Revised Study Plan
Boundary Hydroelectric Project (FERC No. 2144)

Study No. 23
Aesthetic/Visual Resource Study

Seattle City Light

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Study No. 23 – Aesthetic/Visual Resource Study

1.0 INTRODUCTION

Continuing Boundary Project (Project) operations and potential proposed changes to the Project may potentially affect sensitive aesthetic/visual resources in the Project area and the aesthetic/visual experience of visitors and residents using Project lands and waters and adjoining lands. For example, shoreline erosion (to the degree that it may be related to Project operations) may potentially impact the visual character of the Project area in some locations.

The Aesthetic/Visual Resource Study is designed to identify culturally and visually sensitive landscapes within and adjacent to the Project boundary, and to identify ongoing Project operational effects or proposed changes to the Project that have the potential to affect sensitive landscapes. If significant Project-related effects are identified, potential alternatives for minimizing these effects (and the general feasibility of these potential alternatives) will be identified.

Relicensing studies proposed by Seattle City Light (SCL) that are related to aesthetic/visual resources but described under a different resource area (as indicated in the summary Table 4.0-1 presented in Attachment 1 of this RSP) include:

- Erosion Study (see Attachment 2, Study No. 1 of this RSP)
- Recreation Surveys (see Study No. 21)

Additionally, studies of noxious weeds conducted in 2005 and 2006 will also be reviewed for the relicensing analysis.

2.0 STUDY PLAN ELEMENTS

2.1. Nexus between Project Operations and Effects on Resources

Ongoing Project-related operational effects and potential changes to the Project in the future may affect the visual character and visual quality of the surrounding landscape. Project facilities, including Boundary Dam, the Machine Hall, the Tailrace Maintenance Area, and 0.5-miles of transmission lines, are concentrated at the northern end of the Project in a very remote area. These facilities are not visible from the Scenic Byway (SR 31) or from County Road 2975 leading to Gardner Caves because of their remote location. Stationary viewpoints from which the public can view Project facilities are from adjacent SCL-managed recreation sites, including the Forebay Recreation Area, Tailrace Recreation Area, and Vista House. The Vista House was sited to provide a clear viewpoint of the dam during its construction, and the Tailrace Recreation Area was built to accommodate public tours of the Visitor's Gallery within the Machine Hall. These facilities are considered attractions by visitors and are offered as points of interest along the Scenic Byway in byway-related literature. Project facilities may also be seen from non-stationary viewpoints including the Project access road leading to the Tailrace Maintenance Area/Recreation Area, and from boats in the forebay of Boundary Reservoir. Views afforded by boat from the Boundary Reservoir include the top of Boundary Dam, the floating log boom

barrier in the forebay, the Forebay Recreation Area, and the Vista House and adjacent overlook above the dam.

Shoreline erosion has been observed on and adjacent to the reservoir in all three reaches (Upper [south], Canyon, and Forebay [north]). Natural erosion occurs along all rivers and reservoir shorelines; the extent to which shoreline erosion may be induced by the Project is not currently known and will be further explored in the Erosion Study (as described in Study No. 1). Erosion sites, and potential solutions to control Project-related erosion, might adversely affect the visual experience of some visitors, primarily boaters on the reservoir.

Other potential Project-related impacts to visual resources in the Project vicinity may include dispersed shoreline recreation sites on the reservoir, road cuts along Project-related roads, and the presence of invasive weeds in areas affected by Project operations.

2.2. Agency Resource Management Goals

Land and aesthetic/visual management within and adjacent to the Project boundary is under the jurisdiction of a number of entities, including the USFS, the BLM, Pend Oreille County, and the Towns of Metaline and Metaline Falls. Of these entities, Pend Oreille County oversees management of privately owned shorelines and adjacent land within the Project boundary by means of the County's Shoreline Master Program, Comprehensive Plan, and Critical Areas Ordinance. In addition to the County's policies, the USFS and the BLM adhere to land and resource management policies defined in their respective Forest Plan and Resource Management Plan, as applicable. The Towns of Metaline and Metaline Falls also play a role in land management within their town limits, which extend up to the reservoir shoreline; however, neither Town's comprehensive plans include aesthetic/visual resource management directives at this time.

USFS

A portion of the Project area is managed by the Colville National Forest (CNF). The USFS manages the aesthetic/visual quality of lands and waters under its jurisdiction using the USFS' Scenery Management System (SMS) (USFS 1995) as a methodology and tool for inventory and analysis. SMS evolved from and replaces the USFS's previous methodology called the Visual Management System (VMS), resulting in several terms that were modified as noted below. SMS methodology differs from VMS in that it increases the role of constituents throughout the inventory and planning process. SMS-related components (in whole or in part) are used by the USFS to identify, achieve, and sustain a desired landscape character and scenic integrity on USFS-managed lands and waters.

SMS planning variables are defined for specific management areas on USFS-managed lands based on current conditions and/or desired management direction. Aesthetic/visual quality or scenic integrity, an SMS variable, is being assessed during the Forest Plan revision process currently underway. Scenic Integrity Levels (Very High to Unacceptably Low) are assigned to the landscape as a frame of reference for measuring later achievement of the scenic objectives prescribed for specific management areas. Assignment of scenic integrity levels considers the valued attributes of the existing landscape character being viewed, and includes not only natural and natural-appearing attributes, but also those direct human alterations that have become

accepted over time as positive landscape character attributes. Scenic integrity levels include (USFS 1995):

- Very High (Unaltered Landscape)
- High (Appears as Unaltered Landscape)
- Moderate (Slightly Altered Landscape)
- Low (Moderately Altered Landscape)
- Very Low (Heavily Altered Landscape)
- Unacceptably Low (Extremely Altered Landscape)

USFS-managed lands in the Project vicinity are currently categorized as Moderate (Slightly Altered Landscape) (USFS 2005a).

Visual Quality Objectives (VQOs) in the current Colville National Forest Plan (CNFP) are Retention or Partial Retention of natural landscape qualities (USFS 1988). In areas where the designated objective is Retention, management activities should not be visually evident. In areas where the designated objective is Partial Retention, "management activities remain visually subordinate to the characteristic landscape." In both cases, the foreground viewshed should be perceived as natural appearing.

SMS methodology also categorizes the USFS-managed landscape into three Concern Levels: 1 (High), 2 (Moderate), and 3 (Low). Concern levels (formerly called Sensitivity Levels in VMS methodology) represent the degree of scenery importance for specific viewing locations such as communities, recreation areas, roads, and trails. Identified Concern Level designations can be validated in SMS methodology through the constituent analysis component.

After the current CNFP was completed in 1988, a letter from the CNF Forest Supervisor (USFS 1992) was distributed to all Forest Districts, providing additional direction for making visual quality consistency determinations related to proposed actions and guidance on the appropriate VQOs to be used by CNF Districts. This 1992 letter lists the most sensitive visual quality areas/corridors in the CNF as Concern Levels 1 and 2 (terminology revised from previous Sensitivity Levels). Concern Level 1 areas at or near the Project include:

- Boundary Dam Reservoir Road
- Boundary Dam Vista House Road
- Pend Oreille River corridor
- Crescent Lake area
- SR 31 corridor (Scenic Byway)
- County Road 2975 (road to Gardner Caves)

In 1992, the Sullivan Lake Ranger District (formerly Republic Ranger District) recommended that the CNF reduce the rating of County Road 2975 leading to Gardner Caves and Boundary Dam Reservoir Road to Concern Level 2; however, these rating changes were not made at that time for consistency reasons. Under the current CNFP revision planning effort, these ratings will

again be reassessed. The Project road leading down to the Tailrace Area may be dropped altogether due to security restrictions now in place that limit public access to the Tailrace Area (J. Bodie, CNF Landscape Architect, personal communication, August 2006).

In addition to draft scenery management goals being prepared by the USFS for the CNFP revision, other aesthetic/visual resource landscape planning factors are also being developed. Interrelated landscape planning factors being developed at this time include Valued Landscape Character descriptions, Landscape Character Goals, Niche Area descriptions (USFS 2005b), and Scenic Integrity Objectives (Very High to Unacceptably Low). Several Niche Areas were developed by the USFS to help guide recreation site types and appropriate levels of development, including aesthetic/visual characteristics, in the CNF and adjacent areas. The Project area falls within two Niche Areas including the International Byways Niche and the Remote Access Niche (in a portion of the Forebay and Tailrace areas only). These Niche Areas are described by the USFS as follows:

- *International Byway Niche* — "Major travel routes networking Canada and the U.S. communities, multitude of scenic byway designations, six International gateways all help provide transportation and economic connection between communities and countries. Driving for pleasure, scenery and wildlife viewing and interpretation, water-related, highly developed campgrounds and day use facilities (including ski area) are located adjacent to the byways and help support international and regional touring events (motorized and non-motorized)."
- *Remote Access Niche* — "Wettest climate on the Colville; steep and dramatic mountainous country with sub-alpine Wilderness provides extensive views in all directions. Rare animal species habitat provides wildlife viewing, forest product gathering, and snowmobiling; while motorized access to non-motorized back country provides an opportunity for solitude."

Niche Area descriptions are being integrated into the CNF planning narratives of Valued Landscape Character. Valued Landscape Character descriptions still need to be further developed by the USFS to include a listing of the positive attributes within each area. This will be accomplished through constituent analysis and content analysis of existing information.

North Pend Oreille Scenic Byway / International Selkirk Loop

The North Pend Oreille Scenic Byway passes through the Project vicinity on SR 31 from its junction with SR 20 to the U.S.-Canada border (approximately 27 miles). This scenic byway is also part of the larger International Selkirk Loop. The designation of these routes as scenic byways acknowledges and provides for the continued protection of the spectacular scenic quality of the Project vicinity. Seven sites have been proposed as components of the North Pend Oreille Scenic Byway (Eastern Washington University, 1999). Five of the proposed sites are in, adjacent to, or provide views of the Project vicinity and its scenic attractions. These sites include Box Canyon Overlook, Eagle's Nest View Site, Sweet Creek Falls Rest Stop, Metaline Falls Overlook Pocket Park, and Crescent Lake. The Box Canyon Overlook, Crescent Lake, and Sweet Creek Falls Rest Stop are existing sites. An interpretive sign has been installed at Eagle's Nest View Site. Metaline Falls Overlook Pocket Park (parcel adjacent to the SR 31 Bridge) has not been constructed to date. A viewpoint/highway pull off with views of Abercrombie/Hooknose Mountain is also planned in the vicinity.

Local communities, stakeholders, and land management agencies cooperated on the development and ongoing implementation of the corridor management plan (under the direction of a citizen's advisory board) for the North Pend Oreille Scenic Byway. The vision of the corridor management plan (WDOT 2003) is as follows:

> "The North Pend Oreille Scenic Byway provides visitors with an opportunity to discover and interpret the legacy that local pioneers have left for modern-day residents while preserving the all-important life styles of those residents. Mining, logging, and the production of hydroelectric power represent the historic and modern-day economic base for this area. The Scenic Byway offers access to one of the more active artist and performing arts communities in the Pacific Northwest. Those who follow the Byway along the Pend Oreille River are greeted by vistas of snow-capped mountains, rural villages, and viewing sites for wildlife, cultural legacy interpretive sites, and all back-dropped by a unique natural environment. This Byway is a scenic highway connecting Washington, British Columbia, and Idaho."

The corridor management plan outlines a set of goals and objectives that cover transportation and land use, economic development and tourism, heritage resources, and plan involvement and coordination. These goals include:

- Travel safety for visitors, local residents, and industry.
- Scenic Byway improvements that complement existing natural and developed environments and support land uses and activities desired by the local community.
- Expanded opportunities for economic development and tourism that are sensitive to the needs and values of the local community.
- Increased awareness and appreciation of heritage resources by visitors and community residents.
- Protection and enhancement of all heritage resources.
- Community-based planning process that promotes a high level of community involvement and ownership in plan development and supports collaboration in plan implementation.

The corridor management plan is not a regulatory document; however, it is intended to be a reference document that entities (including local communities, private land owners, WDOT, Pend Oreille County, and the USFS, among others) may use to guide stewardship activities along the scenic byway corridor.

2.3. Study Goals and Objectives

The goals of the Aesthetics/Visual Resource Study are to assess the aesthetic/visual resources in the Project vicinity and to identify potential effects on those resources from Project operations and proposed changes to the Project. Specific objectives of the study are as follows:

- Describe the visual characteristics of the Project and its surrounding landscape.

- Identify visually sensitive areas within Project lands and waters and adjoining lands.
- Identify and map key viewpoints and other locations that have the potential to provide enhanced viewing opportunities of the Project area by the public.
- Assess ongoing Project operations and potential Project modifications for consistency with the scenic landscape goals and policies in the new CNFP when it is finalized.
- Identify potential adverse effects of Project operations and proposed changes to the Project on visually sensitive areas.
- Describe the general feasibility of potential options and enhancement opportunities to mitigate potential adverse Project operational effects or proposed changes to the Project, where appropriate.

2.4. Need for Study

Summary of Existing Information

In general, the Project is located within a scenic reach of the Pend Oreille River with limited opportunities for public access and viewpoints; viewing opportunities are limited by the steep topography, forest vegetation, and land ownership patterns. The Project is surrounded by the Chewelah Mountains to the west and the Selkirk Mountains to the east. The Project vicinity is generally characterized by forested hills and mountains, rock outcrops and high cliffs, and some rural development along the SR 31 corridor, especially in and around the towns of Metaline and Metaline Falls (Cassidy 1997). SR 31 is a designated national and state scenic byway (North Pend Oreille Scenic Byway), as well as a designated international scenic byway (the International Selkirk Loop is a designated All-American Road). The Project vicinity has multiple scenic attractions, including Boundary Dam and Machine Hall/Visitor's Gallery, Boundary Reservoir, the Pend Oreille River canyon occupied by the reservoir, Peewee Falls, and the Selkirk Mountains, among others. The primary modifications that have been made to the Project area's scenic character include development such as shoreline recreation sites, towns of Metaline and Metaline Falls, SR 31 bridge, mining-related buildings and mine tailing disposal areas downstream of Metaline Falls, Project hydroelectric facilities, and non-Project regional electric transmission and distribution lines, among others.

The Pend Oreille River in the Project vicinity flows through a valley of varying width and steepness. Much of the portion of the Project from Boundary Dam upstream (south) to Metaline Falls is located in a relatively narrow, deep gorge section of the river canyon. By contrast, the portion of the reservoir from Metaline Falls upstream (south) to the Box Canyon Dam tailrace is located in a wider, more open valley.

Timber harvesting, along with mining, has historically been one of the primary extractive industries in the Project region. Logging in the Project vicinity has resulted in large forested areas of mixed regeneration (conifer and deciduous species), directly influencing the aesthetic/visual character of the area. While logging has shaped the vegetation patterns, the landscape is typical of second-growth landscapes throughout the region. Some of the landscape seen by the general public in the Project region is that of a working forest, with visibly distinct harvest units of varying ages. However, logging (both current and past) is less evident around

Boundary Reservoir, as well as on USFS-managed land, especially in the Salmo-Priest Wilderness Area to the east of the Project.

Apart from the reservoir, the Project's hydroelectric facilities are not visible from many locations within the Project vicinity. These facilities can be seen from near the dam and from the northernmost part of the reservoir by boat.

Formed by Boundary Dam, Boundary Reservoir extends approximately 17.5 miles upstream to the base of the Box Canyon Dam. At full pool (1,990 feet NGVD 29 [1,994 feet NAVD 88]), the reservoir has 43,000 acre-feet of storage in the top 40 feet and a total surface area of approximately 1,636 acres. The maximum allowable reservoir drawdown is 40 feet. Upstream from Metaline Falls, seasonal high flows can cause the reservoir/river to rise above the 1,990-foot NGVD 29 (1,994 feet NAVD 88) elevation. See section 1.3.5 of the Proposed Study Plan (PSP) (SCL 2006b) for a description of Project operations.

The daily summer and winter reservoir fluctuation is visible at certain locations on the reservoir. Exposed shoreline areas and sandbars become more visible at lower reservoir elevations. Considering the limited public access and viewpoint opportunities in the Project vicinity, features that become visible during lower reservoir elevations are likely most visible to visitors on the reservoir (in boats) and at land-based viewpoints along the upper part of the reservoir from Box Canyon Dam to the SR 31 bridge at Metaline Falls.

The upper portion of the reservoir (from Box Canyon Dam to the SR 31 Bridge at Metaline Falls) can be viewed from several locations along SR 31 (North Pend Oreille Scenic Byway), which extends along the western shoreline of the reservoir to the SR 31 Bridge. The lower part of the reservoir (from the SR 31 Bridge to Boundary Dam) is barely visible from a few publicly accessible viewpoints because of the steep topography along the reservoir shoreline and forested hilltops between the reservoir and SR 31 (to the east) and County Road 2975 (to the west).

From the reservoir surface and shoreline, the upper (southern) part of the reservoir offers broad views of a primarily rural setting including homes and businesses in and around the towns of Metaline and Metaline Falls, portions of old and new mining activities, and views of managed hillsides. The shoreline is generally fragmented, with a mix of natural and developed/managed features. Public access along the upper part of the reservoir is limited by land ownership patterns and steep shorelines, though the reservoir is visible from SR 31, which travels along the western shoreline of the upper reservoir.

The lower (northern) part of the reservoir provides a more pristine and natural landscape compared to the upper part. The scenic features of the lower part are dominated by steep canyon walls with spectacular rock formations, several tributaries, waterfalls, and a distinctly semi-primitive setting. The lower part ends at the Boundary Dam forebay, a wider section of the reservoir that provides more expansive vistas of the surrounding mountains. Also visible from the forebay are the Project facilities, including the crest of Boundary Dam, electrical transmission lines (0.5 mile) and towers, and the Forebay Recreation Area. Peewee Falls, a 200-foot waterfall along the western shoreline of the reservoir, can also be viewed by boat from the forebay. Several other smaller waterfalls dot the canyon landscape and are visible by boat. Public access is limited along the lower part of the reservoir by very steep, rocky shorelines. As a result, much of the lower part of the reservoir can only be viewed by boat.

In addition to the Boundary Reservoir, the following facilities and sites are visible and/or provide viewing opportunities in the Project area:

- *Boundary Dam* — completed in 1967, Boundary Dam is a double-curvature, thin-arch type concrete dam. It is 340 feet high, 32 feet thick at its base, 8 feet thick near its top, and 740 feet long at its crest. There are two large, radial-gated spillways at each end of the dam and seven sluice gates located 200 feet below the crest of the dam. The grey, concrete dam and spillways can be viewed from the Vista House and Tailrace Recreation Area. The crest of the dam is also visible from the Forebay Recreation Site, as well as from the reservoir by boat. The dam is not visible from any public travel routes.
- *Tailrace Maintenance Buildings and Storage Yard* — several Project-related maintenance buildings, storage yards, and access roads are located below Boundary Dam, north of the Tailrace Recreation Area. Two large metal maintenance buildings, one of which is light green and the other white, are the visually dominant structures in this area. These structures, as well as other large maintenance/storage yards and access roads, are only visible from the Vista House and from the access road leading to the Tailrace Recreation Area.
- *Transmission Lines* — transmission lines run from the Project powerhouse to a switching station located just west of the Project area. The transmission lines exit the underground powerhouse through a series of six transformer bays located along the rock cliff to the west of the dam. The transmission lines run up the cliff to a set of metal support towers ("pickle forks"), across the access road to the Forebay Recreation Site, and uphill to a Switching Station near County Road 2975. The Project's transmission lines from the Machine Hall to the Switching Station are approximately 0.5 mile long. The other power lines in the vicinity of the Project are either Bonneville Power Administration (BPA) transmission lines or Pend Oreille County Public Utility District (PUD) distribution lines. The Switching Station at the termination of the Project transmission lines is a BPA facility.

  The Project transmission lines and support towers are visible from the Vista House and Forebay Recreation Area, as well as from the public access road to the dam area. The transformer bays and exiting transmission lines are visible from the Vista House and Tailrace Recreation Area.
- *Machine Hall Entrance* — the Machine Hall, which houses the Project turbines, is located entirely underground, with only its two access tunnels visible from publicly accessible viewpoints. The large, grey, concrete access tunnels to the Machine Hall are located at the Tailrace Recreation Area and are visible from both the Tailrace Recreation Area and the Vista House.
- *Forebay Recreation Area* — this site is located on the western shoreline of Boundary Reservoir immediately upstream of the Project dam. The facilities provided at this site include a boat launch, picnic area, campground, and viewpoint. The site affords scenic views of the northern section of the reservoir and its steep, tree-lined shoreline, the crest of the dam and white, floating log boom, the Vista House, a rocky hill that contains the Machine Hall, and the Project's transmission lines and "pickle fork" towers, as well as the forested hills and mountains that surround the Project area.

- *Tailrace Recreation Area* — this site is located immediately downstream of Boundary Dam on the western bank of the Pend Oreille River. The site provides day use facilities (covered picnic tables, parking, etc.) and also acts as the meeting place for public tours of the Project. By looking south, visitors to this site can view the dam, tailrace, transformer bays, transmission lines and towers, and entrances to the Machine Hall. Directly across from the Tailrace Recreation Area, the river's steep eastern bank and promontory with the Vista House can be observed. To the north, with views extending into Canada, visitors can see the Pend Oreille River and the forested hills and mountains that typify the Project vicinity and adjacent area in Canada, and BPA transmission lines.
- *Vista House* — this site is located immediately downstream of Boundary Dam on a high promontory along the eastern bank of the Pend Oreille River. The site provides day use facilities including a building with interpretive displays, an outdoor viewing platform, picnic tables, and a short trail to the viewing platform providing a closer vantage point of the dam and canyon. The site was built in the 1960s so visitors could watch the construction of the dam. Views of the dam from the Vista House are still considered one of the scenic attractions of the Project vicinity. From the Vista House and the viewing platform located at this site, visitors are afforded scenic views of the Pend Oreille River, Boundary Dam and Reservoir (forebay area), the Tailrace Recreation Area, the rock face of the powerhouse, transformer bays, transmission lines and towers, tailrace maintenance buildings and storage yards, and forested hills and mountains surrounding the Project area.
- *Boundary Recreation Area (BLM)* — the BLM manages a small, primitive site along the western shoreline of Boundary Reservoir north of Metaline. The forested site is accessed by vehicle off County Road 2975 and then along a 2.65-mile, two-track dirt road that crosses private, BLM-managed, and USFS-managed land. The recreation site provides two picnic tables and fire rings and a small cove area with some shoreline protection. Large scenic vistas are generally not available at the BLM's Boundary Recreation Area. Instead, views from this site include the forested reservoir shoreline and Everett Island, a forested island off the western shoreline of the reservoir. Views of Boundary Reservoir from this site are limited by the presence of Everett Island and the steep shoreline topography.
- *Metaline Waterfront Park and Boat Launch (Town of Metaline)* — this site is located on the western shoreline of Boundary Reservoir in the Town of Metaline. The site consists of a boat launch, picnic facilities, and other day use site amenities (playground area, restrooms, user-defined shoreline trails, etc.). Visitors to this site are afforded views of the wider section of Boundary Reservoir immediately upstream from the SR 31 Bridge, the forested shoreline of the reservoir, and the forested hills and mountains of the region. Additionally, some structures and the tall, grey cement plant in the town of Metaline Falls are also visible on the eastern shoreline of the reservoir across and to the north of Metaline Waterfront Park.
- *Campbell Park and Boat Launch (Pend Oreille County PUD)* — this site, operated by Pend Oreille County PUD as part of the Box Canyon Hydroelectric Project (FERC No. 2042), is located immediately downstream of Box Canyon Dam on the western shoreline of Boundary Reservoir. Campbell Park provides day use and camping

facilities, including picnic and camping sites, a swimming lagoon and beach, visitor center, and a boat launch with access to Boundary Reservoir. The viewshed at this site is dominated by hydroelectric-related facilities associated with the Box Canyon Project, including Box Canyon Dam, power-house, maintenance buildings and storage yards, and transmission lines and towers. In addition to the hydroelectric facilities, visitors to this site are also afforded views of the upper part of Boundary Reservoir, as well as the forested hills and mountains found along the reservoir shoreline and in the surrounding region.

Need for Additional Information

An evaluation of the effects of Project operations and potential proposed changes to the Project on aesthetic/visual resources is required as part of the FERC relicensing process, to describe existing conditions and to determine the need for and identify potential protection, mitigation, and enhancement (PME) measures that address any Project effects on these resources. Potential aesthetic/visual quality-related PME measures may ultimately be addressed (in the Preliminary Licensing Proposal and License Application) in the context of other related resource areas, such as site improvements and facilities in a proposed Recreation Management Plan (RMP) for the Project (Study No. 21), potential erosion control measures investigated in the Erosion Study (Study No. 1), and potential measures to control noxious weeds along the shoreline and on islands.

2.5. Detailed Description of Study

Study Area

The study area for the Aesthetics/Visual Resource Study primarily includes the lands and waters within and adjacent to the Project boundary. However, the area between the reservoir shoreline and adjoining parallel County roads and/or State highway will also be included where public viewing opportunities of the Project area are afforded. Potential PME measures that may result from this study will be limited to the lands and waters that are directly affected by the Project or where SCL has management responsibility.

Proposed Methodology

The CNFP is currently being updated by the USFS and is scheduled to be completed in 2007. Changes to the CNFP may affect aesthetic-related landscape planning factors and management prescriptions within USFS-managed lands and waters in the CNF. As such, the Technical Consultant conducting this study will consult with the CNF prior to initiation of the study to understand all aesthetic/visual resource management planning factors and objectives in the new CNFP.

The proposed Aesthetic/Visual Resource Study methodology includes the following six primary tasks:

- Collect existing aesthetic/visual resource information.
- Define key observation points (KOPs) (includes the river).
- Rate aesthetic/visual resources and their condition from these KOPs.

- Assess potential project-related adverse effects/negative conditions and policy inconsistencies, if any.
- Describe the general feasibility of potential options and enhancement opportunities to mitigate potential adverse Project operational effects or proposed changes to the Project.
- Develop a summary report.

Each of these proposed tasks is described below.

Collect Existing Aesthetic/Visual Resource Information

Existing aesthetic/visual resource information from the CNF (approved CNFP and final Niche Planning in 2007) will be collected and reviewed. These data and landscape planning factors will include, among others: Valued Landscape Character descriptions, desired Landscape Character Goals, Niche Area descriptions (International Byway and Remote Access), Scenic Integrity Objectives, GIS viewshed data and mapping for the centerline of major roadways parallel to the Project and the centerline of the reservoir surface (to be provided by the CNF), and Concern Level 1 and 2 travel routes and use areas in the Project vicinity.

Existing aesthetics/visual resource attribute information about the Project vicinity will also be collected from available sources, such as Visitor Center and Vista House guest comments, and tourism information.

Define Key Observation Points

Preliminary KOPs in or adjacent to the Project area have been defined, mapped and photographed during development of the Pre-Application Document (PAD) (SCL 2006a). These Preliminary KOPs were selected based on clear viewing opportunities of the Project area by the general public. Preliminary KOPs include:

- Sites within and along the SR 31 Scenic Byway corridor, such as the Eagle Nest Viewpoint;
- Project-area recreation sites, such as the Forebay Recreation Area and Metaline Waterfront Park;
- Views from the towns of Metaline and Metaline Falls; and
- The Boundary Reservoir surface area.

Existing aesthetic/visual resource character and viewing opportunities were described in the PAD for each Preliminary KOP. In this study, the Preliminary KOPs will be reviewed and more detailed existing character and viewing opportunity descriptions will be developed based on field reconnaissance (land and water), as well as from information collected in the PAD and developed in the previous task. In consultation with the USFS, additional KOPs may be added or existing ones may be deleted based on the results of additional field reconnaissance, and KOPs will be defined for use in identifying positive attributes and negative features related to Valued Landscape Character descriptions in the CNFP. Existing land-based KOPs in the analysis done for the PAD are likely adequate; however, additional on-water reservoir KOPs

(from watercraft) may be required to fully characterize existing conditions in the Project area and potential Project effects.

Rate Aesthetic/Visual Resources and Conditions from KOPs

At each KOP, the existing condition of aesthetic/visual resources will be rated. A Visual Conditions Form will be developed, in consultation with the USFS, to identify and record observed conditions and potential adverse Project effects, if any. This form will be based on aesthetic/visual resource evaluation forms used on other hydroelectric relicensing studies, incorporating components of SMS methodology, where applicable.

In addition to resource information to be collected via the Visual Conditions Form, aesthetic/visual resource condition and preference questions will be asked of area residents and other visitors to the Project area. These questions will be included in the Recreation Surveys, an element of the Recreation Resources Study (Study No. 21), and will be asked in both questionnaires and during focus group workshops. This effort will provide a constituent analysis listing of positive attributes and a frame of reference within the Valued Landscape Character description for the area.

Assess Policy Consistency and Potential Adverse Project-Related Effects

At each KOP, potential adverse effects on aesthetic/visual resources caused by Project operations or proposed changes to the Project will be assessed. The visibility of ongoing Project operations or proposed changes to the Project from each KOP will be catalogued. Disturbed sites or use areas that may negatively impact aesthetic/visual quality, but which could potentially be enhanced through various means, will be mapped and catalogued. Within the CNF, the condition at each KOP will also be evaluated for policy consistency with the approved CNFP (anticipated in 2007). Landscape planning factors to be considered in this assessment will include Valued Landscape Character description, desired Landscape Character Goals, Niche Area descriptions (International Byway and Remote Access), Scenic Integrity Objectives, and Concern Level 1 and 2 travel routes and use areas. Potential scenic landscape policy or planning inconsistencies on USFS-managed lands and waters will be noted, if any.

Describe the General Feasibility of Potential Options and Enhancement Opportunities to Mitigate Potential Adverse Project Operational Effects or Proposed Changes to the Project

Assuming existing or potential adverse Project-related effects to aesthetic/visual resources are identified in the previous task, potential solutions or options to address these adverse effects will be defined and evaluated for feasibility and effectiveness. Potential PME opportunities will be identified and considered only for lands and waters that are directly affected by the Project or where SCL has management responsibility.

Develop a Summary Report

The results and conclusions of the Aesthetic/Visual Resource Study will be summarized in text, maps, photos, and tables, as appropriate. The report will: (1) provide an overall description of aesthetic/visual resources in the Project area, (2) identify any observed adverse Project operational effects or effects of proposed changes to the Project on these resources, and (3)

describe the general feasibility of potential solutions or options to protect, enhance, or mitigate these resources, as appropriate. The summary report will also analyze the Project's consistency with scenic landscape policies and planning guidelines for USFS-managed lands and waters per the approved CNFP (anticipated in 2007) and related scenery management analyses conducted by the CNF.

2.6. Work Products

The draft study report will be provided to relicensing participants for technical review and input per the Process and Schedule Overview provided in Attachment 1, Section 2.3 of this RSP and the study schedule described below.

2.7. Consistency with Generally Accepted Scientific Practice

The methodology described herein for the Aesthetics/Visual Resource Study is generally consistent with standard aesthetic/visual research methodology and practices and is consistent with other comparable relicensing study plans in the Pacific Northwest that involve large hydroelectric projects and federally managed lands within and adjacent to the project boundary. Study results will be adequate to help develop future potential PME measures for Project area aesthetic/visual resources, if needed.

2.8. Consultation with Agencies, Tribes, and Other Stakeholders

Input regarding the Aesthetics/Visual Resource Study was provided by relicensing participants during a Recreation, Land Use, Aesthetics, and Socioeconomics (RLAS) Workgroup meetings held in Spokane, Washington, on July 26 and August 15, 2006. During these two meetings, draft study plans were presented and discussed. Comments provided by relicensing participants on the draft study plan are summarized in the PSP (SCL 2006b) and can also be found in the workgroup meeting summaries (available on SCL's relicensing website (http://www.seattle.gov/light/news/issues/bndryRelic/). The proposed Aesthetic/Visual Resource Study plan was included in the PSP that was filed with FERC on October 16, 2006.

Since filing the PSP, SCL has continued to work with relicensing participants on its proposed study plans. Relicensing participants provided no comments on the Aesthetic/Visual Resource Study plan at the November 15 study plan meeting, and PSP comments filed with FERC by the USFS (2007) stated that "The Forest Service agrees with SCL's proposed Aesthetic/Visual Resource Study. The agency [USFS] appreciates the approach SCL has taken in an effort to reach a consensus based study proposal and address scenic landscape goals and policies of the Colville National Forest planning process." No other PSP comments were filed with FERC regarding this study. (Comments are summarized in Attachment 3 and consultation documentation included in Attachment 4 of this RSP.) As a result, SCL has made only minor modifications to this plan to add clarification and detail.

2.9. Schedule

The Aesthetics/Visual Resource Study will be implemented in 2007 and completed in 2008 per the general schedule shown in Table 2.9-1.

Table 2.9-1. Schedule for Aesthetic/Visual Resource Study.

Activity	2007				2008				2009
	1 Q	2 Q	3 Q	4 Q	1 Q	2 Q	3 Q	4 Q	1 Q
Final study implementation planning, including establishing field staffing needs, if any, and determining final schedule									
Research and analysis including field and non-field activities									
Prepare draft study report									
Distribute draft study report for relicensing participant review									
Meet with relicensing participants to review study efforts and results and "cross-over" study results									
Include final study report in Updated Study Report (USR) filed with FERC									
Hold USR meeting and file meeting summary with FERC									

The Aesthetics/Visual Resource Study schedule will be coordinated with other resource studies, as applicable, including the Recreation Resource Study (Study No. 21) and Erosion Study (Study No. 1). As such, the schedule described above is considered tentative and may be revised based on other resource studies and/or other Project relicensing needs.

2.10. Progress Reports, Information Sharing, and Technical Review

The draft study report will be made available for relicensing participant review and comment per the Process and Schedule Overview provided in Attachment 1, Section 2.3 of this RSP and the Aesthetics/Visual Resource Study schedule described above. Prior to release of the Updated Study Report (which will include the results of the Aesthetic/Visual Resource Study), SCL will meet with relicensing participants to discuss the study results, as described in Attachment 1, Section 2.3 of this RSP.

2.11. Anticipated Level of Effort and Cost

The anticipated total cost for conducting the analyses and preparing the summary reports (draft and final versions) is approximately $30,000 to $35,000. One to two persons would be expected to spend 5 days finalizing study implementation details, approximately 10 to 20 days to research the visual character of the Project area and to identify potential Project effects and solutions (not including time associated with development, implementation, and data analysis resulting from the Recreation Surveys; see Recreation Resource Study (Study No. 21), and approximately 10 to 20 days to prepare and finalize summary reports (draft and final combined), plus expenses.

3.0 LITERATURE CITED

Cassidy, K.M. 1997. Land cover of Washington State: Description and Management Volume 1 in: Washington State Gap Analysis Project Final Report (K.M. Cassidy, C.E. Grue, M.R. Smith, and K.M. Dvornich, Eds.). Washington Cooperative Fish and Wildlife Research Unit. University of Washington. Seattle, WA.

Eastern Washington University. 1999. The River and the Road: Development and Interpretive Guidelines for the North Pend Oreille Scenic Byway. Department of Urban and Regional Planning. Eastern Washington University. Cheney, WA.

SCL (Seattle City Light). 2006a. Pre-Application Document for the Boundary Hydroelectric Project (FERC No. 2144). Seattle, Washington. May 2006. Available online at http://www.seattle.gov/light/news/issues/bndryRelic/br_document.asp

SCL. 2006b. Proposed Study Plan for the Boundary Hydroelectric Project (FERC No. 2144). Seattle, Washington. October 2006. Available online at http://www.seattle.gov/light/news/issues/bndryRelic/br_document.asp

USFS (USDA Forest Service). 1988. Colville National Forest Land and Resource Management Plan (Forest Plan), as amended. Colville National Forest. Colville, WA. 1,744 pp

USFS. 1992. Letter from the Forest Supervisor, Colville National Forest, to Forest Districts. Consistency determination guidance relative to the Forest Plan (1988) and Visual Quality Objectives. Colville, WA. 8 pp

USFS. 1995. Scenery Management System: Landscape Aesthetics, a Handbook for Scenery Management. Handbook No. 701. U.S. Department of Agriculture. Washington, D.C.

USFS. 2005a. Draft Colville National Forest Plan. Available at URL: http://www.fs.fed.us/r6/colville/cow/previous-fp/colville/index.htm. Accessed October 27, 2005.

USFS. 2005b. Recreation Site Facility Master Planning Process (MS PowerPoint presentation, including Forest Niche Planning). Colville National Forest. Colville, WA.

WDOT (Washington Department of Transportation). 2003. The North Pend Oreille Scenic Byway Management Plan. Olympia, WA. April 8, 2003.

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