjacency to upland forested land and water. A small (0.8 acre) stand of mature cottonwood occurs along the southern border of this parcel and extends off site. One population of orange balsam and two populations of purple meadowrue occur on this parcel. A portion of SCL's ownership of this parcel extends into the reservoir and will not be managed for terrestrial purposes.

Table 4.1-5. Vegetation associations of the Sullivan Creek parcel.

Vegetation Association	Sullivan Creek Parcel (acres)
Bedrock & Cliffs	0.2
Disturbed	0.2
Mixed Deciduous/Conifer	3.2
Moist Mixed Conifer Forest	3.8
Upland Shrub	0.1
Palustrine Aquatic Bed	0.6
Palustrine Scrub Shrub	0.2
Riparian Deciduous Tree	4.9
Riparian Grass	2.2
Riparian Shrub	9.0
Riverine Unconsolidated Bottom	7.1
Lacustrine Unconsolidated Bottom	0.2
Lacustrine/Littoral Unconsolidated Shore	0.4
Riverine Unconsolidated Shore	3.0
Total Acreage	**35.1**

4.1.5.1. Desired Conditions

- A riparian deciduous forest community with age and structural diversity.
- An interspersed mix of wetland, riparian, and upland habitats.
- Habitat connection between upper Sullivan Creek and the reservoir that allows for wildlife movement and genetic exchange for a diverse array of plants and wildlife.
- Habitat that continues to support RTE plant species.

4.1.5.2. Management Considerations/Constraints

- Inability to manage water levels may restrict the ability to achieve ideal age and structural conditions of the riparian forest stands.
- A rare plant survey will be needed on the portion of this parcel that is currently outside of the project boundary (but proposed for inclusion).
- Monitoring will be needed to ensure that recreation use of the planned portage trail does not adversely affect terrestrial resources.

4.1.6. Boundary Wildlife Preserve (BWP) and BWP Addition

4.1.6.1. Boundary Wildlife Preserve

The 149-acre[3] BWP consists of backwater sloughs, wetlands, river terraces, and adjacent forested slopes (Table 4.1-6). The river terrace areas include grassland meadows, fruit trees, and riparian forest stands consisting of mature black cottonwood stands and aspen with an understory of snowberry (*Symphoricarpos albus*) and hawthorn (*Crataegus douglasii*). The adjacent slopes and uplands support dense stands of young mixed conifer forest that have virtually no understory. There are also a few openings in the upland forest stands that are dominated by grasses and forbs and that appear to be heavily used by big game for foraging. Moose (*Alces alces*), elk, mule deer, and white-tailed deer are regularly observed in the BWP and the area provides both cover and forage habitat for these species. Bald eagles and Canada geese have nested on the site. Black bear and turkey (*Meleagris gallopavo*) use the area, along with a variety of songbirds, woodpeckers, and other cavity-nesting species. The BWP and BWP Addition (see below) provide a large, contiguous block of habitat that connects the reservoir to vast tracts of forests in the Colville National Forest. Two populations of least bladdery milk-vetch and seven large populations of purple meadowrue are located on the BWP.

The BWP is used by snowmobiles and all-terrain vehicles (ATV), which damage habitat and disturb wildlife. Road access to the BWP is from atop the adjacent ridge via a single road leading from a railroad right-of-way or from a road that parallels the river and crosses the BWP and adjacent properties.

[3] Due to parcel delineation updates, this summation has been changed from the previously cited value of 155 acres.

4.1.6.1.1. Desired Conditions

- A structurally complex, multi-aged multi-storied, self-sustaining riparian deciduous forest (e.g., cottonwood, aspen and willow species) along the reservoir that provides habitat for multiple wildlife species and ecological functions.
- Riparian and wetland herbaceous/shrub communities that are structurally diverse and dominated by native species.
- Functional habitat connections between adjacent upland forest and reservoir shoreline.
- A multi-aged, multi-storied upland conifer forest that supports a diverse understory of shrubs, grasses, and forbs.
- Mixed conifer forest openings that support a diversity of native herbaceous and shrub species used by big game for foraging.
- No use by ATVs or snowmobiles.
- Habitat that continues to support RTE plants and wildlife.

4.1.6.1.2. Management Considerations/Constraints

- Existing vehicular use of the railroad right-of-way and from adjacent private property may limit the ability to effectively restrict motorized access.
- Restricting access onto the BWP will require an assessment of existing use patterns, topography, and vegetation.
- The dense mixed conifer stands and high fuel loads on the slope between the railroad right-of-way and the wetlands and riparian areas limit the potential for greater wildlife habitat diversity in this area.
- The presence of such a large expanse of reed canarygrass on some portions of the BWP will influence the ability of native herbaceous plant species to become established at this site.
- The beaver and big game populations in the area will influence the establishment and survival of native tree and shrub species on portions of the BWP.

Table 4.1-6. Vegetation associations of the BWP and BWP Addition lands.

Vegetation Association	**Property**	
	BWP	**BWP Addition**
Erosion Areas	0.4	0.0
Moist Mixed Conifer Forest	72.8	80.1
Mixed Deciduous/Conifer Forest	10.1	0.0
Palustrine Emergent Wetland	21.2	0.6
Palustrine Forested Wetland	27.3	0.0
Palustrine Unconsolidated Bottom	0.0	0.2
Palustrine Scrub-Shrub Wetland	10.5	1.2
Riparian Shrub	0.6	0.0
Riparian Deciduous Tree	0.2	0.0
Timber Harvest	0.0	6.8
Upland Shrub	2.4	0.3
Lacustrine/Littoral Unconsolidated Shore	3.3	0.0
Total Acres	**149**	**89**

4.1.6.2. BWP Addition

The BWP Addition (89 acres[4]) consists of young mixed conifer forest and two excavated ponds (Table 4.1-6). Because of the cover afforded by the mixed conifer forest, its size, and its position adjacent to the BWP and other forested landscapes, this parcel provides good hiding and thermal habitat for big game and a protected travel corridor between the reservoir and the adjacent uplands. Two excavated ponds are located in the west central portion of the site, adjacent to the railroad corridor. Beaver have modified one of the ponds and dammed the outlet of the small creek that flows through the site. There is a perennial stream (Sand Creek) that flows north to northwest through the parcel that provides for a diverse riparian community. Additionally, there are seeps that flow into Sand Creek from the north, immediately east of the railroad tracks. These seeps allow cottonwood and aspen stands to develop. There are no records of RTE plants on this parcel, but it was not included in the 2008 relicensing study area for RTE plants.

4.1.6.2.1. Desired Conditions

- Mixed conifer forest of mid- to late seral stages interspersed with openings containing native herbaceous and shrub vegetation that provides connectivity to the BWP, forage and cover for big game, and nesting habitat for birds.
- Maintenance of the existing diverse deciduous tree and shrub habitats associated with the seeps and the lower portion of Sand Creek.
- A diverse scrub-shrub wetland community along the southern excavated pond adjacent to the railroad right-of-way.

[4] The size of the adjoining SCL-owned parcels is 89 acres, not 88 acres as previously reported.

4.1.6.2.2. Management Considerations/Constraints

- Wetland enhancement will be considered but will require study of the hydrology and soil conditions of this system.
- A RTE plant survey will need to be conducted to help establish a land management baseline condition for this parcel.

4.2. Other SCL Lands

Other SCL-owned lands in the Project area are relatively small parcels that are isolated, on steep terrain, and are dominated by cliffs or talus. The habitat value of these lands is minimal. The Junction Isolate, Cliff Isolate, and Mine Isolate parcels have a combined total area of 3.1 acres and none of the parcels is adjacent to other SCL lands. The Junction Isolate, a 1.5 acre parcel, is essentially the right-of-way for the upper part of the West Side Access Road leading down to the dam and provides no habitat value. The Cliff Isolate is a 1.3-acre parcel of young mixed conifer forest, and the Mine Isolate is a 0.3-acre parcel of mixed conifer forest. The Flume Creek parcel is a 1-mile-long reach of the reservoir that includes the mouth of Flume Creek and Deadman's Eddy. A small amount (2.0 acres) of terrestrial habitat is associated with this 73.1 acre primarily riverbed parcel, and is of marginal habitat value. Waterfowl are occasionally observed in the eddy (including wood ducks), and this stretch of the river is regularly crossed by deer and elk. No specific management actions are included for these lands, but RTE plant and wildlife monitoring and weed monitoring and control will be conducted as appropriate.

4.3. Project-related Roads, Facilities, and Use Areas

While the habitat and ecological value of most Project roads and facility areas may not be significant, the management and maintenance of these areas is important to protect existing natural resource values on these parcels, as well as on adjacent lands. Weeds growing along Project roads and erosion along steep banks, as well as maintenance activities such as brushing, paving, and grading, have the potential to cause adverse effects to resources such as the few RTE plant populations that occur near Project facilities. As discussed in Chapter 6, SCL will consider the potential impacts of any planned activities that may affect habitat and ecological values on all lands in the Project area.

4.3.1 Project-Related Roads

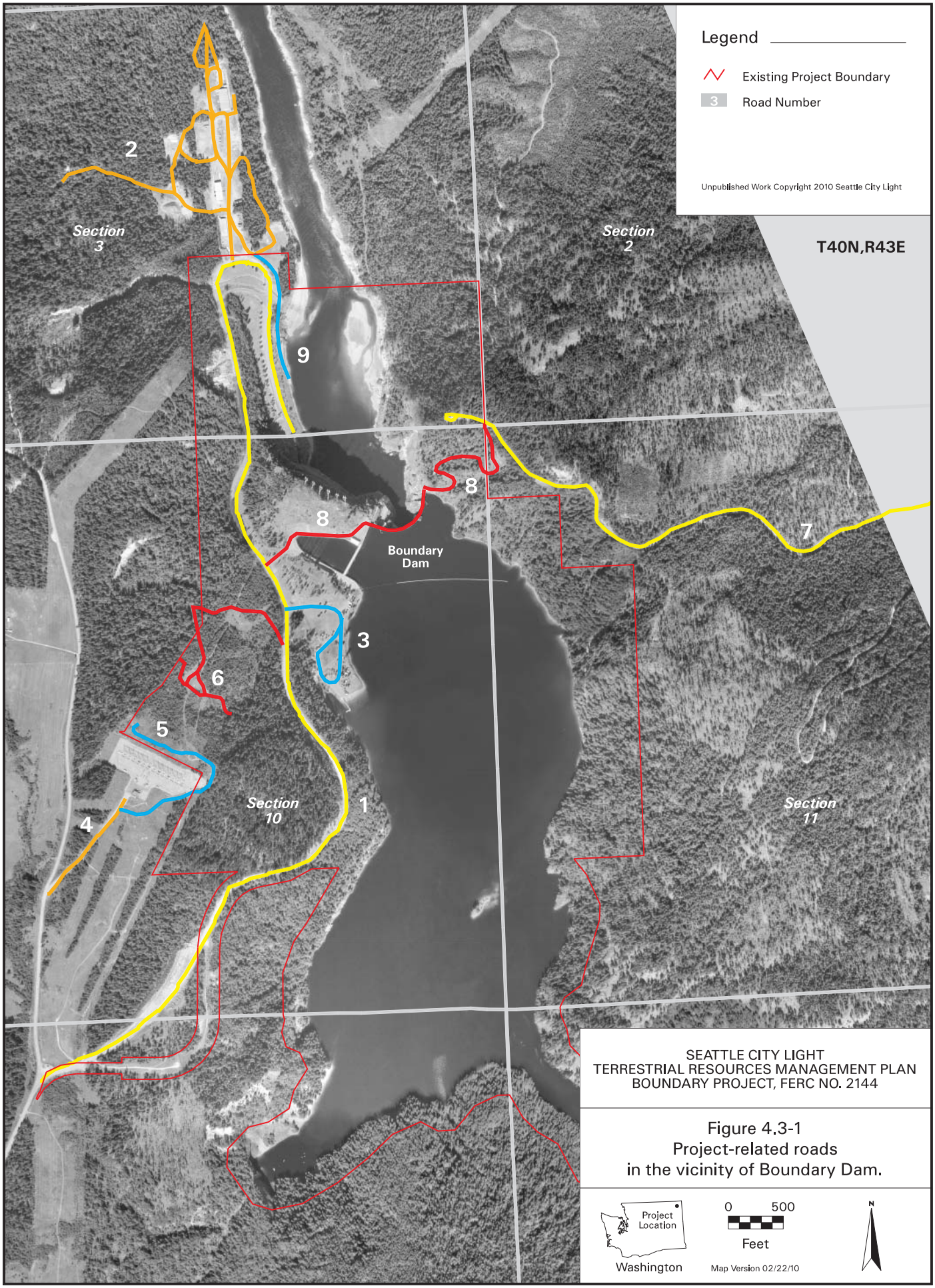
SCL has identified twelve roads in the Project vicinity that are used for Project-related purposes (Table 4.3-1). Figure 4.3-1 shows the roads in the vicinity of Boundary Dam. Some of these roads are used exclusively by SCL, although some are also used by other parties. Approximately three miles of the Project-related roads are paved; the remaining miles are dirt or crushed rock and bordered by native or naturalized vegetation. Forest Service roads to the proposed recreation sites at the Riverside Mine and Pee Wee Falls overlooks (Roads 3100172, 3165325 and 3165315) shall be reconstructed and maintained by SCL as provided in the USFS Draft Preliminary 4(e) Terms and Conditions filed as Exhibit 12 to the Boundary Relicensing Settlement Agreement to accommodate the proposed recreation use. All of the Project-related roads are fully or partially included in the existing FERC Project boundary; those portions of

roads not currently included in the Project boundary, but used exclusively or primarily for Project purposes, are being proposed for inclusion into the Project boundary.

Table 4.3-1. Project-related roads.

Road Description (reference # corresponds to Figure 4.3-1)	Land Owner(s)[1]	Approx. Length (miles)	Relation of Road to Project
West Side Access Road (#1)	SCL, USFS	1.1	Used for Project operations
Maintenance facility road network (#2)	SCL	1.6+	Used for Project operations and to access SCL recreation facility
Road to SCL Forebay Recreation Area (#3)	SCL	0.3	Used for Project operations and to access SCL recreation facility
BPA Substation road (#4)	BPA, USFS	0.2	Used for Project operations
Spur off the BPA Substation road (#5)	BPA, SCL, USFS	0.3	Used for Project operations
South end of FR 6200-348 (#6)	SCL, USFS	0.9	Used for Project operations
POC 3990/FR 3165-000 (#7)	SCL, USFS, Private	2	Used for Project operations and to access SCL recreation facility
FR 3165-350 (across dam) (#8)	SCL, USFS	0.6	Used for Project operations
Tailrace boat launch road (#9)	SCL, USFS	0.25	Used for Project operations
FR 3100-172 (not shown on Figure 4.3-1)	USFS	1.2	Used to access new recreation facility
FR 3165-325 (not shown on Figure 4.3-1)	USFS	0.3	Used to access new recreation facility
FR 3165-315 (not shown on Figure 4.3-1)	USFS	0.4	Used to access new recreation facility

[1] Refers to entities that either: 1) own the road surface, or 2) utilize the road to access their ownership. Use of roads by the public is not addressed in this table.
FR = Forest Road; POC = Pend Oreille County.
Source: Land and Roads Study Final Report (SCL 2009).
Note: does not include internal BWP roads (unpaved).


Legend
Existing Project Boundary
3
Road Number
Unpublished Work Copyright 2010 Seattle City Light
T40N,R43E
Section 3
Section 2
Section 10
Section 11
Boundary Dam
2
9
8
8
7
3
6
5
4
1
SEATTLE CITY LIGHT
TERRESTRIAL RESOURCES MANAGEMENT PLAN
BOUNDARY PROJECT, FERC NO. 2144
Figure 4.3-1
Project-related roads
in the vicinity of Boundary Dam.
Project Location
Washington
0
500
Feet
Map Version 02/22/10
N

The effects of roads on wildlife, particularly big game, are well known, and reducing road densities can benefit wildlife movement and survival. Although opportunities to reduce road densities in the Project area are limited, there are two spurs off of National Forest roads that have been used in the past to access Project survey monuments that are no longer needed (one spur off of FR 3165-200 and one spur off of FR 3165-340). In both cases, the survey monuments can be accessed by boat, negating the Project need for these roads. In addition, in general it may be possible to improve habitat conditions in some areas by restricting vehicle access to some Project-related roads.

4.3.1.1. Desired Conditions

- The spur off of FR 3165-340 is decommissioned.
- FR 3165-340 is closed with earthen berm after spur is decommissioned.
- The spur off of FR 3165-200 is closed to vehicle access by the public.

4.3.1.2. Management Considerations/Constraints

Plans for closing the spur off of FR 3165-200 will need to be coordinated with the Border Patrol, BPA and/or B.C. Hydro, and the USFS.

4.3.2. Existing Project Facilities

Project facilities include the dam and spillway, power intakes and penstocks, accessory buildings, maintenance and storage areas, and Project recreation facilities. Also included are six 230-kV transmission lines leading from the power plant to the Boundary Substation located on top of the ridge on the west side of the reservoir. The transmission line ROW from the power plant to the BPA Substation is approximately 3,000 feet long. Table 4.3-2 summarizes Project facilities; a full description of the facilities is included in the PAD (SCL 2006) and in the License Application.

Although Project facilities and recreation sites are managed for purposes other than natural resources, they include areas of native and landscaped vegetation that provide habitat for a number of wildlife and RTE plant species. For example, the transmission line corridor includes a mix of early seral stage shrubs and small trees that provide forage for elk, deer, and black bear and the Tailrace West parcel provides forest cover for big game and likely provides a movement corridor for wildlife traveling to and from Canada.

Table 4.3-2. Project-related facilities and use areas.

Project Facility	Use Area
Boundary Project Operations and Maintenance Area	Includes the shipping and receiving building; paint shop/warehouse; spring water source and storage (stores water for cooling generators); maintenance shop; storage yards/staging areas (e.g., storage of aggregate); boat launch (not for recreational use), and other misc. functions.
Forebay Recreation Area	SCL-maintained RV and tent campground, boat ramp, day use picnic sites, and restroom.
Tailrace Recreation Area	SCL-maintained day use and picnic area leading to the Machine Hall Visitors' Gallery.
Vista House Recreation Area	Viewpoint overlook and visitor building, parking area, and trail and viewing platform used by visitors to view the dam and Project facilities. Housing for SCL communications equipment inside building.
Metaline Waterfront Park Boat Launch	SCL will be improving and replacing the existing boat launch at the park and will be maintaining it during the new license.
Shoreline Dispersed Recreation Sites	SCL will be improving six shoreline sites for overnight and day use, primarily for visitors who arrive by watercraft. An additional 10 shoreline sites will be monitored over time.
Transmission line right-of-way (ROW)	Includes station service and associated underground utilities.

4.3.2.1. Desired Conditions

- Continued use of Project structures, where appropriate, by nesting birds.
- A minimum of roads and disturbed ground in the vicinity of Project facilities.
- A mixed native shrub habitat within the transmission line corridor managed for maximum habitat value compatible with Project needs.
- Habitat that continues to support RTE species.

4.3.2.2. Management Considerations/Constraints

Habitat management activities in the vicinity of Project facilities will need to be developed and implemented in cooperation with Project staff; Project needs will take precedent when management options are being considered.

4.3.3. Existing Recreation Facilities

There are three existing SCL-owned recreation facilities located within the Project boundary: the Forebay, Tailrace, and Vista House Recreation Areas. Two other recreation sites, not owned by SCL, Metaline Waterfront Park and Campbell Park, provide boat access to Boundary Reservoir.

The Forebay Recreation Area consists of a boat launch, camping, and picnic facilities. It is located on the west side of the Project forebay just upstream of the dam. Although the recreation facilities are subject to a high level of human use, the lawn areas are utilized as foraging sites for

Canada goose broods and support a colony of yellow-bellied marmots. The Forebay Recreation Area is the only site where western toads (*Bufo boreas*) were found during relicensing studies. A small population of least bladdery milk-vetch and one of purple meadowrue occur along the reservoir edge of the Forebay Recreation Area.

The Tailrace Recreation Area is dominated by Project facilities, roads, and parking lots. Violet green, barn, and cliff swallows use Project structures in this area for nesting, and several RTE plant populations occur along the road to the power plant. Although routinely mowed, the picnic area near the power plant provides a mix of open areas, shrubs, and trees that is used by a variety of birds. Columbia spotted frogs were observed in the stream that runs through this area.

The Vista House Recreation Area includes a building that provides interpretive displays and views of Boundary Dam and the Pend Oreille River, an outdoor viewing platform that also provides views of the dam and reservoir, a trail connecting the Vista House to the viewing platform, and a gravel parking area, among other site amenities (e.g., restrooms, trash receptacles, picnic tables, etc.).

The two other recreation areas along Boundary Reservoir, Metaline Waterfront Park and Campbell Park, are operated by the City of Metaline and Pend Oreille County Public Utility District (PUD), respectively. Shoreline-related features at Metaline Waterfront Park include a boat ramp, dock, and associated parking. Campbell Park, located just downstream from Box Canyon Dam, also offers a boat ramp that provides access to Boundary Reservoir. At four of the sites (all but Campbell Park), SCL plans improvements and enhancements during the new license term.

4.3.3.1. Desired Conditions

- Habitat that continues to support RTE plant populations.
- Increased native vegetation, fewer noxious weed infestations, and improved wildlife habitat conditions in the Tailrace picnic area, particularly along the stream corridor.
- Continued use of the Forebay Recreation Area by marmots, western toads, and Canada geese.
- Recreation areas and activities that are managed for compatibility with existing wildlife use.

4.3.3.2. Management Considerations/Constraints

- Recreational improvements should be consistent with the protection of native plant communities, including any RTE species, and be compatible with wildlife use.
- Habitat management activities in the vicinity of Project facilities will need to be developed and implemented in cooperation with Project staff.
- The Project interpretive/education program may need to consider providing information to visitors to ensure the continued use of Project recreation areas by wildlife and to reduce human-wildlife interactions/conflicts.

4.3.4. Proposed New Recreation Sites and Existing and Dispersed Recreation Sites

SCL plans to develop four new recreation sites: Peewee Falls Viewpoint and Trail, Riverside Mine Canyon Viewpoint and Trail, Eastside Trail, and the Metaline Falls Portage Trail and Boater Access site. Details on the plans for these facilities can be found in the RRMP.

SCL also plans to manage multiple dispersed recreation sites and use areas along the reservoir shoreline (within the Project boundary) to support Project-related recreational use. Under the new license, six of these shoreline sites will be enhanced to protect resources from potential recreation-related impacts; ten other shoreline dispersed recreation sites will be designated and monitored over time. Some of these sites are located on SCL lands, while others are on USFS- and BLM-managed lands. Since the potential exists for overlap between recreation and terrestrial resource goals and actions at shoreline dispersed recreation sites, resource integration and communication will help ensure that potential resource conflicts are addressed over the term of the new license. Three dispersed recreation sites, one along the forebay and two in the canyon reach, have been selected for erosion control (see Erosion Control Program). The TRWG will coordinate with the Recreation Resources Work Group (RRWG) as this work progresses.

4.3.4.1. Desired Conditions

- Habitat and other natural resource values are preserved at new and dispersed recreation sites.
- Recreation/natural resource conflicts are minimal.
- Opportunities for natural resource interpretation/education are incorporated into the new recreation sites.

4.3.4.2. Management Considerations/Constraints

Developing and monitoring new recreation sites will require close coordination between the TRWG and RRWG.

4.4. Federal Lands within the Project Boundary

The USFS and BLM manage approximately 606 and 314 acres of land, respectively, within the Project boundary (30 of these acres are associated with Project facilities). Most of the federal ownership is located north of Metaline Falls and has a long history of being managed for timber production, mining, and resource protection. These lands are dominated by mixed second-growth conifer forests and include the mouths of Lime, Slate, and Threemile Creeks where they enter the reservoir. Management of these lands is the responsibility of the federal agencies, and SCL will coordinate with these entities regarding weed and erosion control/monitoring and RTE plant and wildlife surveys and other cooperative management actions.

Recreation-related actions on federal lands are addressed in the RRMP, including monitoring potential shoreline impacts from Project-related recreational use. Some overlap may occur among SCL, USFS, and BLM for activities such as RTE plant monitoring, weed control, and erosion control. SCL will coordinate these efforts through the TRWG and other Work Groups as needed.

5 RESOURCE MANAGEMENT PROGRAMS

This section describes the objectives and implementation tasks for each of the six resource programs included in the TRMP:

- Erosion Program
- Habitat Management, Enhancement and Protection Program
- Integrated Weed Management Program
- RTE Plant Species Program
- Wildlife Program
- Shoreline Management Program

Environmental issues associated with the management of Project-related activities and facilities are addressed separately in Chapter 6. General implementation timelines are provided in the following sections for each program objective. A detailed implementation schedule for all TRMP program tasks is provided in Appendix 3.

In general, SCL will actively manage PHLs to protect and/or enhance terrestrial resource values and will coordinate with the USFS and BLM during the annual meeting regarding federal management activities adjacent to SCL-owned lands. The Erosion Program and the survey and monitoring aspects of all other programs apply to federal lands, as well as SCL–owned lands within the FERC Project boundary or other lands affected by Project-related operations.

5.1. Erosion Program

Past erosion along the Project reservoir has contributed to the loss of approximately 15 acres of land (Erosion Study Final Report, SCL 2009). Erosion rates in the years immediately following the filling of the reservoir were likely greater than the current rate of erosion. To determine the amount and the rate of erosion over the next license period, it is necessary to develop and implement a long-term erosion monitoring program. The long-term monitoring program will use baseline data collected during relicensing studies and will be developed in consultation with the TRWG. The purpose of the monitoring program is to determine the rate of Project-related erosion, measured as the average area (acres) of land lost to bank retreat per 10-year monitoring period. Objectives and tasks for the erosion control and long-term erosion monitoring elements of the Erosion Program are described below.

Objective 1 – Erosion control: Develop and implement erosion control measures specific to three sites identified in the feasibility analysis of the Erosion Study Final Report (one site is in the forebay and two are on BLM land in the Canyon Reach) (SCL 2009). Implement measures consistent with the schedule and design of recreation improvements at each site (see RRMP).

Task 1.1: Work with a geologist and/or civil engineer to develop site-specific erosion control plans for each of the three sites. Each plan should include the specific erosion control objectives for the site, the methods to be applied, the location and extent of any required grading and drainage modifications to the site, scale drawings and maps, estimated quantities of materials, approximate cost, and monitoring.

Task 1.2: Implement erosion control measures consistent with the schedule and design of recreation improvements at each site.

Task 1.3: Monitor the three sites annually for three years following implementation to ensure that actions are meeting the stated objectives. Continue monitoring the three sites as part of the 10 year long-term monitoring plan and repair the engineered structures as needed to maintain intended erosion control function.

Objective 2 – Long-term erosion monitoring: Develop and implement a long-term erosion monitoring plan for lands adjacent to Boundary Reservoir. Develop a plan within one year of license issuance; conduct the first year of monitoring within two years of license issuance.

Task 2.1: Work with the TRWG to refine the methods for surveying, documenting and tracking erosion used during relicensing studies and identify the specific 16 representative sites for quantitative measurement and monitoring.

Task 2.2: Monitor erosion every 10 years and include the results in the Rolling 3-Year Annual Report/Work Plan.

The monitoring program will use the results of the Erosion Study Final Report (SCL 2009) as a baseline so that data collected during the new license term will be comparable to the information generated during the relicensing study program. The monitoring will consist of the following components:

- Visually inspect the entire Project shoreline every 10 years through the term of the new license. This inspection will use as a base the original field forms and aerial photograph overlays produced during the erosion study. The position, length, height, and condition of each erosion area will be evaluated to determine if any changes have occurred since the previous survey. Any previously undocumented areas of erosion will be mapped and catalogued using the field forms. A photograph will be taken of each site.
- To determine the rate of erosion over time, bank retreat rates will be monitored every 10 years at 16 representative sites, to be selected from the 87 (54 sites between Boundary Dam and Metaline Falls, 30 sites between Metaline Falls and Box Canyon Project boundary and 3 sites below Boundary Dam) sites identified during the erosion

inventory. The 16 sites will be selected from sites rated during the initial study as having high, medium, and low erosion rates (combination of bank height and shoreline length). The number of high, medium and low sites will be chosen in a ratio that is proportional to the occurrence of each of these erosion categories. A preliminary ratio of four low category sites, four medium category sites, and eight high category sites has been identified and will be refined in coordination with the TRWG. In addition, during each survey period, bank retreat rates will be measured at each of the three recreation sites where erosion control measures are implemented (as described above under Objective 1), plus any additional sites where erosion control measures are implemented during the term of the new license.

- Bank retreat will be monitored by establishing a series of metal pins close to the top of the bank at each of the monitoring locations. The distance from each pin to the top of the bank (edge of vegetation mat or top edge of soil) will be measured and recorded. At banks suspected to have high bank retreat rates, a second set of pins will be placed 5 feet back from the first set in case the first set is lost. The location of each pin will be located by global positioning system (GPS) to enable researchers to find the pins during future monitoring periods. A minimum of 3 inches of bank retreat must be measured before it is recorded. Photographs will be taken of each site. Average bank retreat rates at each site will be calculated as the average of the retreat rate from all the pins at that site. If improved methods to measure bank retreat rates are developed in the future, the TRWG will determine if such methods should replace the use of metal pins.
- Evaluation of shoreline erosion length during each 10-year monitoring period will be determined by comparing the total length of eroding shoreline for each erosion-rating category (high, medium, low) with the length from previous monitoring periods.
- A calculation of the area lost to erosion will be made by multiplying the length of shoreline in each erosion rate category by the average bank retreat rate for that category. This calculation will be used to track all future erosion, see Task 2.4.

Task 2.3: If erosion is shown by monitoring to be occurring at a high value resource area, SCL will confer with the TRWG as to the need for and/or feasibility of addressing erosion at the specific site. High-value resources were defined as those with a limited geographic extent (for example, habitat for fish/wildlife species life stage or riparian habitat), or considered by a regulating agency as important (for example, sites used by rare, threatened, and endangered [RTE] species or cultural resource sites) (Updated Study Report, SCL 2009).

Task 2.4: Track shoreline erosion at all existing and any new sites along the reservoir shoreline during the new license period. Use the data collected from Task 2.2 for this process. Consult with the TRWG on what further mitigation actions may be necessary if monitoring reveals that erosion in the new license term has exceeded the 6.1 acres of loss predicted by the erosion model developed in the relicensing erosion study.

5.2. Habitat Management, Enhancement and Protection Program

The intent of the Habitat Management, Enhancement and Protection Program is to reach the goals and desired conditions for the PHLs and several Project facility areas as outlined in Chapters 3 and 4. There are two main elements of this program: (1) active management and enhancement of PHLs, where appropriate, and (2) passive management to protect the existing habitat values of the PHLs and to allow the natural maturation of the relatively young mixed conifer stands that dominate the SCL-owned lands.

Habitat management and enhancement measures were developed by reviewing the habitat information provided from the terrestrial resource relicensing studies, visiting PHLs with the highest habitat values, and continuing discussions with the TRWG. A few areas associated with Project facilities also have wildlife habitat values identified as potentially benefiting from management and enhancement measures.

Cover type maps were produced for the PHLs in 2005 and will require review and refinement. The cover type maps and associated habitat acreage tables in Chapter 4 will be reviewed and updated in license year two, prior to conducting the habitat assessments described in this section. When completed, the updated maps will be amended to the TRMP.

Monitoring and adaptive management are key to understanding if enhancement and management measures are reaching the intended objectives; as such, each resource program contains a monitoring and adaptive management component. However, to ensure that overall TRMP goals and objectives are being met over time, Objective 7, Adaptive Management, is included.

Habitat management and enhancement measures are parcel-specific and include the following:

- Motorized vehicle access control.
- Wetland/riparian habitat enhancement feasibility assessment.
- Riparian habitat management and enhancement.
- Forest and other upland habitat management.
- Island and shoreline access control.
- Future measures for PHLs that are acquired.
- Adaptive management.

Objective 1 – Motorized vehicle access control: Identify and implement vehicle access control measures, as needed, on lands owned by SCL within the Project boundary. Implement permanent measures within five years of license issuance.

Generally, public access to most PHLs is not causing problems, but unauthorized use of vehicles can cause substantial damage to habitat, particularly to wetlands, and disturb wildlife at critical times of the year. In addition, once public use is established in an area, it can be difficult to stop. Controlling vehicle access is therefore a key objective for the protection of wildlife habitat on several PHLs. See Section 4.2.1 for a map of Project-related roads.

Implementation of vehicle access control measures will be phased. To address immediate concerns such as ORV use on the BWP, temporary measures may be implemented before site-specific long-term needs and actions are identified and implemented. For example, existing roads may be left open (but gated) to provide access for habitat enhancement measures, and later permanently closed for resource protection purposes. The implementation schedule in Appendix 3 reflects the schedule for assessing and implementing short vs. long term vehicle access measures.

Task 1.1 - Tailrace East Parcel: Coordinate with the USFS to install a gate at the beginning of FR 3165-200 to prevent vehicle access to this parcel. Include a sign noting that vehicle use is prohibited to protect the site's natural resource values, but access on foot is allowed. Coordinate this action with the RRMP and the Travel and Public Access Management Program of this TRMP.

Task 1.2 - BWP: Assess, develop, and implement vehicle access control measures.

- Subtask 1.2.1: Assess the short and long-term needs and options for closing the roads existing on and accessing the BWP: 1) the road providing access the railroad right-of-way and BWP from private property on the southeast quadrant of the BWP, 2) the railroad right-of-way, 3) the road leading into the BWP from the railroad right-of-way, and 4) the road that parallels the river south of the BWP.
- Subtask 1.2.2: Implement the road closure measures for the roads identified in Subtask 1.2.1.
- Subtask 1.2.3: Develop and install signs for the closed roads, indicating that access by foot is allowed. Signs should be coordinated with the RRMP's Interpretation and Education (I&E) Program and the Travel and Public Access Management Program in this TRMP.
- Subtask 1.2.4: Monitor the road closures for effectiveness at least 3 times during peak use periods for the first 3 years post implementation. Pending monitoring results, and in consultation with the TRWG, determine the need for future monitoring actions.
- Subtask 1.2.5: Develop and implement a mechanism to address closure violations.

Objective 2 – Wetland/riparian habitat enhancement feasibility assessment and planning: Assess the feasibility of successfully enhancing wetland/riparian habitat associated with the excavated ponds on the BWP Addition (on the pond closest to the existing railroad right-of-way), the ponds on the Tailrace East parcel, and the riparian community associated with the Sullivan Creek parcel. Develop a Wetland/Riparian Enhancement Plan for the respective parcels as indicated by the assessment and the subsequent review of the assessment. Begin planning (e.g., scope development) within two years of license issuance and complete assessment within three years. If an enhancement plan is warranted, develop the plan in license year four, and implement the plan within five years of license issuance.

Task 2.1 - Assessment: Conduct a feasibility assessment to determine current vegetation composition, and seasonal hydrology and soil conditions of the sites. Assess the feasibility and likelihood of success of habitat improvement opportunities at the sites, in coordination with the TRWG.

Task 2.2 – Plan Development and Implementation: If the assessment identifies potential measures that could help achieve the desired condition for these parcels, develop site-specific wetland/riparian enhancement and monitoring plans for any or all of the three sites, unless the anticipated costs significantly outweighs the expected ecological benefits. Submit the final plan to FERC for approval prior to implementation.

Objective 3 – Riparian habitat management and enhancement: Identify and implement specific measures to improve the riparian habitat associated with the Tailrace recreation area, Everett Creek, and the BWP. Address the management of public use at the BWP to ensure that human use of the parcel is compatible with wildlife needs. Begin planning for assessments for Everett Creek and the BWP (e.g., scope development) within two years of license issuance, conduct assessments within three years of license issuance, develop plans, if warranted, in year four, and implement measures within five years of license issuance.

Task 3.1 - Tailrace Recreation Area: Coordinate with Project staff to identify and implement measures to improve wildlife habitat in and around the picnic area near the power plant under the RRMP.

Subtask 3.1.1: Evaluate and implement measures to improve habitat conditions of the riparian zone, such as planting native trees and shrubs and ceasing mowing.

Subtask 3.1.2: Monitor the stream for presence of Columbia spotted frogs and the site for plant survival for five years following implementation if enhancement measures are implemented.

Task 3.2 - Everett Creek: Conduct an assessment to identify measures (e.g., the creation of small, irregularly shaped openings) to increase the amount of deciduous tree and shrub habitat in the riparian zone along Everett Creek. Measures need to be compatible with resource agency objectives and surrounding landscape conditions. If the assessment identifies potential measures that could help achieve the desired condition for this parcel, develop a site-specific enhancement and monitoring plan, unless the anticipated cost significantly outweighs the expected ecological benefit. Submit final plan to FERC for approval prior to implementation.

Task 3.3 - BWP: Assess the feasibility of planting native trees and shrubs within the reed canarygrass stands. Pending assessment results, implement limited trials to interplant deciduous woody vegetation (e.g., cottonwoods, willows, aspens and hawthorn).

- Subtask 3.3.1: Conduct a review of the current literature on methods to successfully establish native trees and shrubs within areas dominated by reed canarygrass.

- Subtask 3.3.2: If promising methods are identified in the literature, develop a small-scale pilot study (that includes a monitoring component) to test the methods of

establishing deciduous woody vegetation in reed canarygrass stands. Incorporate methods to protect plantings from damage by beaver and big game, as needed. Submit final plan to FERC for approval prior to implementation.

- Subtask 3.3.3: Review pilot study results and design and implement a plan for broader scale application of the methods unless the anticipated cost significantly outweighs the expected ecological benefit. Include a monitoring component, as appropriate.

Task 3.4 - BWP: In conjunction with Objective 1, *Motorized vehicle access control,* develop and implement a program, including a monitoring component, that: defines compatible public use types and levels (including non-motorized boating access); controls unwanted human use and related impacts; controls access from adjacent roadways to the BWP; and, prohibits on-site use of ATVs and snowmobiles. Educate visitors about proper behavior and use of the BWP and about wildlife and habitat values (refer to the RRMP I&E Program).

Objective 4 – Upland habitat management: Develop upland habitat management plans for the BWP, BWP Addition, Tailrace East, and Everett Creek parcels to maintain or improve overall wildlife habitat diversity and structure. Begin planning (e.g., scope development) within two years of license issuance, conduct the assessment within three years of license issuance, develop plans in year four, if warranted, and implement plans within five years of license issuance.

Task 4.1 – Forest Management Assessment and Plan Development: Consult with a professional forester or silviculturist and a professional wildlife biologist to conduct a parcel/stand inventory and/or assessment to identify opportunities for upland forest management for the four sites. The assessment should address fuel loads and include possible measures to increase habitat diversity (e.g., creating small openings in the canopy to increase the amount of herbaceous vegetation and deciduous trees and shrubs). Subsequent management plans should include goals and measurable objectives, desired outcomes, parcel or stand treatment methods, debris (e.g., structures, refuse) removal, and suggested methods for timber or vegetation slash removal, (disposal or on-site retention).

Task 4.2 – Dry Meadow Assessment: Conduct an assessment of the dry meadow habitat on the Tailrace East parcel to characterize habitat conditions and identify measures, if needed, for maintaining big game forage.

Task 4.3 – Management Plan Implementation: Develop management plans for the four sites as identified in Tasks 4.1 and 4.2. Submit final plans to FERC for approval prior to implementation.

Task 4.4 – Monitoring: Monitor the results of forest management or dry meadow enhancement measures as described in the plans developed for any or all of the four sites. Monitoring should include an assessment of conditions before and after implementation and comparisons with control areas.

Objective 5 – Island and shoreline access control: Protect Canada goose nests on Metaline Island and Rat Island from human disturbance and limit recreational use at other sites along the reservoir to protect ecological values. Develop and implement protection measures within the first year of license issuance.

Task 5.1 – Island Access Control Signs: In coordination with the RRMP Travel and Access Management and I&E Programs, install signs prohibiting access to Metaline and Rat islands during the Canada goose nesting season from March 15 through May 15. Monitor these sites to ensure compliance.

Task 5.2 – Education Signs: In coordination with the RRMP Travel and Access Management and I&E Programs, install signs educating users about sensitive resources that could be damaged from camping outside of designated use areas at specified locations along the reservoir.

Task 5.3 - Monitoring: Monitor sites in the upper reservoir where terrestrial resource impacts were observed at sensitive sites in association with recreational use (i.e., trampling of vegetation).

Objective 6 – Future Measures for Project Habitat Lands to be Acquired: Develop, fund and implement habitat protection and enhancement measures and monitoring as needed to achieve TRMP goals and objectives for future Project Habitat Lands consistent with the SA and License requirements.

***Task 6.1 – Habitat Condition Assessment*:** Describe the geographic extent and condition of existing habitats on newly-acquired PHLs, including known wildlife use, presence of RTE plant populations, the ecological processes and past land uses that have influenced current vegetation communities and habitat conditions, if known, observed human uses, desired land/habitat conditions, and management considerations/constraints.

***Task 6.2 – Planning and Implementation**:* In coordination with the TRWG, review each new PHL parcel to determine the need for any management, enhancement and protection measures, and associated monitoring. Document the process and management actions taken in the annual 3-year rolling report.

Objective 7 – Adaptive Management: Evaluate the habitat management, enhancement, and protection measures implemented on each PHL and determine if desired conditions are being achieved. Revise the TRMP as needed to reflect any new or revised management actions. Implement within five years of license issuance and every five years thereafter concurrent with TRMP reviews.

Task 7.1 - Tracking: Develop the tools, including databases and maps, to track and assess the effects of specific resource management programs on wildlife and plant communities.

Task 7.2 – Analysis: Analyze the data generated from the monitoring tasks included in each of the habitat management, enhancement, and protection programs and evaluate changes in condition and progress toward meeting resource management objectives and/or desired

conditions. As needed, obtain outside peer review of the monitoring results to assist in developing and evaluating adaptive management actions.

Task 7.3 – Program Changes: Based on monitoring results, determine the need to change resource management programs or implement new management actions, and make the necessary revisions programmatically or on a site-specific basis.

Task 7.4 - Documentation: Develop a process for documenting and tracking changes in resource management programs. Incorporate any modifications into future versions of the TRMP.

5.3. Integrated Weed Management Program

For the purposes of this document, weeds are defined as terrestrial plant species that have been classified as noxious weeds by the Washington State Noxious Weed Control Board (State NWCB 2009). In Washington, noxious weeds are defined as non-native plants that result in economic losses and adverse effects on the State's agricultural, natural, and human resources (Washington Weed Law, Chapter 17.10 Revised Code of Washington [RCW]). Noxious weeds are classified based on the stage of invasion of a species. The classification system is designed to: (1) prevent small infestations from becoming large infestations, (2) contain already-established infestations to regions of the state where they occur and prevent their movement to un-infested areas, and (3) allow flexibility at the local level for landowner management programs (State NWCB 2009). Weeds are classified as follows (State NWCB 2009; RCW 17.10.010(2)):

- **Class A Weeds** - Non-native species with a limited distribution in the state. Eradication is required by state law.
- **Class B Weeds** - Non-native species established in some regions of Washington, but of limited distribution or not present in other regions of the state. Because of differences in distribution, treatment of Class B weeds varies between regions of the state. In regions where a Class B species is unrecorded or of limited distribution, prevention of seed production is required. In these areas, the weed is a "Class B designate," meaning it is designated for control by state law. In regions where a Class B species is already abundant or widespread, control is a local option. In these areas, the weed is a "Class B" with the chief goals of containment, gradual reduction, and prevention of further spread.
- **Class C Weeds** - Non-native species that are already widely established in Washington or of special concern to the state's agricultural industry. Counties may enforce control if locally desired, or choose simply to provide education or technical consultation to county residents.

As of 2009, there were 140 plants designated as noxious weeds in Washington. Of these, 54 terrestrial noxious weed species have been documented in Pend Oreille County (Pend Oreille County Noxious Weed Control Board [County NWCB] 2009), including 4 Class A, 29 Class B-designate, 10 Class B, and 11 Class C noxious weeds (Table 5.3-1).

Table 5.3-1. Terrestrial noxious weed species documented in Pend Oreille County and in the Boundary Project area (bold indicates target species for control).[1]

Common Name	Scientific Name	Class[2]	Documented in or near Project Area
Bighead knapweed	*Centaurea macrocephala*	A	
Vochin knapweed	*Centaurea nigrescens*	A	
Buffalobur	*Solanum rostratum*	A	
Clary sage	*Salvia sclarea*	A	
Annual bugloss	*Anchusa arvensis*	B - designate	
Common bugloss	*Anchusa officianalis*	B - designate	
Hoary alyssum	*Bertero aincana*	B	
Butterfly bush	*Buddleja davidii*	B - designate	
Plumeless thistle	*Carduus acanthoides*	B - designate	
Musk thistle	*Carduus nutans*	B - designate	
Diffuse knapweed	***Centaurea diffusa***	**B**	**X**
Spotted knapweed	*Centaurea biebersteinii*	B	X
Meadow knapweed	*Centaurea jacea x nigra*	B - designate	
Yellow starthistle	*Centaurea solstitialis*	B - designate	
Rush skeletonweed	*Chondrilla juncea*	B - designate	
Houndstongue	*Cynoglossum officianale*	B	X
Scotch broom	***Cytisus scoparius***	**B - designate**	**X**
Spurge laurel	*Daphne laureola*	B-designate	
Wild carrot	*Daucus carota*	B	X
Viper's bugloss	*Echium vulgare*	B - designate	
Leafy spurge[3]	***Euphorbia esula***	**B - designate**	**X**
Herb Robert	*Geranium robertianum*	B - designate	
Queen-devil hawkweed	*H. glomeratum*	B - designate	
Orange hawkweed	*Hieracium aurantiacum*	B	X
Yellow hawkweed	*Hieracium caespitosum*	B	X
Common catsear	*Hypochaeris radicata*	B - designate	
Policeman's helmet	*Impatiens glandulifera*	B - designate	
Kochia	*Kochia scoparia*	B - designate	
Perennial pepperweed	*Lepidium latifolium*	B - designate	
Leprodiclis	*Lepyrodiclis holosteoides*	B - designate	
Oxeye daisy	*Leucanthemum vulgare*	B	X
Dalmatian toadflax	*Linaria dalmatica* ssp. *dalmatica*	B	X
Purple loosestrife	***Lythrum salicaria***	**B - designate**	**X**
Wand loosestrife	*L. virgatum*	B - designate	
Scotch thistle	*Onopordum acanthium*	B - designate	
Common reed	*Phragmites australis*	B - designate	
Bohemian knotweed	*Polygonum, bohemicum*	B - designate	
Japanese knotweed	*P. cuspidatum*	B - designate	

Table 5.3-1, continued…

Common Name	Scientific Name	Class[2]	Documented in or near Project Area
Giant knotweed	***P. sachalinense***	**B - designate**	**X**
Sulfur cinquefoil	*Potentilla recta*	B	X
Tansy ragwort	*Senecio jacobaea*	B - designate	
Perennial sowthistle[4,5]	***Sonchus arvensis* ssp. *Arvensis***	**B - designate**	**X**
Saltcedar	*Tamarix ramossisma*	B - designate	
Canada thistle	*Cirsium arvense*	C	X
Bull thistle[4]	*Cirsium vulgare*	C	X
Myrtle spurge	*Euphorbia myrsinities*	C	
Babysbreath	*Gypsophila paniculata*	C	
English ivy (4 cultivars)	*Hedera helix, H. hibernica*	C	
Black henbane (shoofly)	*Hyoscyamus niger*	C	
St. johnswort	*Hypericum perforatum*	C	X
Yellow flag iris	***Iris pseudacorus***	**C**	**X**
Reed canarygrass	*Phalaris arundinacea*	C	X
Common tansy	*Tanecetum vulgare*	C	X

Notes:
1 Source: Pend Oreille County NWCB 2009.
2 Class A, B-Designate, Class B non-designate, and Class C noxious weed species. See text for explanation of weed classification system.
3 Species is being controlled by the Pend Oreille County NWCB and was not observed during relicensing studies in 2005, 2007, or 2008.
4 Species does not appear on the 2009 list of noxious weeds for Pend Oreille County (County NWCB 2009) but is on the 2009 state list and has been found in the Project area.
5 There is some question on the taxonomy of the perennial sowthistle found during relicensing surveys; the plants in the Project area may be marsh sowthistle, which is not classified as a noxious weed in Washington.

Studies conducted during relicensing in 2005, 2007, and 2008, and earlier by the Pend Oreille County NWCB, documented a total of 20 terrestrial noxious weed species in and near the Project area, five classified as Class B-designate, nine Class B, and six Class C (SCL 2006, 2009; Table 5.3-1). No Class A species were found. Infestations of one or more of the Class B-designate species were mapped in six different locations. In general, the number of noxious weed species found in and near the Project area is low compared to many other locations in eastern Washington, but the Class B and Class C weed species that do occur are widespread and pervasive (SCL 2006).

The goal of the Integrated Weed Management Program (IWMP) for the Project is to monitor, control, suppress, and contain terrestrial noxious weed species to maintain or achieve diverse and naturally functioning plant communities in the Project area. Aquatic weeds are not included in the IWMP but are addressed under the Aquatic Invasive Species Control and Prevention Plan (Exhibit 6 of the Settlement Agreement).

All IWMPs have three inter-related components: inventory, prevention, and control/treatment. Each of these components is addressed by the following IWMP objectives.

Objective 1 – Initial and periodic inventories: Conduct an initial inventory to update information regarding the locations of existing weed infestations and then re-inventory every three years to identify areas where new weeds or new infestations have become established. Conduct initial inventory within one year of license issuance.

Task 1.1 – Initial Inventory: Conduct an initial inventory of weeds in the Project area.

- Subtask 1.1.1: Consult with the County NWCB to update the list of noxious weeds known to occur or potentially occurring in the Project vicinity.
- Subtask 1.1.2: Map the locations of new infestations onto U.S. Geological Survey (USGS) topographic maps or record using a GPS unit. Map each infestation as accurately as possible to a resolution of 0.1 acre. Estimate the extent and number of plants in each mapped infestation and record data using the following cover classes developed by the North American Weed Management Association (NAWMA 2003): trace (T=<1%), low (L=1-5%), moderate (M=5.1-25%), and high (H=25.1-100%).
- Subtask 1.1.3: Work with the County NWCB to resolve the taxonomy of the sowthistle plants found during relicensing surveys in the Project area.

Task 1.2 - Consultation: Consult with the County NWCB annually to update the list of noxious weeds known to occur or that potentially occur in the Project vicinity. Determine if any of the Class A or B-designate species added to the list require surveys in that year or if they can be included in the next three-year cycle.

Task 1.3 – Periodic Inventory: Conduct inventories every three years to identify any new infestations of noxious weeds in the Project area. Use the same methods as the initial inventory so that results are comparable between survey periods.

Task 1.4 - Monitoring: During each three-year inventory, monitor existing infestations that have not been designated for treatment. At each of these sites, record the extent, estimated number of plants, and cover class so that data can be compared between inventory periods.

Task 1.5 - Updates: Update the associated database and maps, and summarize the periodic inventory results in the Rolling 3-Year Annual Report/Work Plan for that year.

Objective 2 – Prevention: Develop an integrated program to minimize the establishment of noxious weeds in the Project area and along roads and in recreation areas covered by the TRMP. Develop and implement program within three years of license issuance.

Task 2.1 – Integration with Other Programs: Integrate weed management into the Environmental Awareness Program (see Section 7.1).

- Subtask 2.1.1: Set up a meeting in the first quarter of each year between SCL's environmental staff and Project operators, managers, and maintenance personnel to review the maps of noxious weeds and BMPs for preventing the spread of these species relative to any planned construction, erosion control, or maintenance activities.
- Subtask 2.1.2: Provide information on noxious weeds to new staff engaged in Project construction and maintenance activities.

Task 2.2 - BMPs: Implement the following BMPs when planning and implementing construction and maintenance activities that involve ground disturbance:

- Treat existing infestations before the maintenance activity occurs. If possible, treat known noxious weed infestations prior to initiating vegetation clearance or other maintenance activities. Treatment may include any of the methods described under Objective 3.
- Work toward noxious weed infestations. Where possible, initiate maintenance activities in weed-free locations and work toward infested areas. This sequence minimizes the spread of weed seeds and/or rhizomes via equipment and vehicles.
- Perform work in and through invasive non-native plant infestations prior to seed set or after dispersal. Seed set times differ for the various weed species in the Project area, and vary within species depending on elevation and aspect. Seed set time is not a factor for work performed in areas infested with species that spread mostly vegetatively. Approximate seed set times for the noxious weeds that do not spread primarily by rhizomes or root buds are as follows:
    - Scotch broom (*Cystic scoparius*): May - June.
    - Spotted knapweed (*Centaurea biebersteinii)*: July-September.
    - Hawkweeds (*Hieracium* spp.*)*: June-September.
    - Reed canarygrass (*Phalaris arundinacea)*: August-September.
    - Thistles: July-October.
    - Dalmatian toadflax (*Linaria dalmatica* ssp. *Dalmatica)*: June-September.
- Equipment and vehicle cleaning. Implement a cleaning program for equipment and vehicles that involves power spraying with water before and after working off of paved or gravel roads on Project lands. In general, this program will apply to the following:
    - Contract equipment and vehicles that will be used off of paved or gravel roads in the Project area.
    - SCL vehicles and equipment used along the transmission line ROW or on the BWP.
    - SCL vehicles and equipment that have been used off of paved or gravel roads outside the Pend Oreille River drainage.

  - Equipment and vehicles that have been used off of paved or gravel roads and that are being taken off Project to locations outside the Pend Oreille River drainage.

- Minimize ground disturbance. Prepare a plan for all construction and ground-disturbing maintenance projects outside of previously disturbed areas to minimize ground disturbance. The plan should stipulate the location and size of equipment storage pads, vehicle parking sites, and other areas expected to be cleared or disturbed. The estimated size of the disturbed area and site characteristics should dictate how disturbance is managed (one concentrated site or several dispersed sites).
- Use weed-free material. Ensure that sand, gravel, and other fill material used for construction projects are generally weed-free. Stipulate the use of weed-free sand, gravel, and borrow material for any Project maintenance or construction activity that requires fill.
- Revegetate disturbed sites. Revegetate sites disturbed by Project maintenance and construction activities using regionally appropriate native plant seed mixes and shrubs, as well as native tree saplings (if revegetation is required on National Forest lands, seed will be locally collected).

Task 2.3 – Effectiveness Monitoring: Monitor the effectiveness of BMPs at construction/soil disturbance sites and treat noxious weeds annually for 3 years post construction if monitoring indicates the need. Summarize the sites requiring monitoring in the Rolling 3-Year Annual Report/Work Plan for that year.

- Subtask 2.3.1: Check active construction sites involving ground disturbance at least once to ensure that prevention measures have been implemented.
- Subtask 2.3.2: Visit completed construction sites that involved ground disturbance for at least three consecutive years and reseed or replant if needed.
- Subtask 2.3.3: Summarize the results of BMP effectiveness monitoring in the Rolling 3-Year Annual Report/Work Plan for that year.

Objective 3 – Control and effectiveness monitoring: Eradicate, suppress, or contain infestations of Class A and Class B-designate weed species on SCL lands within the Project boundary and along roads and at recreation areas covered by the TRMP, and on federal lands within the reservoir fluctuation zone. Monitor the effectiveness of control measures. Develop plans within two years of license issuance and initiate control measures within three years.

For this IWMP, control and effectiveness monitoring tasks will focus on the noxious weed species that are required for land owner control, i.e., Class A and Class B-designate species. It will also include diffuse knapweed *(Centaurea diffusa*) and yellow flag iris (*Iris psuedacorus*), which are Class B and C species, respectively, but are not yet well established around Boundary Reservoir (Table 5.3-1). No Class A weed species are currently known in the Project area, but five Class B-designate species have been documented: Scotch broom, leafy spurge (*Euphorbia esula*), purple loosestrife (*Lythrum salicaria*), giant knotweed (*Polygonum sachalinense*), and perennial sowthistle (*Sonchus arvensis* ssp. *arvensis*). For the IWMP, the seven species

designated for control are referred to as "target weeds." The list of species targeted for control under the IWMP may expand in the future if species are added to the state and county lists and are documented in the Project area.

There is no single treatment method for effectively controlling weeds. Treatment methods include manual, mechanical, cultural, chemical, and biological techniques. Effective control typically requires integrating several treatment methods depending on the species, the characteristics and location of the infestation, and site objectives for the infestation. Site objectives can range from complete eradication, to containing the spread of the species, to suppressing the population.

Task 3.1 – Treatment Plan Development: Develop treatment plans for each target weed infestation on SCL lands within the FERC Project boundary, along roads and at recreation areas covered by the TRMP, and for infestations caused by Project-related operations. The treatment plan for each infestation should establish the site objectives and the appropriate control methods based on the target species' biological characteristics, as well as infestation characteristics and location. The following factors should be considered when establishing site objectives and selecting control methods to be applied at any given infestation:

- Biological characteristics:
    - Growth characteristics (annual, biennial, or perennial)
    - Growth form (grass, forb, shrub, tree)
    - Root structure (fibrous, tuber, tap, rhizome)
    - Seed viability
    - Seed dispersal mechanism
    - Species' known response to available control methods
    - Allelopathic properties of the species
- Infestation characteristics:
    - Size and density
    - Single or multi-species
    - Presence and density of desired and/or RTE species
- Location factors:
    - Proximity to water
    - Slope
    - Access
    - Proximity to transportation vectors
    - Soil type
- Subtask 3.1.1: Work with the County NWCB to develop treatment plans for each mapped infestation of target weeds on SCL lands within the Project boundary and along roads and at recreation areas covered by the TRMP.

- Subtask 3.1.2: Work with the County NWCB, USFS, and/or BLM to develop treatment plans for Project-related weed infestations on federal lands along the reservoir shoreline.
- Subtask 3.1.3: Document treatment plans on a standard form (to be included in Appendix 1).
- Subtask 3.1.4: Revise and update treatment plans based on the results of effectiveness monitoring and to reflect the use of improved treatment methodologies as identified by the County NWCB.

Task 3.2 - Treatment: Treat Project-related weed infestations annually on SCL lands, along roads, at recreation areas covered by the TRMP, and on federal lands along the reservoir shoreline (if Project-related) using the methods identified in the site treatment plans. Weed infestations on federal lands will be considered Project-related if they are: (1) within the reservoir fluctuation zone; (2) in areas affected by Project-related erosion; (3) along roads used for Project purposes; or, (4) associated with Project-related recreational use. Weed treatment methods can be grouped into five categories: manual, mechanical, cultural, chemical, and biological. Treatment should be followed by revegetation when the area is large and it is expected that it is unlikely that native vegetation from the surrounding area will readily colonize the site. Methods to control weed infestations in the area covered by the TRMP are described below.

- Manual Methods - Manual treatment methods involve hand-pulling, the use of non-mechanized tools, and/or passive approaches to control weeds. Manual techniques that may be used as part of the IWMP include the following:
    - Hand-pulling - Physically pulling plants from the soil.
    - Cutting/lopping/clipping - Using shears, clippers, or brush saws to sever aboveground parts of plants.
    - Solarizing - Covering plants with black plastic or jute to deprive them of sunlight. Use of this method should be carefully considered due to the disruption of soil microbial action, potentially resulting in a larger area of disturbance than the original treatment area.
    - Grubbing - Using a Pulaski, hoe, or shovel to remove entire plants, including roots, from the ground.

  For this IWMP, manual methods will usually be restricted to weed infestations less than 1 acre in size, or for the treatment of individual plants scattered over a large area that are either just beginning to invade or that remain following the use of other control methods. Manual methods, particularly grubbing, may be most appropriate for controlling small patches of select species along the Boundary Reservoir shoreline.

- Mechanical Methods - Mechanical methods to treat weeds typically involve power tools and/or mowing equipment and include the following:
    - Cutting - Using chainsaws and other power tools to remove the branches and stems from woody invasive non-native plants.
    - Mowing - Cutting weeds by mowing with a high-wheeled mower, weed-eater, or a rotary head attached to a tractor or rubber-tired vehicle.
    - Discing/plowing - Using a tractor-pulled disc or plow to blade and turn the soil in areas infested with weeds.

  Mechanical treatment methods are likely to have limited practicality in the Project area because none of the current target weeds are shrubs and because access and terrain restrict the ability to use mowers for control. The exception is leafy spurge, which is currently being suppressed by mowing in the Forebay Recreation Area.

- Cultural Methods - Cultural methods for controlling invasive, non-native terrestrial plant species involve measures that help establish or maintain competitive native vegetation. Cultural methods include the following:
    - Grazing - Using livestock (cattle, sheep, or goats) to reduce aboveground portions of plants.
    - Burning - Using fire to remove or reduce the aboveground portions of plants and seed banks.
    - Reseeding, mulching, and fertilizing - Planting and amending the soil to provide competitive vegetation.

It is unlikely that cultural methods will be appropriate for controlling infestations of any of the seven current target species, which occur mostly in small patches along the reservoir shoreline. The size and location of these infestations make them unsuitable for control by grazing, and the adjacent habitat precludes the use of burning as a control method.

- Chemical Methods - Chemical methods involve the use of naturally derived or synthetic chemicals, otherwise referred to as herbicides, to eliminate or control the growth of weed species (USFS 2005). The effectiveness of any herbicide depends on the application rate, climatic conditions, timing, and the species to which it is applied. Some herbicides are specific to broad-leaved plants but do not kill grasses; others are not selective and kill both. Several herbicides have aquatic formulas that allow for use in or near water. A few herbicide compounds inhibit seed germination in the soil, but most do not and therefore require application for several years. Proper application of chemicals typically avoids disturbing soils and nearby desirable vegetation. Depending on the method of application, herbicides can be used to control large and small weed infestations as well as scattered individual plants.

  All herbicides sold in the United States are regulated by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). This act requires herbicides to have labels that contain, at a minimum, the following information: application rates, health warnings, clean-up and disposal directions, personal protection equipment requirements, target species for application, and restrictions. All herbicide

applicators are required by law to follow the label. Application rates can be less than label recommendations, but only in a few circumstances with regulatory approval can application rates be exceeded.

In general, herbicides in the terrestrial environment should be applied before plants set seed, although fall can be a good time for perennials (Mazzu 2004). Care must be taken to avoid spraying non-target species (Carpenter and Murray 1998a, 1998b). Herbicides can be applied as spot treatments to individual plants or by hand to a small area, using a squirt bottle, spray gun, backpack spray unit, or truck-mounted sprayer with a handgun (BPA 2000). Spot treatment of knotweed can also be accomplished by stem injection, cut-and-wick, or cut-and-pour methods. For larger areas, herbicide applications can be accomplished by broadcasting with a spray gun, broadcast nozzle, or boom attached to a truck, ATV, or tractor (BPA 2000). Broadcast applications are typically limited to large, dense infestations where there is minimal risk of affecting non-target species. Buffers should be established around RTE plant populations, streams, and wetlands for broadcast application of certain chemicals.

City of Seattle Policy 6.13 (Landscapes and Grounds Management Policy) requires City departments to control noxious weeds but also to limit the use of chemicals on City-owned lands. SCL screens all pesticides based on toxicity to birds and bees, aquatic toxicity, mobility, persistence, neurotoxicity, endocrine disruption, reproductive effects and carcinogenicity. The screening ranks pesticides in four tiers with Tier 1 as the most dangerous of the pesticides. SCL has not used any Tier 1 pesticides for 8 years; use of Tier I pesticides requires approval from the City of Seattle Office of Sustainability and Environment as well as the City Light Integrated Pesticide Management Program lead. Numerous herbicide products are approved for SCL use (Table 5.3-2), and an additional 59 can be applied with special permission. SCL has trained and licensed applicators on staff and also contracts with the County NWCB and other licensed companies to apply herbicides for weed control in the Project area. Virtually all infestations of target weeds currently documented in the Project area occur as small infestations along or near the water and are probably most appropriately treated by applying herbicides as spot treatments.

All use of herbicides by SCL or its contractors will be in accordance with label instructions. Aquatic formulas will be used for weed control near water. SCL will obtain a National Pollutant Discharge Elimination System (NPDES) permit annually, as required by the Washington State Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA), if aquatic herbicide application is done by in-house staff; alternately, SCL may be able to conduct weed control work under the County's NPDES permit.

- Biological Controls - Insects, diseases, and other pathogens can attack plants, affecting their survival and productivity. However, many non-native plants lack natural enemies, giving them a competitive advantage over native species. Biological control is defined as the use of non-native agents, including invertebrate parasites, predators, and plant pathogens, to reduce weed populations (USFS 2004). Biological control works best when there are several insects or pathogens that attack a given weed species. Unfortunately, not all noxious weed species have available biological

controls. A good summary of biological control information is available from Rees et al. (1996).

Biological controls have two effects on invasive non-native species: a direct impact by destroying plant tissue and an indirect impact by stressing the species and reducing its ability to compete with desirable species. Biological controls can be applied by helicopter over large areas or transported to specific sites by vehicle or on foot.

Biological controls are also used to reduce populations of naturalized nuisance species and weeds in remote areas. For example, in the near future there may be effective biological controls for spotted knapweed, which is widespread in the Project area. The U.S. Department of Agriculture regulates and coordinates the dissemination of insects for biological control within the state.

The specific measures selected to control target weeds will depend on the treatment plan developed for each infestation site and will vary by species and location. Successful control will likely require multiple methods in combination and over time. Potential control methods for each of the current target species are listed in Table 5.3-3. Control of target weed species infestations will occur annually, unless otherwise specified by the treatment plan. In addition, annual control efforts will include treating any "satellite" target weed infestations observed in proximity to each infestation.

Task 3.3 - Coordination: Coordinate with the USFS and BLM during the annual TRWG meeting to control Project-related weed infestations on federal lands along the reservoir shoreline.

Task 3.4 – Monitoring and Adaptive Management: Monitor treated noxious weed infestations annually to determine the effectiveness of the control methods being used. Use this information to update and change, if necessary, the methods in the treatment plans.

Table 5.3-2. Characteristics and formulations of herbicides approved for use to control weeds on SCL-owned lands.

Chemical Name & Action	Product	Characteristics/ Selectivity	Environmental Issues/Recommendations
Acetic Acid Causes rapid dissolution of cell membrane integrity resulting in foliar tissue desiccation	Nature's Glory	Non-selective; will damage the leaves of most plants	▪ Often does not kill roots; not recommended for larger perennials ▪ Most effective for small annuals and young emergent plants ▪ Licensed applicators can only apply products labeled by the EPA; confirmation is required that this product is currently labeled.
Aminopyralid	Milestone	Selective to broad-leaved plants	▪ Low soil mobility ▪ Moderately persistent in soils ▪ Currently not permitted for use on NFS lands
Clove Oil/Sodium Lauryl Sulfate Disrupts cellular structure, leading to dehydration & eventual death	Burn Out Weed & Grass Killer II	Non-selective; will damage or kill species from nearly all plant families	▪ Degrades rapidly ▪ Low soil mobility ▪ Perennials may regenerate after a single application and require additional treatment ▪ Toxic to fish
Fosamine ammonium Enzyme inhibititor-	Krenite	Inhibits growth in woody plants and some forbs	▪ Readily degraded by soil microbes ▪ Half-life in soils ranging from 1 to 2 weeks, which limits its movement
Glyphosate* Inhibits 3 amino acids & protein synthesis	▪ Roundup ▪ Roundup Pro ▪ Rodeo ▪ Expedite ▪ Expedite Plus ▪ Expedite Pro ▪ Knockout	Non-selective; will damage or kill species from nearly all plant families. Translocates to roots & rhizomes of perennials	▪ Low volume applications most effective ▪ No apparent soil activity ▪ Some formulations can be used over water ▪ Rain within 6 hours can reduce effectiveness ▪ May require retreatment ▪ Off-site drift can damage sensitive species up to 100 ft
Isoxaben Disrupts an enzyme necessary for protein synthesis	Gallery 75 DF	Broad spectrum pre-emergent that kills the seeds of broadleaf weeds, grasses	▪ Moderately persistent in soil ▪ Slightly toxic to mammals & birds; toxicity to fish unknown

Table 5.3-2, continued…

Chemical Name & Action	Product	Characteristics/ Selectivity	Environmental Issues/Recommendations
Napropamide Inhibits root growth of seedlings	▪ Devrinol 5-G ▪ Devrinol 50WP	Broad spectrum pre-emergent that kills the seeds of broadleaf weeds, grasses	▪ Moderately persistent in soil ▪ Low soil mobility
Oryzalin Inhibits growth of germinating seed	▪ Surflan 75W ▪ Surflan AS ▪ Weed Stopper	Selective pre-emergent agent that prevents seed germination of many annual grasses & broadleaf weeds	▪ Slightly toxic to mammals & birds; moderately toxic to fish ▪ Moderately persistent in soil ▪ Can be used in combination with other herbicides for pre-emergent and emergent control ▪ Low risk of groundwater contamination except in soils with low organic matter or low clay content & with increased rainfall or high water tables
Sethoxydim Inhibits acetyl con-enzyme, a key step in the synthesis of fatty acids	Poast	Selective against many annual & perennial grasses	▪ Potentially mobile off site but degrades rapidly ▪ Off-site drift can damage sensitive species up to 50 ft
Sulfometuron methyl Inhibits the plant enzyme acetolactate	Oust	Pre-emergent; non-selective against both broadleaf & grass species	▪ Effective at low rates as a pre-emergent along roadsides ▪ Highly mobile off site through wind or water runoff ▪ Peak concentrations may damage nearby aquatic plants ▪ Off-site drift can damage sensitive species up to 900 ft
Triclopyr* Synthetic auxin – mimics natural plant hormones	▪ Garlon 4 ▪ Pathfinder II ▪ Turflon Ester	Selective against woody & perennial broadleaf species	▪ Garlon 4 is toxic to fish & aquatic invertebrates ▪ Amine formulations may be used near or over water ▪ Potentially mobile off site through water runoff ▪ Off-site drift can damage sensitive species up to 100 ft

Table 5.3-3. Summary of general methods suggested for controlling target weed species in the Boundary Project area.

Target Species	Methods				
	Manual	**Mechanical**	**Cultural**	**Chemical**	**Biological**
Diffuse knapweed	Hand pulling	Repeated mowing	• Deep plowing • Grazing by sheep & goats	Glyphosate	• Bronze knapweed root-borer • Seed head flies • Knapweed flower weevil • Broad-nosed seed head weevil • Knapweed root weevil
Giant knotweed	• Digging • Solarizing	Repeated mowing or cutting	Grazing by goats	• Tricloyr • Glyphosate	None known
Leafy spurge	None recommended	Repeated mowing	Grazing by cattle	• Fosamine ammonium • Glyphosate • Sulfomenturon	6 species of flea beetles – best for very large infestations.
Perennial sowthistle	Tilling	None recommended	Grazing by cattle or sheep	Glyphosate	None known
Purple loosestrife	Hand pulling	None recommended	None recommended	Glyphosate	• Leaf-eating beetles • Root-mining weevil • Flower-feeding weevil
Scotch broom	• Hand pulling • Digging	• Mowing • Cutting (mature plants only)	• Burning • Grazing by goats	• Tricloyr • Glyphosate	• Seed weevil • Bruchid seed beetle
Yellow flag iris	Grubbing	Cutting is recommended only if followed by herbicide application.	None recommended	Tricloyr Glyphosate	None known

Sources:
TNC Website; Team Leafy Spurge 2002; King County Website; State NWCB Website.

5.4. Rare, Threatened, and Endangered (RTE) Plant Species Program

Surveys conducted during relicensing studies in 2007 documented 15 vascular RTE plant species in the Project area. These species occurred in 206 polygons or subpopulations, which were combined into 53 populations. Since the completion of the plant surveys, two species (*Thalictrum dasycarpum* and *Impatiens aurella*) have been removed from the Washington Natural Heritage Program (WNHP), which will likely affect their status on the federal agencies' lists when these are updated (Table 5.4-1).

Although relicensing studies provided substantial data on the occurrence and distribution of RTE plant species within the Project boundary, there is a need for information regarding the population trends over the life of the new FERC license. To meet this need the RTE Plant Species Program includes the three elements listed below. This program also includes a provision for surveys in areas that are significantly affected by a natural disaster, such as a large-scale wildfire.

- Qualitative surveys to evaluate distribution and population trends for widespread RTE species in the Project area.
- Censuses to monitor trends of discrete RTE plant populations that could be significantly affected by disturbance because of their rarity and limited distribution in the Project area.
- Sampling to assess the distribution and density of invasive, non-native plant species within RTE plant populations.

Table 5.4-1. RTE plant populations and polygons (subpopulations) delineated during 2007 surveys.

Taxon	No. of Populations	No. of Polygons	GRank[1]	USFWS[2]	USFS[3]	BLM[4]	WNHP[5]
Astragalus microcystis Least bladdery milk-vetch	5	17	G5	None	S	BA	S
Carex capillaris Hair-like sedge	1	1	G5	None	S	BA	T*
Carex flava Yellow sedge	2	18	G5	None	None	BA	S
*Carex eburnea*** Bristleleaf sedge	1	1	G5	None	None	None	R1*
Cryptogramma stelleri Steller's rock-brake	4	11	G5	None	S	BA	S
Dryas drummondii Yellow mountain-avens	4	38	G5	None	S	BA	S
Hierochloe odorata Common northern sweetgrass	2	3	G5	None	None	None	R1
Hypericum majus Canadian St. John's-wort	1	5	G5	None	S	BA	S
Impatiens aurella Orange balsam	8	8	G4?	None	None	BT	None*
Muhlenbergia mexicana var. *mexicana* Wirestem muhly	1	24	G5	None	None	None	R1
Ophioglossum pusillum Adder's-tongue	2	2	G5	None	S	BS	T
Sanicula marilandica Black snake-root	8	10	G5	None	S	BA	S
Sisyrinchium septentrionale Northern blue-eyed grass	2	3	G3G4	None	S	BA	S
Thalictrum dasycarpum Purple meadowrue	7	60	G5	None	S	BA	None*
Viola renifolia Kidney-leaved violet	5	5	G5	None	S	BT	S
Totals	**53**	**206**					

Notes:

1 Global Rank (GRank)—Global Rank characterizes the relative rarity or endangerment of the element worldwide. Two codes (e.g., G1G2) represent an intermediate rank.
- G3 = Either very rare and local throughout its range or found locally in a restricted range (21 to 100 occurrences).
- G4 = Apparently secure globally.
- G5 = Demonstrably secure globally.
- ? = Questionable.

2 USFWS Classification: FT=Listed as Threatened, likely to become endangered (WNHP 2007).

3 USFS Regional Forester's Sensitive Species, Region 6, updated July 2004 (USFS 2004). S = Sensitive.

4 (BLM Special Status Species, updated March 2005 (BLM 2005). BLM Special Status Species Categories:
- BS = Bureau Sensitive – Nominated by BLM District Managers; must be listed by WNHP to be eligible.
- BA = Bureau Assessment – Species known or suspected on BLM land that are not federally listed, state listed, or BS and that are listed by the WNHP but not eligible as BS.
- BT = Bureau Tracking – All species known or suspected on BLM land that are not federally listed, state listed, BS, or BA, and that are WNHP Review species or Watch species.
- FC = Federal Candidate Species in Oregon and Washington.
- FT = Federal Threatened Species in Oregon and Washington.

5 State Status: WNHP (2007) provides the following explanation of state status:
- E = Endangered taxa are at critically low levels or their habitats have been degraded or depleted to a significant degree presenting the danger of becoming extinct or extirpated from Washington within the foreseeable future if factors contributing to their decline continue.
- T = Threatened are likely to become Endangered in Washington within the foreseeable future if factors contributing to population decline or habitat degradation or loss continue.
- S = Sensitive taxa are vulnerable or declining and could become Endangered or Threatened in the state without active management or removal of threats.
- R = Review taxa are either R1 = Taxon in need of additional field work before a status can be assigned, or R2 = Taxon with unresolved taxonomic questions.
- W = Watch List taxa that are less at risk in Washington than previously assumed.

*State status has changed since surveys were conducted in 2007. Current status is reflected in the table.

** Originally identified as *Carex krausei* ssp. *porsildiana* but later determined to be *C. eburnea*.

Objective 1 – Surveys of locally abundant RTE plant species: Conduct qualitative surveys to evaluate distribution and population trends for widespread RTE plant species in the Project area. Begin surveys within two years of license issuance and then once every six years.

The intent of these periodic surveys is to determine general population trends for the four most widely distributed and abundant RTE plant species in the Project area:

- Least bladdery milk-vetch
- Yellow mountain-avens
- Black snake-root (*Sanicula marilandica*)
- Yellow sedge (*Carex flava*)

Subsampling will be required because of the wide distribution of these species and the inaccessibility of some of the habitat (i.e., cliffs). Information will be collected on the extent of plant subpopulations, level of potential threats, ongoing disturbances, and any major changes in the number of subpopulations compared to the baseline data in the USR (SCL 2009).

Purple meadowrue and orange balsam are not included in the periodic surveys because these species are both very common in the Project area, have been delisted by the WNHP, and are likely to be delisted by the BLM and USFS by the time of license issuance.

Task 1.1 – Subpopulation Selection: For each survey, select 25 percent of the subpopulations of each of the four species for sampling. Include all subpopulations that are vulnerable to disturbance (near roads, campgrounds, or Project Facilities) as part of the 25 percent subsample for each survey. Select subpopulations of each species in undisturbed locations on a rotating basis to bring the number of subpopulations surveyed to 25 percent of the known total plant population. Use previously mapped data showing the distribution and extent of each of the four RTE plants to select the subpopulations to sample.

Task 1.2 – Data Collection: For each survey, collect data on the current number and distribution of each selected RTE plant subpopulation, and record any disturbances and potential threats. Also record the presence and species of invasive, non-native plants and collect data on density (according to criteria in the IWMP) and/or cover. On NFS lands, record data per the protocol identified in Appendix 1.

Task 1.3 - Evaluation: Evaluate any changes in RTE plant subpopulations in the context of the expected range of fluctuations. In consultation with the TRWG, determine the need for more intensive surveys or management actions, including weed control measures, if warranted.

Task 1.4 – Species List Updates: Include newly listed RTE species designated for survey by the TRWG (based on a review of the USFS, BLM, and State RTE plant species' lists) into the next round of surveys on the standard 6-year schedule.

Objective 2 – Censuses of RTE plant species with limited distribution: Conduct a census to evaluate distribution and population trends for RTE plant species with limited distribution in the Project area. Conduct the first census within two years of license issuance and then census every three years thereafter.

The intent of these censuses is to closely monitor RTE species that have limited populations in the Project area or are particularly rare or vulnerable, including the following nine species:

- Bristleleaf sedge (*Carex eburnea*)
- Hair-like sedge (*Carex capillaris*)
- Steller's rock-brake (*Cryptogramma stelleri*)
- Canadian St. John's-wort (*Hypericum majus*)
- Common northern sweetgrass
- Wirestem muhly
- Adder's tongue
- Northern blue-eyed grass (*Sisyrinchium septentrionale*)
- Kidney-leaved violet

***Task 2.1 – Data Collection*:** Collect the following data on each subpopulation of the nine RTE plant species with limited distribution in the Project area: number of plants, distribution, and type and level of disturbance. Also collect information on the species and cover of invasive, non-native plants that occur in the Project area (coordinated with the IWMP). Survey suitable habitat adjacent to known subpopulations to determine if new areas have been colonized by RTE plant species.

Task 2.2 - Evaluation: Evaluate any changes in RTE plant subpopulations in the context of the expected range of fluctuations and in consultation with the TRWG, determine the need for more intensive surveys or management actions, and provide recommendations for weed control (likely hand pulling), as appropriate.

Task 2.3 – Species List Updates: Include newly listed species designated for census by the TRWG (based on a review of the USFS, BLM, and State RTE plant species' lists) into the next round of censuses on the standard three-year schedule.

Objective 3 – Extensive RTE plant survey: Conduct an extensive survey following a catastrophic event in the Project area to determine effects on RTE plants.

Task 3.1 - Assessment: Determine the appropriate extent of a post-catastrophic event survey for RTE plants in consultation with the TRWG.

Task 3.2 – Survey and Mapping: Use survey, mapping, and reporting methods similar to those used in relicensing studies to conduct the survey.

Task 3.3 - Restoration: Identify any appropriate restoration measures for affected RTE plant populations.

Objective 4 – Update and Coordination: Update the Project database following each survey or census and coordinate with TRWG to ensure that RTE plant data are current.

Task 4.1 – Database Updates: Update the GIS database following each survey or census.

Task 4.2 –Information Updates: Coordinate with the TRWG annually to obtain up-to-date RTE plant population data that may have been collected by the USFS, BLM, or Washington Natural Heritage Program.

Objective 5 – Coordination with the RRMP: Use the findings from RTE plant species monitoring surveys and censuses to inform Project-related recreation management, with the goal of protecting RTE plant populations.

Task 5.1 – RTE Plant Protection: Coordinate with RRMP implementation to ensure that RTE plant populations are protected. Develop site-specific plans as appropriate to protect RTE plants near recreation sites.

Task 5.2 - Monitoring: Monitor RTE plant populations near Project recreation sites during the surveys and censuses to ensure protection.

5.5. Wildlife Program

Relicensing studies documented over 100 wildlife species in the Project area, including a wide variety of birds and mammals and a few amphibian and reptile species. Twenty RTE wildlife species were recorded in or near the Project area (Updated Study Report, SCL 2009).

The TRWG has identified three wildlife species that would potentially benefit from long-term monitoring: bald eagle, peregrine falcon, and bank swallow. Long-term monitoring data may be used to determine the need for management actions.

Elements of the Wildlife Program include the following:

- Annual bald eagle nest monitoring surveys.
- Management plans for bald eagle nests affected by Project-related activities.
- Surveys for peregrine falcon and bank swallows.
- Documenting wildlife observations in the Project area.

Monitoring/survey protocols and associated data forms are provided in Appendix 1.

Objective 1 – Bald eagle nest monitoring: Monitor bald eagle nesting sites within the Project boundary annually. Begin monitoring within the first year of license issuance.

Task 1.1 – Bald Eagle Nest Surveys: Conduct two bald eagle nest surveys, one early in the season (April) and one late (June) of each year to determine occupancy of known nest sites within the Project boundary.

- Subtask 1.1.1: Record on standard forms productivity data, including the number of adult birds and growth stage and number of young (data form and growth stage criteria to be included in Appendix 1).
- Subtask 1.1.2: To the extent possible, determine productivity based on the two surveys.
- Subtask 1.1.3: Conduct a helicopter survey in April once every five years within 0.5 mile of Boundary Reservoir to search for new eagle nests. Consider surveying Washington Rock for peregrine falcons (see Objective 3, Task 3.4, below).
- Subtask 1.1.4: Document new nest sites within the Project boundary using a GPS unit or by mapping onto topographic maps and then entering data into the GIS database.

Task 1.2 – Reporting: Report results of the annual surveys through the Rolling 3-Year Annual Report/Work Plan and submit data to the WDFW Wildlife Data Center in Olympia. Data should include:

- Number of occupied territories.
- Number of successful nests.
- Number of young per occupied territory.
- Number of young produced in the survey area.

Objective 2 – Bald eagle nest management plans: Develop and implement management plans for bald eagle nest sites documented within the Project boundary. Implement within three years of license issuance.

Task 2.1 – Management Plan Development: Prepare management plans for bald eagle nest sites documented within the Project boundary. Include the following information in each plan:

- Location on map.
- Setting (description of territory, land use, roads, etc.).
- Habitat conditions, perch sites, etc.
- Description of desired conditions.
- Description of any current protection measures implemented by SCL or other entity.
- Description of existing risks to successful breeding.
- Recommended protection measures and implementation schedule.
- Monitoring plan, if necessary.

Task 2.2 – Protection Measures: Implement protection measures, as identified in the nest management plans, which are within SCL control. Coordinate with the USFS and/or BLM on implementation of the plans developed for nests on federal lands.

Objective 3 – Other wildlife monitoring: Monitor peregrine falcon breeding at identified cliff locations and bank swallow colonies along and immediately adjacent to the reservoir shoreline. Begin monitoring within one year of license issuance.

Task 3.1: Bank Swallow Nest Surveys. Conduct one nest survey annually during the breeding season (late May or early June) for bank swallows and collect the following data:

- Bank swallow colony location and number of burrows.
- Evidence of disturbance or other management concerns.

If no or few bank swallows are observed on the selected survey date, conduct a second survey within 1-2 weeks.

Task 3.2: Initial Peregrine Falcon Habitat Surveys and Monitoring. Conduct an initial survey at the following four cliff locations along the Project reservoir known to have apparently suitable nesting habitat for peregrine falcons (based on field studies and observations in 2007-2009) (pers. comm. G. Green, Wildlife Biologist, Tetra Tech, November 5, 2009):

- Washington Rock (known eyrie)
- the cliffs along the "Narrows" in the Canyon Reach near the BLM campground
- Boundary tailrace, east cliff face
- Boundary tailrace, west cliff face

In addition, the cliffs along the reservoir 0.5-1 mile north of Washington Rock will be examined for potentially suitable peregrine falcon nesting habitat. If suitable habitat is present, this site will be included in the initial survey.

- ***Subtask 3.2.1:*** Survey each of the four or five sites up to two times between April 15 and May 15 to determine occupancy (only one survey will be needed if occupancy is determined during the first survey). Surveys will be conducted within the first 5 hours after dawn or the last 5 hours before sunset and will last for 4 to 5 hours.
- ***Subtask 3.2.2:*** Monitor each occupied site up to two times between June 10 and July 10 to determine nest success/productivity (only one survey will be needed if success/productivity is determined during the first survey). Surveys will be conducted within the first 5 hours after dawn or the last 5 hours before sunset and will last for 4 to 5 hours. Collect and record the following data:
    - Nest site location, occupancy, nest success and productivity (including the number of adult/subadult birds and growth stage and number of young), if possible.
    - Evidence of disturbance or other management concerns.

See Appendix 1 for more detailed protocol on habitat surveys and monitoring, including timing (time of day, number of days between survey/monitoring periods), viewing conditions, required equipment, data sheets, and reporting.

***Task 3.3: Monitoring of Occupied Sites*.** Monitor each peregrine falcon eyrie identified as occupied, annually for 4 consecutive years following the initial habitat survey. Monitor each eyrie up to two times between April 15 and May 15 to determine occupancy and up to two times between June 15 and July 10 to determine nest success/productivity. Follow protocol in Appendix 1.

Task 3.4: Periodic Peregrine Falcon Habitat Surveys and Monitoring. Resurvey the four or five habitat sites identified in Task 3.2 for peregrine falcon occupancy every 6 years after the initial survey using the same methods described in Task 3.2. Monitor identified eyries that year and then every 2 years for occupancy and nest success/productivity following the protocol in Appendix 1. When the protocol is developed for conducting helicopter surveys to locate bald eagle nests (Subtask 1.1.3, above), evaluate the safety and potential efficacy of conducting a helicopter survey of Washington Rock to search for peregrine falcon eyries.

Task 3.5: Reporting/Assessment. Report results of the surveys through the Rolling 3-Year Annual Report/Work Plan and provide occupancy and productivity data to the WDFW Data Center in Olympia. Discontinue surveys at any of the four or five potentially suitable habitat locations if it has been continually unoccupied at license year 24 and assess the monitoring frequency of occupied sites.

Objective 4 – Wildlife database and records: Develop a database for tracking wildlife observations in the Project area and **c**oordinate with the USFS and WDFW to update lists of RTE species in conjunction with the schedule for revising the TRMP (see Chapter 2)**.** Implement within three years of license issuance.

Task 4.1: Develop and maintain a database for tracking wildlife observations within the Project area using the database created during relicensing studies as a baseline.

- Subtask 4.1.1: Coordinate with the TRWG to develop a list of wildlife species for which additional information would be useful for management purposes.
- Subtask 4.1.2: Record these species as observed incidentally during other survey/monitoring activities conducted in the Project area (bald eagle, bank swallow, osprey, peregrine falcon, RTE plants, and weed surveys).
- Subtask 4.1.3: Provide Project staff with hard copy or electronic forms for recording wildlife they observe in and near the Project and enter this information into the database.
- Subtask 4.1.4: Summarize wildlife observations in the Rolling 3-Year Annual Report/Work Plan and evaluate the usefulness of this tracking program after 10 years.

Task 4.2: Update records for grizzly bear, gray wolf, Canada lynx, and woodland caribou sightings within the Project area from the USFWS, WDFW, and/or USFS and enter these data into the Project GIS database developed during relicensing. The updates will be conducted annually beginning the first year the database is developed.

***Task 4.3*:** Coordinate with the TRWG if there is a substantial change in use patterns of grizzly bear, gray wolf, Canada lynx, or woodland caribou on or adjacent to the Project boundary. Work

cooperatively to identify any needed protection measures based on specific habitat use parameters. A substantial change in use patterns by these species would include the following:

- A significant increase, as determined by the TRWG, in sightings of these species in or near the Project area.
- Multiple sightings within a year of adult and young grizzly bear, gray wolf, Canada lynx, or woodland caribou within the Project boundary.

***Task 4.4*:** In cooperation with the TRWG, determine if newly-listed RTE wildlife species or increased use of the Project area by RTE wildlife warrant the development of specific measures to protect them or their habitats from human disturbance associated with Project operation, maintenance, or construction.

5.6. Shoreline Management Program

As the Licensee, SCL is responsible for ensuring an appropriate balance among multiple interests in the use of Project lands and waters. FERC requires licensees to manage for power generation and environmental and cultural resources at hydroelectric projects and has included standard license conditions pertaining to Project lands and waters in almost all new licenses. These standard conditions define the types of land conveyances, land uses, and structures that licensees can and cannot permit on Project lands and waters, some of which require no prior approval from FERC. For some uses, a licensee must give prior notice after which it may proceed if FERC has no objection. Some other actions require prior FERC approval. These requirements will be defined in the license order issued by FERC.

Pend Oreille County administers a Shoreline Master Program (POC 2009) per the State's Shoreline Management Act. The area over which the County has shoreline jurisdiction coincides with portions of the Project. SCL must comply with the County's shoreline regulations but also has the authority under its FERC license to impose additional conditions on land uses within the Project boundary to protect Project resources and ensure that the requirements of the FERC license can be met. Similarly, the USFS and BLM have jurisdiction over federal lands within the Project boundary and SCL must adhere to the respective agencies' guidelines and policies when conducting activities on federal lands. This Shoreline Management Program was designed to be consistent with the Pend Oreille County Shoreline Master Program and the USFS's and BLM's management plans.

For the Project, shoreline management activities and land uses are addressed in several related plans and programs. Other sections of the TRMP address Project land management topics including programs to address shoreline erosion, habitat protection and enhancement, integrated weed management, and RTE plant and wildlife species management. The TRMP also includes a section on monitoring (see Chapter 6). Other resource-specific management plans in the License Application also address Project shoreline management: (1) the RRMP addresses the management of developed and dispersed recreation use and activities on Project lands and waters, and (2) the HPMP addresses the protection of cultural resources on Project lands.

This Shoreline Management Program (1) identifies appropriate shoreline land uses within the Project boundary intended to minimize potential environmental effects on sensitive plant and wildlife species and habitat and to protect and enhance the Project shoreline, (2) provides for management and coordination of private and public (non-federal) shoreline development permitting within the Project boundary, and (3) manages debris accumulation and removal along the Project shoreline, particularly following high-flow spring runoff. Concerning federal lands, SCL will coordinate directly with the BLM and USFS regarding actions affecting those lands.

Under its current license, SCL has the authority to implement a shoreline permit system for the development of facilities within the Project boundary, such as boat docks and moorage. Because of the minimal private shoreline development on Boundary Reservoir (only two docks exist at this time), SCL has thus far not initiated such a process. SCL anticipates that FERC will include similar provisions for a permit system in the new license and that SCL will continue to rely on existing permit processes, specifically those administered by Pend Oreille County. SCL does not anticipate the need in the near future to implement a permit system as it is expected that levels of private shoreline development during the new license term will remain low, as predicted in the Land and Roads Study Final Report (SCL 2009).

Objective 1 – Define and map Project shoreline land use designations, allowed uses, and required approvals: These will be based on FERC requirements and the license order, SCL License Application, Pend Oreille County Comprehensive Plan (POC 2005) and Shoreline Master Program, BLM Spokane District Resource Management Plan (BLM 1985), and USFS Colville National Forest Land and Resource Management Plan, as amended (USFS CNF 1988). Implement within two years of license issuance.

Task 1.1: Develop shoreline land use designations and apply these designations to Project lands and waters, consistent with Pend Oreille County shoreline regulations, with categories likely including Conservancy, Urban, and Rural. Prepare a map of these land use designations specific to the Project area. Coordinate the development of the map and shoreline land use definitions and restrictions with Pend Oreille County, towns of Metaline and Metaline Falls, state of Washington, BLM, and USFS. Once developed, manage Project shoreline areas per the shoreline land use designations (definitions, allowed uses, etc.) during the license term.

Task 1.2: Define those actions (e.g., activities, uses, conveyances, leases) that require prior FERC approval or prior notice to FERC. Define the authority and approval process by BLM and USFS for Project-related actions on federal lands.

Objective 2 – Develop and implement guidelines for private shoreline facilities along the Boundary Reservoir shoreline (within the Project boundary): In consultation with permitting agencies, prepare guidelines for facilities and allowed uses on private land within the Project boundary. Define allowed and prohibited facilities and develop general design guidelines. Communicate these guidelines to the public. Coordinate with permitting agencies on shoreline permit applications over the new license term. Implement within three years of license issuance.

Task 2.1: Assess and define the current and potential future types of allowed private shoreline facilities (e.g., docks, boarding floats, mooring buoys, stairways, etc.) along the Project

shoreline. Develop appropriate guidelines for ongoing maintenance of existing private shoreline facilities within the Project boundary, and develop design guidelines for new facilities. Guidelines for additional/future types of facilities could be prepared, as needed, during the new license term.

Task 2.2: Develop and implement a public awareness program regarding shoreline permitting, allowed and prohibited uses, and design and maintenance guidelines. Coordinate the development of these guidelines with permitting agencies, including Pend Oreille County (applicants wishing to construct new or modified shoreline improvements, such as new docks and boat moorage, within the Project boundary must comply with the Pend Oreille County Shoreline Master Program and must satisfy all County permit requirements) and with relevant private landowners. Work with permitting agencies to review shoreline applications and implement the guidelines, as appropriate. Define a process for resolving potential disagreements with or among permitting agencies about allowable uses and/or guidelines.

Task 2.3: Monitor long-term compliance with established design guidelines and permit requirements, and ongoing maintenance. Establish enforcement procedures to address facilities that are not built to the established standards, not maintained, or are abandoned.

Task 2.4: If design guidelines and/or County permit requirements are not consistently being met and/or existing processes do not adequately protect Project resources, develop and administer a Project-specific permit system.

Objective 3 – Coordinate the implementation of RRMP actions at shoreline public recreation sites and use areas with the TRMP: Manage public (SCL and town of Metaline) shoreline recreation facilities (both developed and dispersed) and use areas as defined in the RRMP. Coordinate these actions with other TRMP programs. Implement within two years of license issuance.

Task 3.1: Coordinate recreation programs defined in the RRMP with the TRMP Shoreline Management Program and with other TRMP programs, as appropriate.

Task 3.2: Coordinate the review of shoreline permits and other agency approvals (e.g., state Hydraulic Project Approval [HPA]) with Pend Oreille County and other agencies, as applicable, for public (non-federal) recreation facilities defined in the RRMP.

Objective 4 – Periodically remove shoreline debris: Remove shoreline debris that accumulates, particularly after high-flow spring runoff, and dispose of debris as necessary. Implement within one year of license issuance.

Task 4.1: Develop a schedule to adequately manage shoreline debris on Boundary Reservoir over the new license term. Prioritize debris removal activities, focusing first on potential public health and safety, water quality, and navigational hazards and concerns.

Objective 5 – Develop and implement a Project public safety and education program: Manage the Project shoreline and waters to ensure adequate public safety. Develop the plan within two years of license issuance and begin implementation in year three, in coordination with the multi-resource I&E Program outlined in the RRMP.

Task 5.1: As part of the RRMP I&E Program, assess potential public safety, interpretation, and education needs and concerns on Project lands and waters. Develop actions to adequately address these needs and concerns. Such actions may include: enhanced public education, public notice, and information about Project operations including reservoir water surface elevation fluctuations, maintenance drawdowns, Project security and safety restrictions, high-flow spring runoff conditions, boating navigation conditions, watercraft use through Metaline Falls and the portage option, shoreline access points to leave or enter the Project, and contacts for emergency help.

Task 5.2: Monitor public safety and visitor education through the RRMP Recreation Monitoring Program and take appropriate actions to respond to issues that arise over the license term.

6 MANAGEMENT OF PROJECT-RELATED ACTIVITIES AND FACILITIES

Boundary Project staff plays a critical role in ensuring that sensitive Project resources are protected. The following three programs have been developed to address the ongoing operation of the Project and apply to all Project lands, facilities, roads, and operations and maintenance activities: Environmental Awareness, Preconstruction Planning, and BMPs.

6.1. Environmental Awareness Program

The purpose of the Environmental Awareness Program is to ensure that Project staff members are informed about the sensitive biological and cultural resources associated with the Project and are knowledgeable about the measures necessary to protect those resources. This program will apply to SCL staff members who work at the Project. The goals of the program are to educate Project staff on the potential impacts of Project operations, maintenance, and construction on wildlife and habitat, including RTE species, and cultural resources, and to put into practice ways to avoid or minimize effects on those resources. The objectives of this program are as follows:

- Objective 1: Create a training program and associated schedule to educate Project staff on wildlife, sensitive species habitats, and other sensitive biological and cultural resources, including information on federally listed Threatened and Endangered species, within two years of license issuance.
- Objective 2: Incorporate requirements for contractor environmental awareness into contracts for work that will be conducted at the Project.
- Objective 3: Review environmental materials as part of the TRMP review process and revise as necessary.

Training and education for the Environmental Awareness Program will include maps, presentations, and informational materials, as described below.

6.1.1. Maps

The intent of developing maps for worker training/education is to provide SCL staff with information on the locations of sensitive plant and wildlife habitats in the Project area. SCL will create a set of maps showing areas with sensitive resources that require special consideration in planning and conducting operations, maintenance, and construction activities. These maps will be updated every two years and will include the locations of active and inactive bald eagle and osprey nests, known sites of RTE plant populations, and the locations of other RTE wildlife and sensitive resources. The maps will be developed as 11x17 sheets and will include the name and phone number of the responsible SCL environmental staff member to contact if work is to be done in these areas. Maps will be labeled as confidential and will be provided only to key SCL staff.

6.1.2. Training Presentations

Presentations will be the primary means of providing environmental awareness training to Project staff, although web-based video may also be used. The intent of the training will be to: (1) build awareness of the natural and cultural environment associated with the Project and (2) provide a foundation of cooperation and communication among employees engaged in operations, maintenance, and construction and SCL environmental staff. Environmental awareness training will be conducted at least once annually for new Project employees by SCL environmental staff. As needed, environmental resource informational materials will be developed for and distributed at the training sessions.

Examples of material to be covered at the training sessions include:

- BMPs to minimize disturbance to or mortality of wildlife - Requirements for work and travel within the Project area, including staying on existing roads, obeying posted speed limits, keeping construction areas free of garbage, and prohibiting the illegal use of fire arms.
- Endangered species awareness - Information on federally protected species known or potentially occurring in the Project area, including: (1) legal requirements for protection, (2) descriptions of the species and their local habitats, (3) the need for a site evaluation prior to ground-disturbing activity, and (4) instructions on required actions if protected species occur in a proposed activity area.
- Wildlife mortality - What to do and whom to contact if dead, injured, or diseased wildlife is found.
- Enforcement - Whom to contact if the following is observed: (1) vehicle use in the BWP, (2) trespassing in seasonally or permanently closed sites in the Project area, or (3) wildlife poaching or harassment.
- Guidelines for minimizing the establishment and spread of weeds - Actions to minimize the transport and spread of invasive species, such as staying on roads when possible and cleaning vehicles that have been off-road and boats that have been used off the reservoir.

These sessions will be interactive to make the training effective and meaningful. In addition, each session will include a feedback process to evaluate and improve the training program over time.

6.1.3. Informational Materials

In addition to materials developed for the training sessions, a concise guide will be developed that summarizes important natural resource information. The guide will be created as one or two sheets that can be posted on bulletin boards, added to field manuals, or kept in boats and trucks. The guide will include illustrations and limited text that summarizes the information presented during the training presentations, including contact information. Contact information will be updated annually if needed.

6.2. Preconstruction Planning Program

Preconstruction planning is intended to avoid, minimize, or mitigate effects on cultural and terrestrial resources from non-routine Project-related construction activities. SCL environmental staff will coordinate with Project staff to identify appropriate preconstruction surveys, site-specific environmental standards, and BMPs. Environmental staff will also ensure that the Project complies with all federal, state, and local environmental regulations. Preconstruction surveys and environmental construction standards do not apply to emergencies or situations involving public safety. Objectives associated with preconstruction planning are as follows:

- Objective 1: During project planning, designate an SCL environmental staff member responsible for identifying and conducting appropriate preconstruction surveys, obtaining required permits, and developing site-specific environmental construction standards and BMPs.
- Objective 2: In advance of project implementation, develop methods and a schedule for monitoring site-specific compliance with environmental construction standards, permit requirements, and BMPs.

Environmental construction standards relevant to terrestrial resources are listed below:

- Avoidance or mitigation of adverse effects, including seasonal/timing constraints on construction, design revisions, and habitat restoration.
- Erosion control, weed control, and revegetation plans for areas temporarily disturbed by construction activities.
- Consultation with the USFWS on activities that have the potential to affect federally-listed or proposed species.
- Compliance with the protection measures outlined in the bald eagle nest site management plans (to be completed following license issuance).

6.3. Best Management Practices

Although BMPs will be incorporated into larger-scale construction activities, the purpose of this section is to adopt measures that govern routine, day-to-day activities to avoid or minimize environmental effects potentially resulting from Project operations, maintenance, or minor construction activities. BMPs do not apply to emergency maintenance or activities involving public safety. Objectives associated with BMPs are as follows:

- Objective 1: Create training materials for selecting and implementing appropriate standard BMPs and incorporate them into the environmental awareness training (see Section 7.1) within two years of license issuance.
- Objective 2: Develop methods and a schedule for monitoring compliance with standard BMPs for routine Project operations, maintenance, and minor construction activities, within two years of license issuance.

BMPs for large construction activities will be developed on a site- and activity-specific basis. Standard BMPs for preventing the spread of weeds and protecting wildlife and vegetation during routine operations, maintenance, and minor construction activities are listed below:

- Weed Prevention BMPs
    - Minimize ground disturbance associated with maintenance activities, including road grading.
    - Revegetate disturbed sites using native species, as well as plant materials that meet USFS and Pend Oreille County NWCB standards, where necessary.
    - Follow established guidelines for revegetation of disturbed sites including site assessment, planning and preparation, and timing of planting.
    - Clean vehicles and equipment before and after use off of paved or gravel roads or on non-reservoir waters to minimize the risk of spreading weeds.
    - Treat existing infestations of noxious weeds before maintenance or construction activities occur in these areas, if possible.
    - Use certified weed-free seed and other materials for revegetation and erosion control.
    - Implement other measures to avoid or minimize the establishment and spread of invasive non-native plants, as identified in the Integrated Weed Management Program.
- Wildlife and Vegetation BMPs
    - Schedule maintenance, monitoring, and construction activities to avoid disturbance to plants and wildlife during sensitive time periods (e.g., wintering, breeding).
    - Avoid or minimize vegetation removal during the nesting season.
    - Minimize the development of new linear structures, such as fences, pipelines, roads, and trenches, that fragment habitat.

- Clean equipment (e.g., nets, hip boots, boats, and traps) before use at another location to minimize the risk of spreading disease organisms and invasive plants, snails, fish, and amphibians.
- Ensure that work site conditions comply with WDNR fire precaution levels, where appropriate.
- Properly dispose of all trash.
- Identify and clearly mark sensitive biological habitats for avoidance.
- Avoid or minimize the removal or disturbance of wetland and riparian vegetation to the maximum extent feasible.

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Appendix 1: Monitoring Protocols and Data Forms for TRMP Implementation

Monitoring/survey protocols and associated data forms are provided for the following surveys/resources:

- Bald eagles (Section 5.5, Objective 1);
- Bank swallows (Section 5.5, Objective 3);
- Peregrine falcons (Section 5.5, Objective 3).

Monitoring/survey protocols and associated data forms related to the following surveys/resources will be developed in 2010/2011 and submitted to FERC within 180 days of license issuance. At the time of submittal, SCL will request that FERC amend the TRMP to include the additional protocols:

- Select sites and refine existing protocol for long-term erosion monitoring (Section 5.1, Objective 2);
- Refine protocol for periodic weed surveys (Section 5.3, Objective 1);
- Refine protocol for determining effectiveness of weed control (Section 5.3, Objective 3);
- Refine protocol for RTE plant species surveys (Section 5.4, Objectives 1 and 2);
- Develop protocol for bald eagle helicopter surveys (Section 5.5, Objective 1).

BALD EAGLE NEST SURVEY PROTOCOL

Known bald eagle territories: As of 2009, there were four known bald eagle territories within the Project boundary:

- Everett Island – existing nest (used in 2006 but not 2007 or 2008) is on the southern tip of Everett Island;
- Metaline – active nest is on the east side of the reservoir across from Metaline Park;
- Sand Creek – active nest is on the east side of the reservoir on the north side of Sand Creek near the confluence with the reservoir. Two older nests are located in the wetland/riparian habitat in the Boundary Wildlife Preserve (BWP); and
- Box Canyon – active nest is on the east side of the reservoir, approximately 0.5 mile downstream of Box Canyon Dam, across from the Box Canyon Resort.

Other nest sites may become established over the life of the Project License (and documented during helicopter surveys to be conducted every 5 years or through incidental observations) and will be mapped and added to the list of territories to be surveyed. Any site not occupied for 5 consecutive years will be dropped from the annual surveys.

Equipment: 8x or 10x power binoculars, spotting scope (minimum 15 - 45x power), and tripod.

Survey Conditions: Surveys will be conducted under weather conditions that are conducive to visibility and bald eagle activity (sunny or high overcast clouds, minimal precipitation, and light wind).

Viewing Locations and Access: View each nest from a location that does not disturb eagles on or near the nest site. Suggested viewing locations and access for existing nest sites are as follows:

- Everett Island Territory – Everett Island, northeastern tip (boat access)
- Metaline – Metaline Park (vehicle access)
- Sand Creek – Highway 30 pullout/reservoir overlook (vehicle access)
- Box Canyon – Box Canyon Resort parking area (vehicle access)

Survey Timing: Annually in mid or late April for nest occupancy, and late May or early June for nest success/productivity. Surveys can be conducted at any time of day between sunrise and sunset.

Occupancy Surveys: Occupancy is defined as the presence of **two** adult bald eagles on a territory. Occupancy survey methods are as follows:

- There is no minimum occupancy survey time; surveys can end as soon as two adult bald eagles are observed at the site.

- Spend up to 2 hours observing a known territory if two adult bald eagles are not evident upon arriving at the viewing location.
- If occupancy is not observed the first day, revisit the site the following day at a different time for up to 2 hours.
- Classify the territory as unoccupied if two adult bald eagles are not observed at the site during 4 hours of viewing (2 hours each day for 2 consecutive days).

Nest Success/Productivity Surveys: Nest success is defined as the presence of young in or near the nest; productivity is the number of young. Methods for nest success/productivity surveys are as follows:

- There is no minimum productivity survey time; surveys can end as soon as nestlings or fledglings have been observed.
- Spend up to 1 hour observing an occupied territory if young bald eagles are not sighted upon arriving at the viewing location.
- If nest success/productivity is not determined the first day, revisit the site the following day at a different time for up to 1 hour.
- Classify the nest site as failed if young bald eagles are not observed during two hours of observation (one hour each day for two consecutive days).

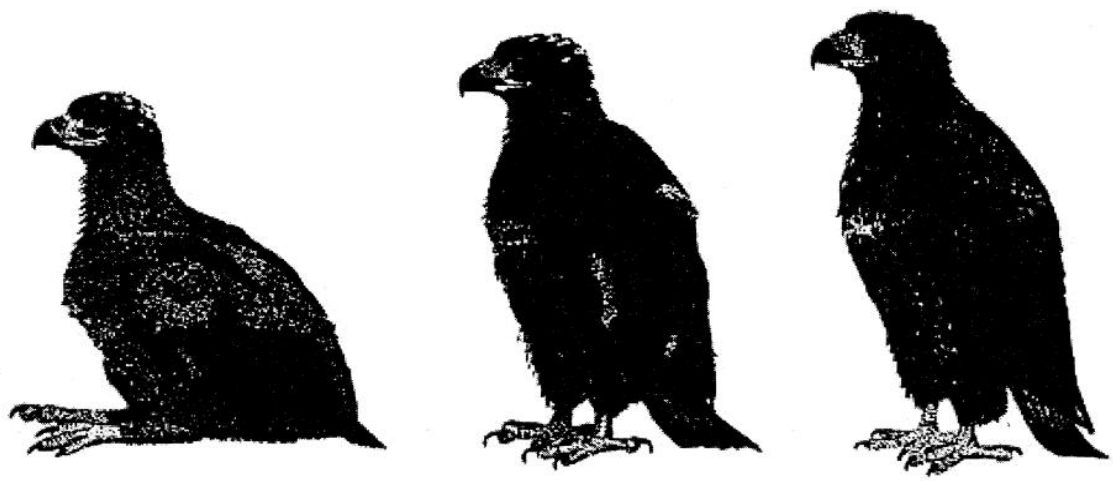
Documentation: Photograph and map occupied territories by using GPS (after eagles have fledged or nest has failed) or marking locations on a USGS map. Record data on the attached form; productivity data includes number of young or fledglings and developmental stage (see below). Include description of nest tree and site conditions. Add to the map and database any new territories observed during helicopter surveys, incidentally during other field activities, or during occupancy surveys.

Stage 1a
Small 1st Down
(0-1, 10-11)*

Stage 1b
Large 1st Down
(1-2, 9-10)

Stage 2
2nd Down
(2-4, 7-9)

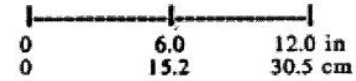
Stage 3a
Early Contour Growth
(4-5.5, 5.5-7)



Stage 3b
Late Contour Growth
(5.5-7.5, 3.5-5.5)

Stage 3c
Contour with Down Patches
(7.5-9.5, 1.5-3.5)

Stage 3d
Complete Contour
(9.5+, 0-1.5)



* (approximate number of weeks since hatching, approximate number of weeks until fledging)

FROM: Carpenter, George P. 1990. An illustrated guide for identifying developmental stages of bald eagle nestlings in the field. Final draft, April 1990. San Francisco Zoological Society, San Francisco, CA 94132.

Bald Eagle Nest Survey Form

Observer(s): _____

Territory	Occupancy Survey Date(s)	Occupancy Survey Times	No. of Adults Present	Occupancy Confirmed Y/N	Productivity Survey Date(s)	Productivity Survey Time(s)	No. of Adults Present	No. of Young Observed	Develop-mental Stage of Young
Everett Island									
Metaline									
Sand Creek									
Box Canyon									

Territory	Nest Tree Species	New or Existing Nest	Observations
Everett Island			
Metaline			
Sand Creek			
Box Canyon			

BANK SWALLOW NEST SURVEY PROTOCOL

Known Colonies: During relicensing studies in 2007 and 2008, bank swallow colonies were observed and mapped in a number of locations, including near Peewee Falls, several sites in the Canyon Reach, and on the Boundary Wildlife Preserve (BWP). As of 2009, the largest colony in the area was in a road cut along the west side of Highway 30, adjacent to the pullout/reservoir overlook across from the BWP. However, bank swallow colonies are somewhat ephemeral, as erosion creates and destroys habitat.

Equipment: 8x or 10x power binoculars and manual tally counter (clicker).

Survey Conditions: Surveys can be conducted under almost any conditions except heavy rain or strong winds.

Viewing Locations and Access: Survey all suitable shoreline habitat along the entire reservoir. Suitable shoreline habitat is defined as vertical dirt banks that are above the spring high water level and that are at least 5 feet high. Access for surveys will be by boat, with the exception of the large colony along Highway 30 near the pullout/reservoir overlook, which will be accessed by vehicle.

Survey Timing: Once annually, in late May or early June. Surveys can be conducted at any time of day between sunrise and sunset. If no or few bank swallows are observed on the selected survey date, conduct a second survey within 1-2 weeks.

Occupancy Surveys: Methods are as follows:

- Check all vertical dirt banks above the spring high-water level (as determined by debris or water lines) that are at least 5 feet high (Garrison n.d.) for the presence of bank swallow burrows.
- When a colony is found, map the location and count the number of burrows. Subdivide large colonies to increase the accuracy of the burrow counts by using rocks, plants, or other available cues on the cliff to visually divide the large area into smaller units.
- Estimate the number of active burrows based on entering and exiting birds.

Although outside the Project boundary, survey the large existing colony along Highway 30 near the pullout/reservoir overlook. This cliff appears to have some of the most stable substrate in the area and may serve as a more useful long term indicator of local bank swallow population trends than the more ephemeral banks along the reservoir.

Documentation: Photograph and map occupied territories using GPS or by marking locations on a USGS map. Record data on the attached form. Maintain records of occupied and unoccupied colonies over the license period.

References:

Garrison, B.A. n.d. Bank Swallow. *In*: California Partners in Flight Riparian Bird Conservation Plan, California Department of Fish and Game, Sacramento, CA http://www.prbo.org/calpif/htmldocs/species/riparian/bank_swallow_acct2.html (accessed December 14, 2009).

Bank Swallow Nest Survey Form

Observer(s): _____

Survey Date: _____

Description of Colony Location	New? Y/N	GPS Coordinates	No. of Burrows	Estimated No. of Active Burrows	Evidence of Disturbance/Other Observations

PEREGRINE FALCON HABITAT SURVEY AND OCCUPIED SITE MONITORING PROTOCOL

This protocol applies to the initial and periodic surveys of potentially suitable peregrine falcon nesting habitat along and immediately downstream of Boundary reservoir to determine occupancy, and to occupancy and nest success/productivity monitoring for sites determined to be occupied.

Potential Habitat: The following four cliff locations along the Project reservoir are thought to have apparently suitable nesting habitat for peregrine falcons (based on field studies and observations in 2007-2009) (pers. comm. G. Green, Wildlife Biologist, Tetra Tech, November 5, 2009):

- Washington Rock
- the cliffs along the "Narrows" in the Canyon Reach near the BLM campground
- Boundary tailrace, east cliff face
- Boundary tailrace, west cliff face

In addition, the cliffs along the reservoir 0.5-1 mile north of Washington Rock may represent potentially suitable peregrine falcon nesting habitat. This area will be examined in 2010 or 2011 and will be included in the initial survey if potentially suitable habitat is present.

Equipment: 8x or 10x power binoculars, spotting scope (minimum 15-45x power), tripod, portable chair.

Survey Conditions: Conduct surveys under weather conditions that are conducive to visibility and peregrine falcon activity (sunny or high overcast clouds, no precipitation, light wind).

Viewing Locations and Access: An important outcome of the initial survey of potentially suitable habitat will be to determine the best location(s) for viewing these areas. Suggestions for each site are as follows:

- Washington Rock – the Highway 30 bridge and/or SCL's house in Metaline Falls (vehicle access);
- The cliffs in the Narrows – Unknown (boat access);
- Boundary tailrace, east cliff face – west side of Boundary Dam and/or parking lot near power tunnel entrance (vehicle access);
- Boundary tailrace, west cliff face – east side of Boundary Dam and/or Vista House viewing platform (vehicle access);
- Cliffs along the reservoir 0.5-1 mile north of Washington Rock – to be determined if suitable habitat is present.

Describe and map viewing locations established during the initial habitat survey for use in periodic habitat surveys (every 6 years after the initial survey).

Survey Timing & Frequency: April 15-May 15 for occupancy and June 15-July 10 for nest success/productivity. Conduct all surveys in the first 5 hours after sunrise or the last 5 hours before sunset.

Conduct the initial survey of the 4 or 5 potentially suitable habitat sites within 1 year of license issuance (LY1) to determine occupancy. Resurvey these 4 or 5 sites every 6 years (LY7, 13, etc.; see chart below) to recheck for occupancy. After the initial survey, monitor occupied sites annually for 4 consecutive years (LY2-5) and every 2 years after each periodic survey (LY9, 11, 13, 15, etc.; see chart below).

Schedule for peregrine falcon habitat survey and occupied site monitoring[1]

Survey Type	License Year														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Habitat	X						X						X		
Occupancy	X	X	X	X	X		X		X		X		X		X
Productivity	X	X	X	X	X		X		X		X		X		X

Note:
1 Example only; license extends beyond LY15.

Occupancy Surveys: Occupancy is defined as an activity pattern indicating presence of a mated, territorial pair of potential breeders (Cade et al 1996). These activity patterns include observed presence of young, eggs, incubation behavior by an adult, two adults attending a nest, or an adult/subadult pair associated with a nest (Cade et al 1996). Occupancy survey methods are as follows:

- There is no minimum occupancy survey time; surveys can end as soon as there is clear evidence of a territorial pair.
- During the first survey of a site with potentially suitable habitat, spend up to 5 hours observing to determine occupancy.
- If occupancy is not determined during the first survey, conduct a second survey (up to 5 hours) within 2-3 weeks.
- If there is no evidence of a territorial pair after 2 surveys (10 hours of observation), classify the site as unoccupied.
- If the site is occupied, use the observations to estimate the best time to survey for nest success/productivity.

Nest Success/Productivity Monitoring: Monitor the site or sites identified as occupied to determine nest success/productivity. Nest success is defined as the presence of young in or near the nest ledge; productivity is the number of young. Methods for nest success/productivity monitoring surveys are as follows:

- There is no minimum productivity survey time; surveys can end as soon as it is certain that all nestlings or fledglings have been observed and counted.

- During the first survey of an occupied site, spend up to 5 hours observing to determine nest success and productivity.
- If nest success and productivity are not determined during the first survey, conduct a second survey (5 hours) within 2-3 weeks.
- If there is no evidence of young after 2 surveys (10 hours of observation), classify the site as failed.

Documentation: Photograph and map occupied territories by marking nest ledge locations on a USGS map, or if feasible, use GPS equipped with a laser range finder to document nest ledge location. Record data on the attached form using the appropriate codes (codes are from the WDFW Occupancy/Productivity Survey Form); productivity data include the number of young and developmental stage (downy, feathered, fledgling). Map any new territories observed incidentally during other field activities and add to the database. Include all new and existing known territories in future surveys.

References:

Cade, T.J., J.H. Enderson, and J. Linthicum. 1996. Guide to management of peregrine falcons at the eyrie. The Peregrine Fund. Boise, Idaho. 97 pp.

Peregrine Falcon Habitat Survey & Occupied Site Monitoring Form (LY1, LY 7, LY13, etc)

Observer(s): _____ **Year** _____

Potential Habitat Site	Occupancy Survey Date(s)	Occupancy Survey Times	Weather Conditions & Estimated Temp. (°F)	Evidence of Occupancy (codes)	Adults Observed		Young Observed			Occupancy Determination
					No. Present	Observed Behaviors (code)	No. Present	Life Stage	Observed Behaviors (code)	
Washington Rock										
The Narrows										
Tailrace East Cliff										
Tailrace West Cliff										
Other										

Weather Conditions:	S-Sunny; PC-Partially Cloudy; C-cloudy; NW-No wind; LW-Light wind; OLP-Occasional light precipitation
Evidence of Occupancy:	**1**-adult incubation behavior; **2-**adults attending nest; **3-**eggs; **4-**young; **5-**adult/subadult pair
Behavior:	**BG**-begging; **BR**-brooding; **CP**-copulation **CS**-courtship; **D**-Defense; **F**-Flying, **H-**Hunting; **I**-Incubating; **N**-Nest building; **P**-Perching; **PN**-Perched in nest; **T**-Tending young; **V**-vocalizing
Life Stage:	**E**-egg; **N/D-**Nesting/Downy; **NF**-Nesting/Feathered; **FL**-Fledgling; **J**-Juvenile
Occupancy Determination:	**Occupied, Unknown (single bird), Unoccupied**

Potential Habitat Site	Nest Ledge Location/Description	Notes/Observations
Washington Rock		
The Narrows		
Tailrace East Cliff		
Tailrace West Cliff		
Other		

Peregrine Falcon Occupied Site Monitoring Form-Productivity

Observer(s): _____ **Year** _____

Occupied Site	Productivity Survey Date(s)	Productivity Survey Time(s)	Weather Conditions & Estimated Temp. (°F)	Adults Observed		Young Observed			Nest Site/Productivity Determination
				No. Present	Observed Behaviors (code)	No. Present	Life Stage	Observed Behaviors (code)	

Weather Conditions:	S-Sunny; PC-Partially Cloudy; C-cloudy; NW-No wind; LW-Light wind; OLP-Occassional light precipitation
Behavior:	**BG**-begging; **BR**-brooding; **CP**-copulation **CS**-courtship; **D**-Defense; **F**-Flying, **H-**Hunting; **I**-Incubating; **N**-Nest building; **P**-Perching; **PN**-Perched in nest; **T**-Tending young; **V**-vocalizing
Life Stage:	**E**-egg; **N/D-**Nesting/Downy; **NF**-Nesting/Feathered; **FL**-Fledgling; **J**-Juvenile
Nest Site/Productivity Determination	Unsuccessful; Successful, # young known; Successful, # young estimated/unknown; Successful, adult obstructing view of young

Other Observations

Peregrine Falcon Occupied Site Monitoring Form-Occupancy (LY2-5, LY 9, 11, 15, 17 etc)

Observer(s): _____ **Year** _____

Occupied Site	Occupancy Survey Date(s)	Occupancy Survey Times	Weather Conditions & Estimated Temp. (°F)	Evidence of Occupancy (codes)	Adults Observed		Young Observed			Occupancy Determination
					No. Present	Observed Behaviors (code)	No. Present	Life Stage	Observed Behaviors (code)	

Weather Condtions:	S-Sunny; PC-Partially Cloudy; C-cloudy; NW-No wind; LW-Light wind; OLP-Occasional light precipitation
Evidence of Occupancy:	**1**-adult incubation behavior; **2-**adults attending nest; **3-**eggs; **4-**young; **5-**adult/subadult pair
Behavior:	**BG**-begging; **BR**-brooding; **CP**-copulation **CS**-courtship; **D**-Defense; **F**-Flying, **H-**Hunting; **I**-Incubating; **N**-Nest building; **P**-Perching; **PN**-Perched in nest; **T**-Tending young; **V**-vocalizing
Life Stage:	**E**-egg; **N/D-**Nesting/Downy; **NF**-Nesting/Feathered; **FL**-Fledgling; **J**-Juvenile
Occupancy Determination:	**Occupied, Unknown (single bird), Unoccupied**

Occupied Site	Nest Ledge Location/Description	Notes/Observations

Appendix 2: Boundary Resource Coordinating Committee and Work Groups (Section 8 of the Boundary Hydroelectric Project Relicensing Settlement Agreement)

8. Boundary Resource Coordinating Committee and Work Groups

8.1 Boundary Resource Coordinating Committee

8.1.1 Formation and Purpose

Within 90 days after issuance of the New License, the Licensee shall convene the BRCC to oversee on a broad scale the integrated and efficient implementation of the PM&E measures as specified in the Project Documents. The BRCC will: (1) be comprised of one representative from each signatory party; (2) meet annually to review a rolling three-year work plan that will include the preceding year, the current year, and the upcoming or "Out" year, consisting of a compilation of work plans of the individual Work Groups included in the annual reports (see Section 8.3.3.2); (3) ensure coordination among Work Groups; (4) review annual reports prepared by each Work Group; and (5) address issues affecting overall license implementation.

8.1.2 BRCC Membership

Each Party shall designate a primary representative to the BRCC at the initial meeting, or at any time thereafter with seven days notice. After the initial meeting, designation shall be by Notice to the Parties in accordance with Section 11.11 of the Settlement Agreement. Each member may name alternate representatives. A Party's failure to designate a representative shall not prevent the BRCC from convening or conducting its functions. Members of the BRCC may also serve on the Work Groups established in Section 8.2.1.

8.1.3 BRCC Initial Meeting

At the initial meeting, the BRCC shall establish:

8.1.3.1 Protocols for its annual meetings, including agenda development, timely distribution of materials, and location.

8.1.3.2 Common operating procedures for each Work Group (see Section 8.2), including agenda development (e.g., submission of agenda items), timely distribution of materials, location, and scheduling.

8.1.3.3 Procedures for each Work Group to review and approve the Licensee's implementation schedules that will describe on a month-to-month basis the specific actions that the Licensee plans to implement for the current year and actions planned for the following year (the "Out Year"). The schedule for the current year shall include a description of Project Documents, Work Products, or other materials that will be provided to the Work Groups. "Work Products" include the plans, study designs, reports, and facility designs required by the Project Documents to be filed with the Commission.

8.1.3.4 Protocols for documentation of PM&E measures implemented in the preceding year.

8.1.3.5 Each BRCC member shall also name its Work Group representatives.

8.1.4 BRCC Annual Meetings

BRCC annual meetings shall occur after all Work Group annual meetings and draft final annual reports (including the draft final rolling three-year work plan for that work group) but before the final annual work group reports are due to the Commission.

8.1.5 BRCC Meeting Minutes

The Licensee shall distribute minutes of the annual BRCC meetings, within 30 days of the meeting date, to BRCC members. Any comments, recommendations or questions raised during the annual meetings or in response to the meeting minutes shall be referred by the BRCC to the appropriate Work Group(s) for consideration and response.

8.1.6 BRCC Evaluation of Work Group Processes

The BRCC will evaluate the role, protocols and procedures of the Work Groups five years after issuance of the New License. The BRCC, with input from the Work Groups, will determine if protocols and procedures should remain the same, be modified or discontinued. The BRCC will re-evaluate Work Group roles and procedures periodically thereafter, throughout the term of the New License and any annual licenses.

8.1.7 Federal Advisory Committee Act

BRCC participation by state or federal agencies does not affect their responsibilities and authorities. Issues involving the exercise of agencies' specific authorities can be discussed, but decisions are not delegated to the BRCC. The BRCC does not provide consensus advice to any federal agency (consistent with the Federal Advisory Committee Act).

8.2 Work Groups

8.2.1 Work Group Formation and Purpose

The Licensee shall initially convene the Work Groups not later than 180 days after Commission issuance of the New License. Collaboration among the Parties on the specific requirements of the Project Documents will occur primarily through the Work Groups. At the initial meetings, each Work Group shall review the Project Documents, prioritize actions, and establish a list of tasks to be addressed over the current year and review and propose to the BRCC, as appropriate, revisions to the Work Group procedures established by the BRCC. The following Work Groups are hereby established with the voting members identified below:

8.2.1.1 FAWG Membership

The Licensee, USFWS, BIA, the Tribe, USFS, WDFW, Ecology, and SCA, or The Lands Council as an alternate participant, on behalf of the Hydropower Reform Coalition. The Licensee shall form a TAC when required by the FAMP. TAC members shall be chosen by the Licensee in consultation with and subject to the approval of the FAWG. TACs will be formed as

necessary and disbanded upon the completion of their technical advisory assignments from the Licensee and the FAWG.

8.2.1.2 TRWG Membership

The Licensee, USFWS, USFS, WDFW, Ecology, and SCA, or The Lands Council as an alternate participant, on behalf of the Hydropower Reform Coalition.

8.2.1.3 RRWG Membership

The Licensee, USFS and NPS.

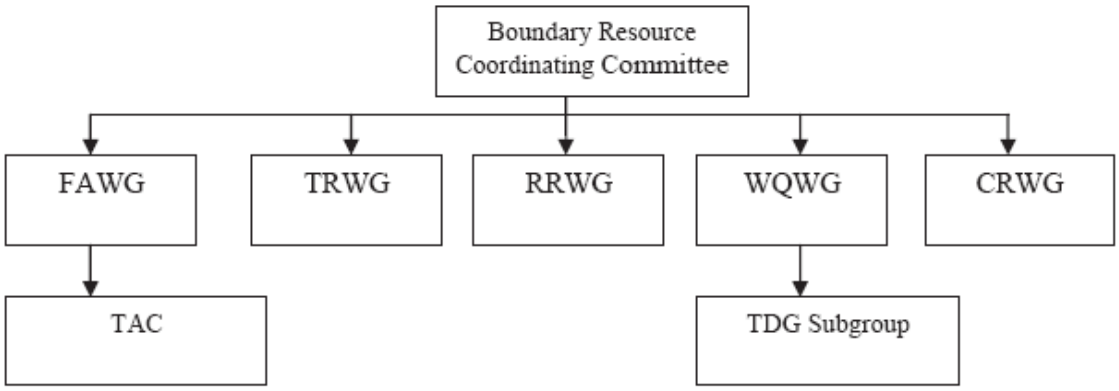
8.2.1.4 WQWG Membership

The Licensee, USFWS, BIA, the Tribe, USFS, WDFW, Ecology, and SCA, or The Lands Council as an alternate participant, on behalf of the Hydropower Reform Coalition. The WQWG will establish a TDG Subgroup, consisting of the Licensee, Ecology, WDFW, USFS and the Tribe to address progress on TDG.

8.2.1.5 CRWG Membership

The Licensee, BIA, the Tribe, and USFS. Washington Department of Archaeology & Historic Preservation and Bureau of Land Management will participate in the CRWG as defined by the Programmatic Agreement (Proposed License Article 7 in Settlement Exhibit 1).

Figure 1: Boundary Resource Coordinating Committee and Work Groups.



8.2.2 New Work Group Voting Members

Any Party may join any Work Group at any time during the term of the New License with 30 days Notice to the current members of the Work Group. Any organization with plan-level authority (as opposed to only permitting authority) over issues addressed by a Work Group that is not a Party to the Settlement Agreement may become a voting member of any Work Group with 30 days' Notice to the Parties if: (1) the organization becomes a signatory of this

Settlement Agreement; and (2) the organization agrees to abide by the protocols governing Work Group operations.

8.2.3 Work Group Non-Voting Members

Any other organization or a member of the public may volunteer to serve as a non-voting participant on a Work Group upon 30 days' Notice to the current members of the Work Group and with the approval of the voting members. To qualify, the organization or member of the public must: (1) identify an interest affected by the decisions of the Work Group; (2) agree to abide by consensus decisions of the voting members; and (3) agree to abide by the protocols governing Work Group operations. A non-voting participant has no decision-making authority within the Work Group (i.e., no voting rights or ability to elevate an issue to dispute resolution). Volunteer participants may be removed from a Work Group by consensus of the voting members with 30 days Notice.

8.2.4 Work Group Voting Member Representatives

Each Party shall designate primary representative(s) to the Work Groups at the initial meeting of the BRCC, or at any time thereafter with seven days notice. After the initial BRCC meeting, designation shall be by Notice to the Parties in accordance with Section 11.11 of the Settlement Agreement. Each member may name alternate representatives to the Work Groups. A Party's failure to designate a representative shall not prevent Work Groups from convening or conducting their functions.

8.2.5 Federal Advisory Committee Act

Work Group participation by state or federal agencies does not affect their statutory responsibilities and authorities. Issues involving the exercise of agencies' specific authorities can be discussed, but decisions are not delegated to the Work Groups. Work Groups do not provide consensus advice to any federal agency (consistent with the Federal Advisory Committee Act).

8.2.6 Work Group Coordination

Any Party may engage on any specific issue within a Work Group on a timely basis, regardless of whether that Party is a current member of the Work Group, and the Licensee shall treat all comments received from a Party under the same provisions that apply to Work Group members. All Work Groups will coordinate among one another if they identify issues through their deliberations that may be of interest to or affect another Work Group or Party.

8.2.7 Work Group Role

The Licensee shall consult with the Work Groups on all aspects of the Work Products. Work Groups will convene as needed to meet the consultation requirements of the Project Documents, but at least annually for the license term and any annual licenses (see Section 8.3.3).

8.2.8 Consensus Defined

Work Groups shall make decisions by consensus. Consensus is achieved when all voting members cast a supportive or neutral vote or have abstained from the decision. When any vote is taken at a meeting on a Work Product, the Licensee shall provide the results to and seek the vote of non-present members within three days. Work Group members not present must inform the Licensee and other Work Group members of their vote on the Work Product within 10 days after the meeting or they shall be deemed to have abstained from the decision.

8.2.9 Work Group Consultation Process

Where the Project Documents require consultation on a Work Product, the Licensee shall strive to, at a minimum, provide Work Group members with a draft Work Product for at least 30 days to review and comment (which the Licensee may reasonably extend upon request of a voting member if needed to facilitate consultation). At the conclusion of this review period, if needed, the Licensee shall convene at least one Work Group meeting to discuss the draft Work Product and attempt to reach consensus with Work Group members. If consensus is achieved, the Licensee shall file with the Commission the Work Product and documentation of all consultations with the Work Group, any concerns and responses thereto, and any other written comments provided to the Licensee. If the final Work Product has been modified in any substantive way by the Licensee in response to comments or otherwise, the Licensee shall provide a new final version to Work Group members 10 days before filing it with the Commission.

8.2.10 Elevation of Work Group Decisions to Dispute Resolution

If consensus is not achieved, any voting member may elevate the issue for dispute resolution as provided in Section 9. The voting member objecting to the Work Product must provide a rationale, supporting documentation, and a proposed resolution of the issue for review. This information shall be provided to the Licensee by the objecting member within 10 days of the Work Group meeting pursuant to the Notice provisions in Section 11.11 of the Settlement Agreement. The Licensee shall provide the information to voting members concurrent with its Notice of Issue Elevation.

8.2.11 Impact of Dispute Resolution and Agency Approval Process on FERC Filing Deadlines

If the dispute is not resolved prior to the date the Licensee is required to make a filing, the Licensee shall make the filing and shall describe to the Commission how the Licensee's filing accommodates any comments and recommendations of the Work Group members. If the Licensee's filing does not adopt a recommendation, the filing will include the Licensee's reasons based on Project-specific information. If any necessary agency approval has not been obtained, the Licensee also shall provide an explanation of why the approval was not obtained. The Licensee shall provide the Commission with a copy of any comments and recommendations provided by Work Group members during consultation. Work Group members may submit their own comments to the Commission.

8.2.12 Agency Approval

Prior to implementing a Work Product, the Licensee shall obtain any necessary Commission approval and any necessary agency approval. Where a Project Document identifies an agency with approval authority, the Licensee shall proceed in a manner consistent with the approval of that agency.

8.2.13 Agency Approval Process

When agency approval is required by the Project Documents, that approval must be provided in writing by the approving agency(s). The approving agency(s) will strive to ensure that written approvals are provided to the Licensee in advance of FERC filing deadlines. To facilitate this process, the Licensee shall provide all final Work Products requiring agency approval to the approving agency at least 30 days prior to the FERC filing deadline or as otherwise noted in the Project Documents, and shall identify whether consensus among Work Group voting members has been achieved. If consensus has not been achieved, the Licensee shall identify efforts taken to resolve the dispute and shall propose a resolution for consideration by the approving agency. Unless an extension would cause the Licensee to miss a FERC filing deadline, the Licensee shall, if requested by an agency with approval authority, grant a 30-day extension for completion of the agency approval process; provided, however, that in the event that granting such an extension delays the Licensee's ability to take action, the schedule for such action will be adjusted.

8.2.14 Agency Involvement in Work Groups

The position of other members does not override an agency's approval, which is an independent authority. The agency with such approval authority will convey its determination to the Licensee, the Work Group, and the Commission. Notwithstanding, agencies do not waive or relinquish in any respect any approval authorities under the Federal Power Act or other applicable law through their participation in the Work Group consensus process and any subsequent dispute resolution process. While the goal of the Work Groups is consensus decision-making where possible, nothing in the Settlement Agreement is intended to transfer legal authority or jurisdiction from any party to any other.

8.2.15 Work Group Member Withdrawal

Any member of any Work Group may withdraw from that Work Group upon Notice to the Licensee. The Licensee shall provide Notice to other Work Group members in the event of a member withdrawal. Any Party that withdraws from this Settlement Agreement shall be deemed to have withdrawn from all Work Groups.

8.3 Meeting Provisions

8.3.1 Work Group Chairs and Facilitators

The Licensee shall arrange, administer, and chair all meetings. Upon request of a majority of voting members in the Work Group(s), the Licensee shall provide a meeting facilitator(s).

Selection of a facilitator(s) will be done in consultation with and for approval by the affected Work Group voting members. The Licensee (either by its own submission or through the facilitator) shall provide no fewer than 10 days prior Notice of any meeting, unless otherwise agreed to by the members of the BRCC or Work Group(s), or required in order to meet a license deadline or an emergency circumstance.

8.3.2 Work Group Meeting Minutes

The Licensee (either by its own submission or through the facilitator) shall provide draft meeting minutes within 10 days after a meeting to members of the Work Group, who shall have 10 days to provide any comments. The Licensee shall distribute final meeting minutes within 30 days of the meeting. Meeting minutes will include Work Group action items, a summary of issues discussed, decisions reached, and member concerns. However, when agency or Work Group approvals of specific actions are required, as identified in the Project Documents, the Licensee shall follow procedures identified in Section 8.2.13. The Licensee shall provide Work Group meeting minutes and products to any Party upon request.

8.3.3 Work Group Annual Meeting

The Licensee shall convene annual Work Group meetings to review the previous year's actions and implementation status and to discuss planned activities for the current calendar year and the Out Year. The Licensee shall provide at least 30 days Notice for the annual meetings. An annual meeting may be cancelled by consensus of Work Group members or by the Licensee if no members of the Work Group respond to the Licensee's annual meeting Notice. However, to ensure continued communication and coordination, no more than two consecutive annual meetings of a Work Group may be cancelled.

8.3.3.1 Work Group Annual Reports

Prior to providing Notice for an annual Work Group meeting, the Licensee shall prepare a draft annual report. The Licensee shall provide the draft annual report to Work Group members no later than the time that it provides the 30-day Notice for the annual meeting. Work Group members shall submit any comments and recommendations on the annual report in writing to the Licensee at or before the annual meeting and may provide verbal comments at the meeting. If the Licensee makes substantive revisions to the annual report after the meeting, the Licensee shall circulate the revised report within 10 days of the meeting, and Work Group members may provide additional comments within 10 days of the Licensee's distribution of the revised report. Receipt of further comments does not trigger further circulation of drafts and solicitation of comments. The Licensee shall file with the Commission a final annual report and response to comments and recommendations on the draft report within 60 days after the annual meeting. A copy of the final report will be provided to the Work Group members.

8.3.3.2 Contents of Work Group Annual Reports

The Licensee shall include, at a minimum, the following information in the annual reports:

(a) A rolling, three-year work plan documenting the implementation of PM&E measures in the preceding year, a month by month description of the specific actions that the Licensee plans to implement for the current year and a summary of actions proposed in the Out Year. Specific elements of this plan include:

(i) A summary of the actions implemented during the previous calendar year; such as field testing and studies, compliance monitoring, design and construction, and other analyses.

(ii) Summaries of results of any monitoring or studies conducted during the previous year, conclusions that the Licensee draws from the results, and any proposed changes to the Project Documents based on the results.

(iii) The implementation schedule for the current year.

(iv) The implementation schedule for the Out Year.

(b) A discussion of any substantial differences between the actions required in the Project Documents and the actions that the Licensee implemented, including consultation comment letters, explanations and any necessary agency or Work Group approvals for any substantial differences.

(c) A discussion of any significant differences between the implementation schedule in the Project Documents and the schedule for the actions the Licensee plans to implement during the year, including an explanation for any significant differences.

(d) Documentation of consultation with the respective Work Groups and any required agency or Work Group approvals in the previous year.

(e) Identification of any issues or Project Document requirements that would benefit from coordination between Work Groups and discussion at the annual BRCC meeting.

8.3.4 Management Plan Review and Amendment

An amendment is any change to the text of a Management Plan. All amendments require FERC approval before they become effective.

8.3.4.1 Scheduled review

The Licensee in consultation with the Work Groups shall review the Management Plans and amend them if needed on the schedule established in each of the plans. The need for amending

the Management Plans will be discussed with the Work Group during the annual meeting in the year in which the review is scheduled to occur. If the Work Group determines an amendment to a Management Plan is not needed, this decision will be documented in the Rolling 3-Year Annual Report/Work Plan for the year in which the review is conducted.

The Licensee will compile a running list of potential changes to each management plan suggested by the Work Group. This list will be compiled from sources such as monitoring and be included in the Rolling 3-Year Annual Report/Work Plan for consideration during the next review/amendment cycle.

8.3.4.2 Unscheduled review

Amendments to Management Plans may be proposed based on changes in resource conditions resulting from unforeseen effects, from new or existing Project-related activities, or from natural events in the Project area. Amendments may also be warranted if monitoring or other observations indicate that resource objectives are not being met and/or it is determined that a specific PM&E measure is not providing the intended result. The proposed amended Management Plan will document the rationale for changes and the consultation process with the Work Group.

8.3.4.3 Amendment process

The Licensee will be responsible for preparing the draft and final proposed amended Management Plan, coordinating the review process and schedule with the Work Group, consulting with the Parties as set forth in Section 8.2.9, obtaining all necessary agency approvals as set forth in Section 8.2.13, and submitting the final proposed amended Management Plan to FERC. Failure of the approving agency to respond to a request for approval within 60 days shall be deemed to constitute approval.

8.3.5 Cost of Work Group Meetings

The Licensee shall bear all meeting room rental, materials, and similar costs associated with conducting BRCC and Work Group meetings. Each member or other participant will bear its own cost of attendance, unless otherwise agreed to by the Licensee.

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Appendix 3: TRMP Implementation Schedule

TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
	Administrative Measures										
Section 2	Annual meeting of the TRWG										
Section 2	Produce annual report and workplan										
Section 2	Review, and as necessary amendment, of TRMP										
Section 5.1	**Erosion Program**										
	Objective 1 - Erosion Control										
Task 1.1	Develop site specific plans for the 3 sites (coincident with RRMP schedule)										
Task 1.2	Implement measures at the 3 sites										
Task 1.3	Monitor the 3 sites for 3 years and then every 10 years										
	Objective 2 - Long-term erosion monitoring										
Task 2.1	Refine methods for surveying, documenting, and tracking erosion	see note below[1]									
Task 2.2	Monitor erosion (LY2, then every 10 years)										
Task 2.3	Conduct consultation with TRWG if erosion occurs at high value resource site	As needed									

gray - consultation/reporting/meetings green - assessments/studies/planning blue - implementation of enhancement/mgt. measures orange - monitoring

TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
Task 2.4	Track erosion at existing and new sites to determine need for additional mitigation (LY2, then every 10 years)										
Section 5.2	**Habitat Management, Enhancement and Protection Program**										
	Prior to conducting the habitat assessments described in this section, review and refine cover type maps. Implement beginning in LY2. Amend TRMP to include updated cover type maps.										
	Objective 1 - Motorized vehicle access control										
Task 1.1	Conduct consultation with USFS and install gate at FR 3165-200										
Task 1.2	Assess, develop and implement vehicle control measures at BWP										
Subtask 1.2.1	Assess short and long-term needs and options for closing specific roads										
Subtask 1.2.2	Implement road closure measures			long-term needs to be developed in coordination with Task 4.1							
Subtask 1.2.3	Develop and install signs for closed roads			long-term needs to be developed in coordination with Task 4.1							
Subtask 1.2.4	Monitor road closures										
Subtask 1.2.5	Develop and implement mechanism to address closure violations						As needed				

gray - consultation/reporting/meetings green - assessments/studies/planning blue - implementation of enhancement/mgt. measures orange - monitoring

TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
	Objective 2 - Wetland/Riparian habitat enhancement feasibility assessment										
Task 2.1	Conduct feasibility assessment (Tailrace East, Sullivan, BWP Addition)										
Task 2.2	If measures identified, develop and implement site-specific plans							Monitoring as per site-specific plans			
	Objective 3 - Riparian habitat management and enhancement										
Task 3.1	Identify and implement measures for Tailrace recreation area										
Subtask 3.1.1	Identify and implement measures to improve riparian habitat	see note below[1]									
Subtask 3.1.2	Monitor stream for Columbia spotted frogs and site for plant survival	baseline									
Task 3.2	Assess measures to increase deciduous habitat along Everett Creek. If desired, develop and implement plan			assessment	develop plan			Monitoring as per site-specific plans			
Task 3.3	Assess feasibility of reed canarygrass measures on BWP										
Subtask 3.3.1	Conduct literature review										
Subtask 3.3.2	If methods identified, develop and implement small scale pilot study							Monitoring as per site-specific plans			
Subtask 3.3.3	Review study results and determine broader application of study results	To be determined, as necessary									
Task 3.4	Develop and implement public access plan for BWP					Monitoring as per plan					

gray - consultation/reporting/meetings green - assessments/studies/planning blue - implementation of enhancement/mgt. measures orange - monitoring

TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
	Objective 4 - Upland habitat management										
Task 4.1	Conduct inventory and assessment for BWP, BWP Addition, Everett Creek, and Tailrace East										
Task 4.2	Conduct assessment for dry meadow habitat on Tailrace East parcel										
Task 4.3	Develop and implement plans										
Task 4.4	Monitor results of management measures							Monitoring as per site-specific plans			
	Objective 5 - Island and shoreline access control										
Task 5.1	Install signs prohibiting access at Metaline and Rat Islands	see note below[1]									
Task 5.2	Install signs prohibiting access at other locations	see note below[1]									
Task 5.3	Monitor sites where terrestrial impacts were observed	baseline									
	Objective 6 - Future measures for Project Habitat Lands to be acquired										
Task 6.1	Identify conditions and management considerations/constraints for each parcel	TBD when parcels are acquired									
Task 6.2	Determine need for management, enhancement and protection measures	TBD when parcels are acquired									

gray - consultation/reporting/meetings green - assessments/studies/planning blue - implementation of enhancement/mgt. measures orange - monitoring

TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
	Objective 7 - Adaptive Management - Evaluate measures conducted on PHLs to determine if objectives are being met										
Task 7.1	Develop tools to assess effects of management measures	Concurrent with development and implementation of enhancement and management plans									
Task 7.2	Analyze data generated from monitoring tasks										
Task 7.3	Determine need to change programs to meet resource goals										
Task 7.4	Document and track changes to resource programs										
Section 5.3	**Integrated Weed Management Program**										
	Objective 1 - Initial and periodic inventories										
Task 1.1	Conduct initial weed inventory										
Subtask 1.1.1	Conduct consultation with Weed Board to update list	see note below[1]									
Subtask 1.1.2	Map new infestations										
Subtask 1.1.3	Resolve taxonomy of sowthistle										
Task 1.2	Consult with NWCB to update list										
Task 1.3	Conduct inventories every 3 years										
Task 1.4	Monitor infestations not designated for treatment										

gray - consultation/reporting/meetings green - assessments/studies/planning blue - implementation of enhancement/mgt. measures orange - monitoring

TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
Task 1.5	Update database and maps										
	Objective 2 - Prevention										
Task 2.1	Integrate weed mgt into Environmental Awareness Program										
Subtask 2.1.1	Meet annually w/Project staff										
Subtask 2.1.2	Provide info to new staff										
Task 2.2	Implement BMPs for construction and maintenance activities	As needed									
Task 2.3	Monitor effectiveness of BMPs										
Subtask 2.3.1	Check active construction sites for effectiveness	As needed									
Subtask 2.3.2	Visit completed construction sites for effectiveness monitoring	As needed									
Subtask 2.3.3	Summarize progress and results in Rolling 3-year report										
	Objective 3 - Control weeds and monitor for effectiveness										
Task 3.1	Develop treatment plans for each target infestation										
Subtask 3.1.1	Work with NWCB to develop treatment plans on SCL-owned lands										
Subtask 3.1.2	Work with NWCB to develop treatment plans for federal lands										

gray - consultation/reporting/meetings green - assessments/studies/planning blue - implementation of enhancement/mgt. measures orange - monitoring

TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
Subtask 3.1.3	Document treatment plans										
Subtask 3.1.4	Revise and update treatment plans			As needed (concurrent with Task 3.4)							
Task 3.2	Treat Project-related infestations annually on SCL lands										
Task 3.3	Coordinate with USFS and BLM on weed control on federal lands (depending on outcome, control measures may be required)										
Task 3.4	Monitor treated infestations annually										
Section 5.4	**RTE Plant Species Program**										
	Objective 1 - Surveys of locally abundant species										
Task 1.1	Select sites to be surveyed and sample 25% of subpopulations	see note below[1]									
Task 1.2	For each survey, collect specified data										
Task 1.3	Evaluate changes in subpopulations and determine need for other mgt actions										
Task 1.4	Add newly-listed species to surveys, as designated by the TRWG										

gray - consultation/reporting/meetings green - assessments/studies/planning blue - implementation of enhancement/mgt. measures orange - monitoring

TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
	Objective 2 - Censuses of species with limited distribution										
Task 2.1	Collect specified data for designated subpopulations	see note below[1]									
Task 2.2	Evaluate changes in subpopulations										
Task 2.3	Add newly-listed species to surveys, as designated by the TRWG										
	Objective 3 - Extensive RTE plant surveys										
Task 3.1	Determine extent of post-catastrophe survey	As needed									
Task 3.2	Use methods similar to relicensing-study methods	As needed									
Task 3.3	Identify restoration measures for affected populations	As needed									
	Objective 4 - Update and coordination										
Task 4.1	Update GIS database coincident with each survey and census										
Task 4.2	Obtain updated RTE plant data from agencies										
	Objective 5 - Coordination with RRMP										
Task 5.1	Coordinate to ensure RTE plants are protected										

gray - consultation/reporting/meetings green - assessments/studies/planning blue - implementation of enhancement/mgt. measures orange - monitoring

TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
Task 5.2	Monitor RTE plant populations at recreation sites (to coincide with surveys)										
Section 5.5	**Wildlife Program**										
	Objective 1 - Bald eagle nest monitoring										
Task 1.1	Conduct 2 surveys annually										
Subtask 1.1.1	Record specified data										
Subtask 1.1.2	Determine productivity										
Subtask 1.1.3	Conduct helicopter survey every 5 years				develop protocol						
Subtask 1.1.4	Document new sites within Project boundary										
Task 1.2	Summarize data in annual report										
	Objective 2 - Bald eagle nest management plans										
Task 2.1	Prepare management plans for nests on lands within the Project boundary			Update as needed							
Task 2.2	Implement protection measures for nests on SCL lands and coordinate re: nests on federal lands										

gray - consultation/reporting/meetings green - assessments/studies/planning blue - implementation of enhancement/mgt. measures orange - monitoring

TRMP Reference	Activity	Schedule									
		LY 1	LY 2	LY 3	LY 4	LY 5	LY 6	LY 7	LY 8	LY 9	LY 10
	Objective 3 - Other wildlife monitoring										
Task 3.1	Conduct one bank swallow nest survey annually										
Task 3.2	Conduct baseline occupancy survey for peregrine falcons										
Subtask 3.2.1	Conduct initial survey to determine occupancy										
Subtask 3.2.2	For occupied sites, conduct nest success/productivity monitoring										
Task 3.3	Monitor occupied peregrine eyries annually for 4 consecutive years										
Task 3.4	Resurvey unoccupied suitable habitat for occupancy every 6 years										
Task 3.5	Report results in rolling 3 year plan										
	Objective 4 - Wildlife database and records										
Task 4.1	Develop and maintain database for tracking wildlife observations										
Subtask 4.1.1	Develop list of species to track										
Subtask 4.1.2	Record species observed										
Subtask 4.1.3	Provide Project staff with forms for recording observations and include observations in database										
Subtask 4.1.4	Summarize observations in annual report										

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TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
Task 4.2	Update RTE species list from agency records										
Task 4.3	Update protection plans if changes in use of area by RTE species	As needed									
Task 4.4	Update plans if new species listed or use patterns change	As needed									
Section 5.6	**Shoreline Management Program**										
	Objective 1 - Define and map shoreline designations, allowed uses and required approvals										
Task 1.1	Develop shoreline designations and apply to Project lands and waters										
Task 1.2	Identify actions that require FERC notice or approval										
	Objective 2 - Develop and implement guidelines for private facilities										
Task 2.1	Identify current and future allowed types of facilities										
Task 2.2	Develop and implement public awareness program										
Task 2.3	Monitor compliance with guidelines and requirements										
Task 2.4	If warranted, develop permit system	As needed									

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TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
	Objective 3 - Coordinate RRMP actions at shoreline sites with TRMP										
Task 3.1	Coordinate recreation programs with TRMP Shoreline Mgt Program										
Task 3.2	Coordinate review of shoreline permits and agency approvals										
	Objective 4 - Periodically remove shoreline debris										
Task 4.1	Develop schedule and manage shoreline debris										
	Objective 5 - Develop and implement public safety and education program										
Task 5.1	Assess needs and develop plan to address safety, interpretation and education needs at Project		See RRMP								
Task 5.2	Monitor public safety and education through RRMP		See RRMP								
Section 6.0	**Management of Project-related Activities and Facilities**										
Section 6.1	***Environmental Awareness Program***										
	Objective 1 - Create training program and schedule to educate Project staff on sensitive environmental resources										
	Objective 2 - Incorporate requirements into contracts			As needed							

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TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
	Objective 3 - Review environmental materials and revise as necessary										
Section 6.1.1	***Maps***										
	Produce maps that indicate locations of sensitive environmental resources										
	Update maps										
Section 6.1.2	***Training Presentations***										
	Conduct training sessions for employees										
Section 6.1.3	***Informational Materials***										
	Develop guide that summarizes key material										
	Update guide										
Section 6.2	***Preconstruction Planning Program***										
	Objective 1 - Identify and conduct preconstruction surveys; obtain permits; implement standards and BMPs	As needed									

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TRMP Reference	Activity	Schedule									
		LY 1	**LY 2**	**LY 3**	**LY 4**	**LY 5**	**LY 6**	**LY 7**	**LY 8**	**LY 9**	**LY 10**
	Objective 2 - Develop methods and schedule for monitoring compliance	As needed									
Section 6.3	***Best Management Practices***										
	Objective 1 - Create training materials for selecting and implementing BMPs										
	Objective 2 - Develop methods and schedule for monitoring compliance										
	Update materials										

Note:

1 Protocols/methodologies for these measures will be developed in collaboration with relicensing participants in 2010 and 2011 and will be submitted to FERC within 180 days of license issuance. At the time of filing, a request will be made for FERC to amend the TRMP to incorporate these protocols/methodologies. In the event approval by FERC is not issued in a timeframe that allows for implementation per the schedule defined in the protocols, implementation will occur in the subsequent year.

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