

**Wallowa Falls Hydroelectric Project
FERC Project No. P-308
Study Progress Report
(Draft Technical Report)**

Aesthetics and Visual Resources



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For Public Review

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Acronyms and Abbreviations

CFR	<i>Code of Federal Regulations</i>
cfs	cubic feet per second
FERC	Federal Energy Regulatory Commission
Forest Plan	Wallowa-Whitman National Forest Land and Resource Management Plan
GIS	geographic information system
OPRD	Oregon Parks and Recreation Department
PM&E	protection, mitigation, and enhancement
Project	Wallowa Falls Hydroelectric Project
RV	recreational vehicle
SMS	Scenery Management System
USFS	United States Forest Service
VMS	Visual Management System
VQO	Visual Quality Objective
WWNF	Wallowa-Whitman National Forest

EXECUTIVE SUMMARY

This draft Aesthetics and Visual Resources Study Progress Report assesses the effects of the Wallowa Falls Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) Project No. P-308, on aesthetic and visual resources, in accordance with *Code of Federal Regulations* Title 18, Conservation of Power and Water Resources. The purpose of this Study Progress Report is to inform stakeholders and PacifiCorp of issues and findings that have been identified, collected, and synthesized during relicensing to date. In addition, this report identifies needs that may be considered during a new license term; however, discussions in this document should not be interpreted as potential protection, mitigation, and enhancement (PM&E) measures. The information contained in this report will be reviewed and used to produce a Final Study Progress Report, which will be considered along with the results of other relicensing studies to develop potential PM&E measures that take into account all resource needs, not only aesthetic and visual resources.

This Study Progress Report consists of five primary components:

- Identification of resource and land management plan goals related to aesthetic and visual resources of relevance to the Project
- Description of the existing aesthetic characteristics of the Study Area and Project
- Changes to Project facilities and operations from relicensing
- Potential conflicts with resource and management plan goals
- Conclusions and recommendations

The components are summarized in the following sections.

ES.1 Identification of Resource and Land Management Plan Goals Related to Aesthetic and Visual Resources of Relevance to the Project

Two agencies in the Study Area have developed resource management or land use plans that address aesthetic or visual resources. They are the U.S. Forest Service, which is in charge of managing the Wallowa-Whitman National Forest (WWNF), and Wallowa County, which is responsible for planning and managing lands and resources within the nonfederal unincorporated parts of Wallowa County. The WWNF Land and Resource Management Plan (Forest Plan) assigned a Visual Quality Objective (VQO) of retention to the WWNF lands in which the Project is located. The retention VQO is the second most restrictive VQO in terms of permissible changes to a viewed landscape. The Eagle Cap Wilderness is near the Project (0.25 mile away) but its Stewardship Plan is not applicable to the Project. No goals, standards, or metrics related to noise have been identified. The Wallowa County Comprehensive Plan contains goals and policies related to visual resources that must be examined.

ES.2 Description of the Existing Aesthetic Characteristics of the Study Area and Project

The very mountainous Study Area is visually spectacular and the rugged terrain in which most of the Project is located, combined with thick vegetation, screens much of the Project from general public view. Because the Project has been in existence since 1921, its presence has contributed to the character of the Study Area.

ES.3 Changes to Project Facilities and Operations from Relicensing

Potential changes in minimum flows released into the bypass reach are likely to be greater than the current requirements. This potential increase in the amount of water released into the bypass reach will improve the aesthetic and visual characteristics of several portions of the bypass reach that can be viewed by the public.

ES.4 Potential Conflicts with Resource and Management Plan Goals

The Project dam, spillway, catwalks, laydown area, storage yard, and upper penstock trestle do not meet a VQO of retention and are inconsistent with the Forest Plan (and have been since the WWNF Land and Resource Management Plan was adopted in 1990). The Project is consistent with the Wallowa County Comprehensive Plan.

ES.5 Conclusions and Recommendations

The Study Progress Report identifies several measures to consider for improving the aesthetic and visual environment of the Project. The following measures are recommended for Project facilities located on WWNF lands:

- Plant vegetation between the East Fork Trail and the shoreline area near the forebay to improve screening of views of the forebay, dam, spillway, catwalk, dam laydown area, and storage area from people using the trail. Modify the intake structure to make it more attractive and similar in character with the storage shed (cabin) in the laydown area.
- Treat (stain) the timber support members of the upper trestle that are light in color a darker color so that all support timbers are the same color.

To improve the appearance of Project facilities (the powerhouse, substation, fenced yard, and entrance to Pacific Park) that are seen from the upper end of the Joseph-Wallowa Lake Highway, the Wallowa Lake Trailhead, and Little Alps Day Use Area, the following measures are suggested.

- Partially screen the Powerhouse area (and make more attractive) with landscaping along the portion of the fence abutting the Joseph-Wallowa Lake Highway turnaround area.
- Modify or replace chain-link fence on the side abutting the Joseph-Wallowa Lake Highway turnaround area with a more attractive fencing material or, at a minimum, black-coated vinyl chain-link fence (if this option is chosen, replace the chain-link fence with black-coated vinyl fencing).

- Add interpretive signage near this facility for the public to read that will explain the history and function of the Project, Pacific Park, the local trail system, and other features.

1.0 STUDY OBJECTIVES AND DESCRIPTION

PacifiCorp Energy (PacifiCorp) plans to file an application to relicense the Wallowa Falls Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) Project No. P-308, located on the East Fork Wallowa River, West Fork Wallowa River, and Royal Purple Creek in Wallowa County, Oregon. The current license will expire on February 28, 2016. The Project has a generation capacity of 1,100 kilowatts and is situated on private land owned by PacifiCorp and federal land managed by the Wallowa-Whitman National Forest (WWNF).

In accordance with *Code of Federal Regulations* (CFR) Title 18 (Conservation of Power and Water Resources) Section 5.11(d)(1), FERC requires relicensing applicants to assess Project effects on aesthetic and visual resources. To fulfill this requirement, the following objectives have been established for the aesthetic and visual resources study:

- Identify applicable goals stated in applicable comprehensive resource management and land use plans that apply to aesthetic and visual resources.
- Document and describe the existing aesthetic characteristics and visual resources within the Study area.
- Identify changes to the existing aesthetic characteristics and visual resources as a result of changes to Project facilities and operations associated with relicensing.
- Review potential conflicts with the goals that apply to aesthetic and visual resources identified in applicable comprehensive resource management and land use plans. Assess how relicensing may result in changes to Project facilities and operations conflicting with these plans.
- Identify opportunities for mitigation measures.

This study assesses existing and future recreation needs related to the Project over the term of the new license (anticipated to be 30 to 50 years). Study results will be used to develop appropriate protection, mitigation and enhancement measures.

Section 2 of this report documents and describes the existing aesthetic characteristics and visual resources within the Study area and reviews applicable comprehensive resource management and land use plans. Section 3 describes the methodology used to identify changes to the existing aesthetic characteristics and visual resources. Section 4 assesses changes to the existing aesthetic characteristics and visual resources as a result of changes to Project facilities and operations associated with relicensing. Section 5 presents discussions and conclusions relative to this Study Progress Report. Section 6 lists the references cited in the text. Appendix A contains photographs of Project facilities and Appendix B contains photographs of two different flows released into the bypass reach.

2.0 BACKGROUND DESCRIPTION

This section provides background information useful to understanding the aesthetic and visual resource analysis and does the following:

- Defines the Study Area
- Describes the nexus between Project facilities and operations and aesthetic and visual resources
- Summarizes resource management and land use plan goals and policies related to aesthetics and visual resources

2.1 Study Area Definition

For aesthetic and visual resources, the Study Area is 0.5 mile from the Project boundary. For noise, considered to be a visual/aesthetic resource, the Study Area is a 3-mile radius around the Project powerhouse. Additional description follows.

2.1.1 Aesthetic and Visual Resources

Because most of the Project is located within the steep, narrow, heavily timbered canyon of the East Fork Wallowa River, the visibility of Project facilities is limited (see Figure 1). The most visible Project facilities are located at the northwest end of the FERC Project boundary (Project boundary) and include the powerhouse, substation, and Pacific Park Campground. Even these facilities are not visible over a great distance (less than approximately 0.25 mile) due to topography and vegetation. Because of the Project's limited visibility, the Study Area for aesthetic and visual resources is 0.5 mile from the Project boundary. Figure 2 provides an overview of the Study Area.

2.1.2 Noise

The most prevalent noise associated with the Project is associated with generating electricity. Water released from the Pelton Wheel generator (which is located in the Powerhouse) into the tailrace channel produces a high-pitched noise, which under varying circumstances, can be heard as far as several miles away. The Study Area for noise is a 3-mile radius around the Project powerhouse. This distance may change after field investigations.

2.2 Nexus to Project

Per 18 CFR §5.11(d)(4), this section describes the nexus between Project operations and effects on aesthetic and visual resources. The Project has potential direct and indirect effects on aesthetic and visual resources within, and adjacent to, the Project boundary as well as on the affected reach of the East Fork Wallowa River below the dam (the bypass reach). These effects include the visibility of Project facilities within the surrounding landscape, diversion of water from the East Fork Wallowa River, and sound from the Project powerhouse.

2.3 Resource Management and Land Use Plan Goals and Policies Related to Aesthetics and Visual Resources

Per 18 CFR §5.11(d)(2), this section describes goals and policies found in resource management and land use plans that are related to aesthetic and visual resources. Two agencies in the Study Area have developed resource management or land use plans that address aesthetic or visual resources. They are the U.S. Forest Service (USFS), which is in charge of managing the WWNF, and Wallowa County, which is responsible for planning and managing lands and resources within the nonfederal unincorporated parts of Wallowa County.

2.3.1 Wallowa Whitman National Forest

2.3.1.1 *Wallowa-Whitman National Forest Land and Resource Management Plan*

Day-to-day management of scenery and visual resources in national forests is prescribed in land and resource management plans (forest plans). The WWNF is managed under the *Wallowa-Whitman National Forest Land and Resource Management Plan* (USFS, 1990). National forests base the management of scenery and visual resources on one of two systems, the Scenery Management System (SMS) (USFS, 1995a), or the older Visual Management System (VMS) (USFS, 1974). National forests that have updated or revised their forest plans since 1995 have generally adopted the SMS system to replace the VMS. Forests such as the WWNF that have not completed or finalized updates or revisions of their forest plans often continue to use the VMS.

Forest plans consider a number of factors when developing an inventory of existing visual conditions and when planning how to manage the Forest to meet future visual resource planning objectives. Existing and desired future visual condition classifications are called Visual Quality Objectives (VQOs) in the VMS. The objectives are used to provide management direction in terms of how much a landscape may be altered and still meet forest plan direction for the visual resource. They are intended to help a forest team manage its lands to achieve a desired future condition, including meeting future VQO classes if areas do not currently meet established VQOs. Five VQOs describe the landscape in varying degrees of naturalness. They are Preservation (the landscape is essentially unaltered), Retention (the landscape appears largely unaltered), Partial Retention (the landscape may appear slightly altered), Modification (the landscape can appear moderately altered), and Maximum Modification (the landscape can appear heavily altered).

The Project is located in an area with a VQO of retention, which is the second most restrictive VQO in terms of permissible changes to the viewed landscape (see Figure 3). In the retention VQO, human activities are not visually evident, and the valued (desired) landscape character appears intact or unaltered. Deviations associated with proposed actions may be present, but must repeat the form, line, color, texture, pattern, and scale common to the landscape. The southernmost part of the Project boundary is approximately 0.25 mile north of the edge of the Eagle Cap Wilderness. The wilderness has a VQO of preservation, which is the most restrictive VQO in terms of allowed changes to the viewed landscape.

2.3.1.2 Eagle Cap Wilderness Stewardship Plan

A stewardship plan was developed for the Eagle Cap Wilderness in 1995 to supplement the Forest Plan (USFS, 1995b). The Stewardship Plan is used in conjunction with the Forest Plan in managing the Eagle Cap Wilderness. It includes standards and guidelines for resources within the Eagle Cap Wilderness including social elements. These standards and guidelines address human issues such as carrying capacity, solitude (for visitors), occupied campsites, group size, intrusions that might disturb visitors, and user density. The Stewardship Plan does not contain VQOs or specific guidance on visual issues. Visual resources within the wilderness are addressed in the Forest Plan. The Forest Plan's VQO of preservation for the Eagle Cap Wilderness is consistent with the intentions of preserving the characteristics of the wilderness that make it special, including the aesthetic and visual environment.

2.3.2 Wallowa County

The Wallowa County Comprehensive Plan contains a series of goals that address concerns related to a number of topics and resources (Wallowa County, 2012). Goal 5 of the comprehensive plan is titled "Open Spaces, Scenic and Historic Areas, and Natural Resources." The intent of the goal is to conserve open space and protect natural and scenic resources. Appendix 5-6 identifies scenic views and sites including two near the Study Area for aesthetic and visual resources. The two areas are the Eagle Cap Wilderness and Mount Howard. Goal 5 also contains several maps (Maps G5-1: Sensitive View Areas, G5-2: Scenic Resource Areas, and G5-3: Protected Status Scenic Resources) that depict areas around Wallowa Lake, including part of the Project Study Area. Additional information will be obtained from the Wallowa County Planner on the applicability of these goals to Project facilities and operations and results will be presented in the Final Technical Report.

3.0 METHODS

This report was developed in consultation with stakeholders over a 2-year period. Because much of the Project is located on the WWNF, local WWNF staff were involved in reviewing and approving the Study Plan used for this report. After the Study Plan was reviewed and approved by FERC, work on the report commenced. Materials related to the Project and the relicensing effort were supplied by PacifiCorp to CH2M HILL for review. The WWNF website was consulted numerous times to obtain information from the Forest Plan (USFS, 2012). In addition, WWNF staff were contacted to obtain WWNF geographic information system (GIS) and other data. Wallowa County Planning Department staff were contacted to confirm relevant information in the county comprehensive plan.

To assist in describing the character of the Study Area and Project facilities and operations, a systematic approach to photo-documentation of the Study area was undertaken. Photographs of Project facilities and their surroundings were taken from 18 locations around the Study Area and can be viewed in Appendix A. Particular attention was paid to photographing these facilities from locations where the general public potentially sees them. Photographs were taken of the East Fork Wallowa River bypass reach at two different release flows considered to be minimum release flows. The photographs were taken from four of the relatively few locations along the bypass reach that can be seen by the general public (see Appendix B).

The assessment of the visual compatibility or incompatibility of existing Project facilities as well as the consistency or inconsistency of these facilities after Project relicensing with the existing WWNF VQOs was determined by applying the VMS (USFS, 1974)). These determinations were made by the authors of this report. They will be verified with WWNF staff and results will be presented in the Final Technical Report.

The assessment of the consistency or inconsistency of existing Project facilities as well as the consistency or inconsistency of these facilities after Project relicensing with the Wallowa County Comprehensive Plan will be presented in the Final Technical Report. These determinations will be made in consultation with the Wallowa County Planner.

4.0 RESULTS

This section presents the results of the aesthetic and visual resource analysis. Conclusions are presented in Section 5.

4.1 Aesthetic and Visual Characteristics of the Study Area

Wallowa Lake and nearby topography were largely created by glaciation. The Wallowa Lake and Eagle Cap Wilderness area is one of the most spectacular in Oregon and attracts people from throughout the Pacific Northwest and beyond. Wallowa Lake is a classic example of a lake carved by a glacier (see Figure 1). Its east and north sides are composed of grass-covered moraines and have little development. The Joseph-Wallowa Lake Highway passes along the lower slope of the east moraine and follows the lake into the heavily timbered valley at the southern end of the lake. Wallowa Lake State Park is located at the south end of the lake. The shoreline of the state park includes the delta area of the Wallowa River, “park-like” areas with grass and picnic facilities, and a developed marina and boat launch.

Immediately south of the state park is the community of south Wallowa Lake. This area has a strong vacation-resort character and is densely developed. It contains many single-family residences, some of which are used as year-round residences with others rented as vacation homes. Several resorts provide rental cabins and recreational vehicle (RV) or tent campsites. Two camps, one operated by the Methodist Church and the second by the Blue Mountain Council of the Boy Scouts of America, are located along the West Fork Wallowa River. Neither camp is used as much as they were in past years and both are in varying states of disrepair. Other visitor-oriented business that influence the character of the south Wallowa Lake community include restaurants, souvenir shops, the Wallowa Lake tram that takes people to the top of nearby Mount Howard, miniature golf facilities, water bumper cars, and a go-cart track. Several outfitters are located in the area and take clients on horseback rides on trails that pass through the Project that can range from an hour to multiday back-country excursions into the Eagle Cap Wilderness.

Between the community of south Wallowa Lake and the Project boundary is land owned by PacifiCorp, but leased to the Oregon Parks and Recreation Department (OPRD) for the Wallowa Lake State Park maintenance facility and the Little Alps Day Use Area. The maintenance facility is set away from Joseph-Wallowa Lake Highway and vegetation between the road and the maintenance facilities tends to screen views of the facility. The day use area has numerous trees and a park-like character. Both sides of the end of Joseph-Wallowa Lake Highway are used for parking by people visiting the Eagle Cap Wilderness, or (to a lesser degree) the Little Alps Day Use Area. The sides of the highway can be quite congested with parked vehicles during peak use times.

The northernmost part of the Project boundary (Pacific Park Campground) is approximately 1 mile south of the southern end of Wallowa Lake and south of the Wallowa Lake community. It is bordered by the Little Alps Day Use Area on the east and the PacifiCorp owned ridge separating this area from the West Fork Wallowa River gorge on the west. Flowing through the campground from southeast to northwest is the main channel tailrace and the side channel tailrace. The powerhouse/substation area is situated southeast of the campground at the upper part of the Wallowa Lake valley. This

is the last fairly level area before the Project enters the steep and narrow East Fork River valley. With the exception of the powerhouse and substation, this part of the Study area has a park-like appearance. There are numerous trees, the Wallowa Lake Trailhead, the Little Alps Day Use Area and towering slopes and peaks above. The powerhouse and substation introduce features with industrial character to the area. The powerhouse is located at the end of the Joseph-Wallowa Lake Highway and is quite visible from it and nearby areas.

From the powerhouse/substation area, the Project passes through the East Fork Wallowa River valley to the upper Study area. This part of the Project boundary is located between the river below, and steep side slopes containing rock outcroppings and talus slopes above. Because of the rugged terrain, the vast majority of people viewing this area do so from the East Fork Trail or the forebay access road. Due to the thick vegetation along the trail and road, views tend to be upward towards the slopes, cliffs, and peaks above. Views down to the river are possible at several areas where there are breaks in the vegetation or where the trail or road pass near the river.

Approximately 0.25 mile southeast of the Project boundary (and higher in terms of elevation) is the Eagle Cap Wilderness. With the exception of Project facilities (the forebay, dam and spillway catwalk and storage/laydown area) there are very few signs of human-alteration of the landscape that can be seen from the East Fork Trail between the trailhead area and the beginning of the wilderness. Once in the wilderness, there are few signs of human-alteration of the landscape until Aneriod Basin, where a private inholding containing several buildings can be seen.

4.2 Project Effects on Aesthetic and Visual Character

Both Project facilities and operations influence the aesthetic and visual setting and condition of the Study area. The physical characteristics of Project facilities are described below, as are the influences that Project operations have on the aesthetic and visual character of the Study area.

4.2.1 Facilities

Project facilities have existed since 1921 when the Project was constructed. To some degree, these facilities have become part of the local landscape and influence its character. The following describe and discuss the appearance and visibility of Project facilities. Table 4.2-1 lists and briefly describes Project facilities that have the potential to be seen by the general public. Appendix A contains photographs of Project facilities and Figure 4 depicts the locations of the facilities described below.

4.2.1.1 *Royal Purple Diversion*

This facility includes a 2-foot-high and 9-foot-long concrete diversion dam and a 240-foot-long, 8-inch-diameter pipe that discharges flows into the forebay upriver from the Project dam. Views of the diversion facility from the East Fork Trail are obscured by vegetation and topography. Due to its remote location that is difficult to access or see and its small scale, the diversion dam and pipeline have no to little influence on visual resources in the WWNF and is not inconsistent with the Forest Plan.

4.2.1.2 Forebay

The 0.2-acre forebay has the appearance of a small pond, or pool in the East Fork Wallowa River. The amount and apparent speed of water moving through it depends upon flow. During much of the year, water is released over the dam into the spillway, so there is the appearance of slowly moving water through the forebay. The forebay is visible to people hiking along the East Fork Trail as they approach the dam area and to people accessing the area from the forebay access road. It likely attracts less attention than the dam, catwalk and intake structure. Along with the dam and its related structures, the forebay has changed the appearance of this part of the East Fork Wallowa River. To some viewers its presence likely detracts from a natural setting, but other people may appreciate its pond-like appearance as part of the Project dam complex. The waters of the forebay are similar to the river in terms of scale, form, and color. The forebay would likely meet a VQO of retention when viewed from the East Fork Trail without the presence of other associated Project facilities (the dam, spillway, and catwalk).

4.2.1.3 Laydown and Storage Area

The laydown and storage area is located on the southeast side of the forebay and consists of a cleared area, a storage shed (which due to its cabin-like appearance has visual interest), and piles of materials (old wood pipes, shakes and other miscellaneous materials). The area appears as a clearing with a “cabin” when viewed from the East Fork Trail. When seen at a closer distance from the forebay access road, it has more of a utilitarian appearance. Its appearance is not that of a natural opening, and is likely seen by most viewers as part of the Project complex. Due to its contrast with the nearby landscape in terms of form, line, color and textures, the laydown and storage area does not meet a VQO of retention when viewed from the East Fork Trail.

4.2.1.4 Dam, Spillway and Catwalk

The Project’s dam is a buttressed rock-filled timber crib dam that is 125 feet in length and 18 feet in height. It has a 30-foot-wide spillway over which an aluminum catwalk has been installed to provide access over the dam for PacifiCorp workers. A wood deck over the forebay that supports the intake structure control wheels is located just beyond the southeastern side of the catwalk. These Project facilities are the most visible components seen from the East Fork Trail (although they are visible from less than 100 feet of the trail and to fully view the facilities people must leave the trail and approach the dam). In a comment letter to FERC dated June 23, 2011, the WWNF noted that Project features including the dam and spillway catwalk are considered visual intrusions to Forest visitors viewing it from the East Fork Trail. The most immediately visible facility to most viewers is likely the catwalk, due to its semireflective aluminum finish. These facilities are located within the WWNF and due to their contrast with the nearby landscape in terms of color, line, form and texture, do not meet a VQO of retention when viewed from the East Fork Trail.

4.2.1.5 Penstock

The 5,688-foot-long penstock varies in size from 16 to 18 inches in diameter. Most of it is underground, but there are two aboveground sections supported by trestles. The upper

trestle section is below the dam and is located along the east side of the East Fork River next to the forebay access road. It is visible through trailside vegetation from the East Fork Trail. The penstock color is a mottled brown, whereas the trestle support timbers (and cross bracing) are a mixture of older very dark wood, newer (greenish colored) timbers and (brown) cross braces. When viewed from the East Fork Trail, the penstock and trestles contrast with the lighter brown color of the cut bank beyond it. Along the 100 feet or so of the East Fork Trail from which the penstock can be viewed, it appears as a long, linear, human-made object. Some viewers likely find its presence inconsistent with the setting, whereas some likely find it of interest (although no Project components have been designated as historic resources, some components like the penstock have a character that might be best described as historic industrial). The upper trestle is located within the WWNF and due to its contrast with the nearby landscape in terms of color, form and line does not meet a VQO of retention when viewed from the East Fork Trail. The rest of the penstock that is buried and does meet a retention VQO when seen from the few places along the East Fork Trail from which it is somewhat visible.

The lower trestle section is seen by far fewer people than the upper section because it is accessed via the forebay access road. Viewers get much closer to the lower trestle (many view it from the wood bridge that crosses the bypass reach) than the upper trestle. Many who view it also take time to examine a waterfall upriver from where the trestle crosses over the bypass reach. The lower trestle has a metal support structure that runs along its top. Like the upper trestle, the wood timbers have been updated and have different colors, which detracts from a unified trestle appearance. The lower trestle is located on PacifiCorp land.

4.2.1.6 Forebay Access Road

The forebay access road winds its way past the powerhouse and substation and continues up to the forebay area. The first hundred feet or so of the road are also used as the beginning of the East Fork Trail. The forebay access road passes over the Project penstock several times and is adjacent to the lower and upper penstock trestles. The unpaved road is steep in some locations, but is still used by some recreationists for accessing the Eagle Cap wilderness area during the winter, partly because it avoids avalanche chutes located above the East Fork Trail. A small portion of the road that passes through the WWNF can be seen from the East Fork Trail behind the upper penstock trestle. The road does not meet a VQO of retention when viewed from the East Fork Trail due to its contrast with the nearby landscape in terms of line, form and color.

4.2.1.7 Powerhouse and Substation

The area where the powerhouse and substation are located is approximately 16,500 square feet (0.38 acre) in size. The powerhouse is approximately 35 feet wide by 45 feet long and 18 feet high. The metal building is a light yellow-green color and has a functional, industrial appearance. The substation is adjacent to the southeast side of the powerhouse. Four wood poles approximately 35 feet in height support the 7.2-kilovolt transmission line that connects the substation with the powerhouse. The perimeter of the facility is surrounded by a chain-link fence topped with constantine wire (which is a roll of barbed wire). The facility yard is covered in gravel, which continues beyond the fenced area and entry gate to provide vehicular access to the Joseph-Wallowa Lake

Highway turnaround area. The powerhouse is visible to people passing it by vehicle from the Wallowa Lake Trailhead; from the WWNF trail that passes next to it on its way to connect with the East and West Fork trails; and to some degree from parts of the Pacific Park Campground.

4.2.1.8 Tailraces

Water released after generation flows through a concrete channel tailrace to a location west of the Pacific Park Campground road where it flows into rock-lined channels. The main channel tailrace stays west of the road and a side channel tailrace is located east of the campground road. The side channel is a relief channel that only operates at higher flows. Both tailraces have the appearance of creeks and add interest and the sound of flowing water to the campground.

4.2.1.9 Pacific Park Campground

The Pacific Park Campground is a linear facility that follows the Project tailraces from southeast to northwest. The unpaved road, somewhat informal campsites, ample parking, wood tables, campfire pits rings, and two vaulted toilets give it a rustic appearance, particularly when compared to campsites at Wallowa Lake State Park or nearby private campgrounds. The two Project tailraces add to the setting with their stream-like appearance. The division between the campground and Little Alps Day Use Area is not strong. The side channel tailrace separates the two facilities and is crossed by informal structures such as boards and logs. A barbed wire fence also separates the two areas, but is generally in disrepair and does not effectively keep people out of each facility. The campground and nearby areas are heavily forested and a series of social trails wind up the hillside to the west of the campground. The entry to the campground is not identified well and it is difficult for many people to understand what the campground is (some think it is an extension of the Little Alps Day Use Area). The campground is not particularly visible from the Joseph-Wallowa Lake Highway or its turnaround area. It is more visible from parts of the Little Alps Day Use Area.

Table 4.2-1 Major Project Facilities Visibility Summary.

Facility (from upriver to downriver)	Location	Visible From	Who Might See	Notes
Royal Purple Diversion	in WWNF	Only seen if leave trails	People leaving East Fork Trail.	Very difficult to reach or see due to heavy vegetation and being off-trail.
Forebay	In WWNF	Seen from one location along West Fork Trail and from terminus of the forebay access road and storage area.	People hiking on East Fork Trail or on the forebay access road.	Seen from a short section of the trail. Has the appearance of a pond.
Dam Laydown and Storage Area	In WWNF	Seen from one location along West Fork Trail and from terminus of Project forebay access road and storage area.	People hiking on East Fork Trail or on the forebay access road.	Seen from a short section of the trail. Presence of dam and other facilities add human-made elements, some with a historic character (storage building).
Dam, Spillway, Catwalk	In WWNF	Seen from one location along West Fork Trail and from terminus of the forebay access road and storage area.	People hiking on East Fork Trail or on the forebay access road.	Seen from a short section of the trail. Presence of dam and other facilities add human-made elements.
Penstock	In WWNF and PacifiCorp land	Elevated sections seen from several parts of West Fork Trail and the forebay access road.	People hiking on East Fork Trail or on the forebay access road.	Elevated structures likely of interest to some views, owing to their unusual and historic character.
Forebay Access Road	In WWNF and PacifiCorp land	Seen from Wallowa Lake Trailhead area and from parts of the West Fork Trail.	People hiking on East Fork Trail or on forebay access road.	Appears as a cleared road when viewed from trail.
Powerhouse and Substation	PacifiCorp land	Very visible from Joseph-Wallowa Lake Highway, Wallowa Lake Trailhead, part of Little Alps Day Use Area, Pacific Park Campground, the lower portions of the East Fork and West Fork Trails.	Motorists, people parking and accessing trails, campers at Pacific Park Campground.	Very visible because of location off of terminus of Joseph-Wallowa Lake Highway and proximity to Wallowa Lake Trailhead, trails, and Little Alps Day Use Area. Chain-link fence around the facility, open yard and color (yellow) of building lend an industrial appearance to the Powerhouse area.
Tailraces	PacifiCorp land	From Pacific Park Campground, Little Alps Day Use Area.	Campers at Pacific Park Campground and recreationists at Little Alps Day Use Area.	Similar in appearance to creeks.

Table 4.2-1 Major Project Facilities Visibility Summary.

Facility (from upriver to downriver)	Location	Visible From	Who Might See	Notes
Pacific Park Campground	PacifiCorp land	Joseph-Wallowa Lake Highway, Little Alps Day Use Area.	Campers at Pacific Park Campground and recreationists at Little Alps Day Use Area.	Has the characteristics of a rustic campground.

4.2.2 Operations

The Project is operated as a run-of-river effort. Up to 16 cubic feet per second (cfs) of water (15 cfs maximum from East Fork Wallowa River and 1 cfs from Royal Purple Creek) enters the steel penstock and flows 5,688 feet to the powerhouse. Water used for power generation is discharged into the West Fork Wallowa River and water that is not used for power generation flows over the spillway and into the bypass reach of the East Fork Wallowa River. The bypass reach begins at the dam and continues approximately 1.7 miles to its confluence with the West Fork Wallowa River just north of the Pacific Park Campground. The existing license requires a continuous minimum instream flow release into the bypassed reach of 0.5 cfs, or the natural inflow to the reservoir, whichever is less (as measured immediately downriver from the dam).

Table 4.2-2 identifies the average minimum, mean, and maximum flows between May and the end of September and indicates when flows would fall below 16.5 cfs. Minimum flows below 16.5 cfs can be expected to occur during May of average minimum flow years, from July through September of average minimum flow years, and during September of average mean flow years, as the table shows. These times correspond with the time of year that the greatest number of people would potentially view flows in the bypass reach.

Table 4.2-2 Average Monthly Flow Data.*

Month	Average Minimum Flow (cfs)	Average Mean Flow (cfs)	Average Maximum Flow (cfs)
May	14.9	30	59.1
June	25.2	61	142.2
July	11.8	44	98.2
August	9.62	20	37.3
September	9.97	15	24.8

* For USGS gaging station 13325001 (East Fork Wallowa River and Wallowa Falls power plant tailrace near Joseph, Oregon) for the 58-year period of record 1924 - 1983.

Source: PacifiCorp. Wallowa Falls Hydroelectric Project, FERC No. P-308. Preapplication Document. February 2011.

Several options are being considered for increasing minimum flow releases into the bypass reach. All are greater than the current minimum flows and would be expected to

improve the aesthetic condition of the bypass reach during all water years, particularly during average minimum flow years.

Because of the steep terrain it flows through, heavy riparian vegetation, and scarcity of places to view the bypass reach, there are relatively few opportunities for the public to view water flowing through the bypass reach. The best views are from several locations along the forebay access road (where it crosses or approaches the bypass reach) and one or two locations along the East Fork Trail. To determine how optional flows being considered would influence the aesthetic condition of the bypass reach, photographs of two different flows were taken from four locations during the site visit. The flow photographed on August 21, 2012, was approximately 5 cfs and the flow on August 22, 2012, was approximately 8 cfs. Photographs of the flows can be viewed in Appendix B. The following sections compare the two flows viewed from the four locations.

4.2.2.1 Location 1: First Encounter with Bypass Reach on Wallowa Falls Forebay Access Road

This close-up view of the bypass reach from the edge of the forebay access road focuses on the riverbed. Slightly more rocks in the riverbed are covered with flowing water at the 8 cfs flow when compared to the 5 cfs flow and slightly more “whitewater” is visible at the higher flow. Despite these slight differences, there are negligible differences between the aesthetic qualities of these flows. Both flows improve upon the aesthetic quality of the existing 0.5 cfs minimum flow.

4.2.2.2 Location 2: Waterfall Overlook

This location is approximately 10 feet from the side of the forebay access road and offers a clear view of the approximately 30-foot-high waterfall. Although the width of water flowing over the lip of the falls is about the same with both flows, the amount of whitewater cascading over the falls can be seen to decrease as the flows decrease. Although the 8 cfs flow would likely be seen by most viewers and is somewhat preferable compared to the 5 cfs flow, both flows create impressive waterfalls and are an improvement over the current minimum flow requirement.

4.2.2.3 Location 3: Forebay Access Road Bridge Over Bypass Reach Looking South (upriver)

Looking upriver from the bridge provides a clear view of the river channel and its features. The 8 cfs flow produces slightly more whitewater features than the 5 cfs flow, but does not noticeably increase the width of flow in the riverbed. There is relatively little difference in the appearance of the 8 and 5 cfs flows from this location and both flows would be an improvement over the existing 0.5 cfs minimum flow requirement.

4.2.2.4 Location 4: Forebay Access Road Bridge Over Bypass Reach Looking North (downriver)

The downriver view from the bridge focuses on the area below the bridge and a log across the river channel. The higher the flow, the more whitewater can be seen spilling from the chute (seen at the bottom of the photograph) upriver from the log. The reviewer

did not notice a great deal of difference between the flows when he visited this location. However, when comparing the two flows side by side in Appendix B, the slight to moderate difference between the 8 and 5 cfs flows becomes more somewhat more apparent. Both flows would be an improvement over the current minimum flow requirement.

Noise associated with various activities in the south Wallowa Lake area (vehicles, motorized boats, go-carts) as well as the operation of the Project generator can be heard in parts of the Study Area. In a comment letter to FERC dated June 23, 2011, the WWNF noted that noise from the powerhouse can be heard for at least a mile and the WWNF considers this a disruption to Forest users. Other areas from where the Project generator can be heard under varying conditions are identified in Table 4.2-3.

Table 4.2-3 Areas from which Project Generator Noise is Potentially Heard.

Heard From	Notes
Pacific Park Campground	Water flowing through tailraces often masks noise, but when water is not flowing through the tailraces the generator's noise is apparent.
Parts of South Wallowa Lake Community	Depending on other noises in the area (e.g., vehicles, music, wind), the generator can be heard to varying degrees, which decrease with distance.
East Fork Trail	The generator can be heard where terrain does not block it, particularly on the part of the trail on PacifiCorp land, but also on parts of it within the Wallowa-Whitman National Forest.
West Fork Trail	The generator reportedly can be heard a mile or so up the West Fork Trail, which is within the WWNF. This distance is greater than the East Fork Trail because there is less terrain to block the noise.
Chief Joseph Mountain Trail	The generator reportedly can be heard from some areas of this trail, but noise associated with the West Fork Wallowa River might mask generator noise in some parts of the trail during much of the year.

As part of the Recreation Resource Study, campers at the Pacific Park Campground were e-mailed a questionnaire to complete related to their experience camping at Pacific Park and using area trails (CH2M HILL, 2012). A primary purpose of the questionnaire was to see if powerhouse generator noise was noticed by the respondents and, if so, if it interfered with their experience. The survey was completed by 19 parties, not as many as sought but a sufficient number to provide informational, if not statistically valid, feedback. One question asked if they noticed human-made elements (for example, trail signs, trail improvements, utility lines, buildings, noise, odor, and lights) while using the trail system and if so, whether the elements affected their trip. Of the 12 respondents who were aware of human-made elements, nine said the elements did not affect their experience. When asked to identify the elements, one respondent specifically mentioned "machinery" (the generator), but stated that s/he heard it as they first started out on the trail and that it did not affect their trip. Conclusions cannot be drawn from the survey, but clearly many people who camp at the Pacific Park Campground and use the trail system in the area are not bothered by the sound of the powerhouse generator. Applicable county, state, NFS (although the powerhouse is not on NFS lands), or other standards that might be used to gauge the degree to which noise associated with the powerhouse exceeds suggested or required standards have not been found. If such standards are

discovered before submittal of the Final Study Progress Report, noise associated with the powerhouse will be examined to determine if the noise meets or exceeds such standards.

5.0 DISCUSSION AND CONCLUSION

This section presents the conclusions and recommendations associated with major issues discussed in this report.

5.1 Potential Conflicts with Land Use and Resource Management Goals

5.1.1 Conclusions

- Several of the Project facilities (forebay, dam, spillway, catwalk, intake structure housing, dam laydown and storage area, and some portion of the upper penstock trestle) that are located within the WWNF do not meet the VQO of retention that was assigned to the lands in which they are located. The facilities have been inconsistent since the current Forest Plan was adopted in 1990 and are currently inconsistent.
- Other Project facilities outside the WWNF are consistent with the Wallowa County Comprehensive Plan.

5.1.2 Recommendations

The following are recommended measures to consider for Project facilities located on WWNF land:

- Plant vegetation between the East Fork Trail and the shoreline area near the forebay to improve screening of views of the forebay, dam, spillway, catwalk, dam laydown area, and storage area from people using the trail. Modify the intake structure to make it more attractive and similar in character with the storage shed (cabin) in the laydown area.
- Treat (stain) the timber support members of the upper trestle that are light in color a darker color so that all support timbers are the same color.

These measures will help reduce visual impacts in accordance with USFS policy. They will not make the Project facilities meet a VQO of retention.

5.2 Project Facilities

5.2.1 Conclusions

- Project facilities located on WWNF lands are addressed above.
- Project facilities located outside of the WWNF are not inconsistent with Wallowa County Comprehensive Plan directives, but are not particularly attractive features. Improving the appearance of the most highly visible Project facilities (the powerhouse, substation, fenced yard, and entrance to Pacific Park) will improve the aesthetic quality of the facilities and areas near them.

5.2.2 Recommendations

To improve the appearance of Project facilities (the powerhouse, substation, fenced yard, and entrance to Pacific Park) that are seen from the upper end of the Joseph-Wallowa Lake Highway, the Wallowa Lake Trailhead, and the Little Alps Day Use Area, the following measures are suggested:

- Powerhouse – partially screen this area (and make more attractive) with landscaping along the portion of the fence abutting the Joseph-Wallowa Lake Highway turnaround area.
- Modify or replace chain-link fence on the side abutting the Joseph-Wallowa Lake Highway turnaround area with a more attractive fencing material or, at a minimum, black-coated vinyl chain-link fence (if this option is chosen, replace all of the chain-link fence with black-coated vinyl fencing).
- Add interpretive signage near this facility for the public to read that will explain the history and function of the Wallowa Falls Hydroelectric Project, Pacific Park, the local trail system, and other features.

5.3 Project Operations

5.3.1 Conclusions

- Increases in the minimum flow levels will improve the aesthetic characteristics of the bypass reach in the several areas from where it can be seen by the general public (mostly on PacifiCorp lands along the forebay access road).
- On the sections of the bypass reach that are located in the WWNF the increase minimum flows may be noticed by Forest visitors and slightly improve their experience during the times of years minimum flows would be required.
- Project-generated noise will be addressed when more information is available.

5.3.2 Recommendations

No recommendations made.

6.0 REFERENCES

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Figures



FIGURE A-1
View of Study Area Terrain

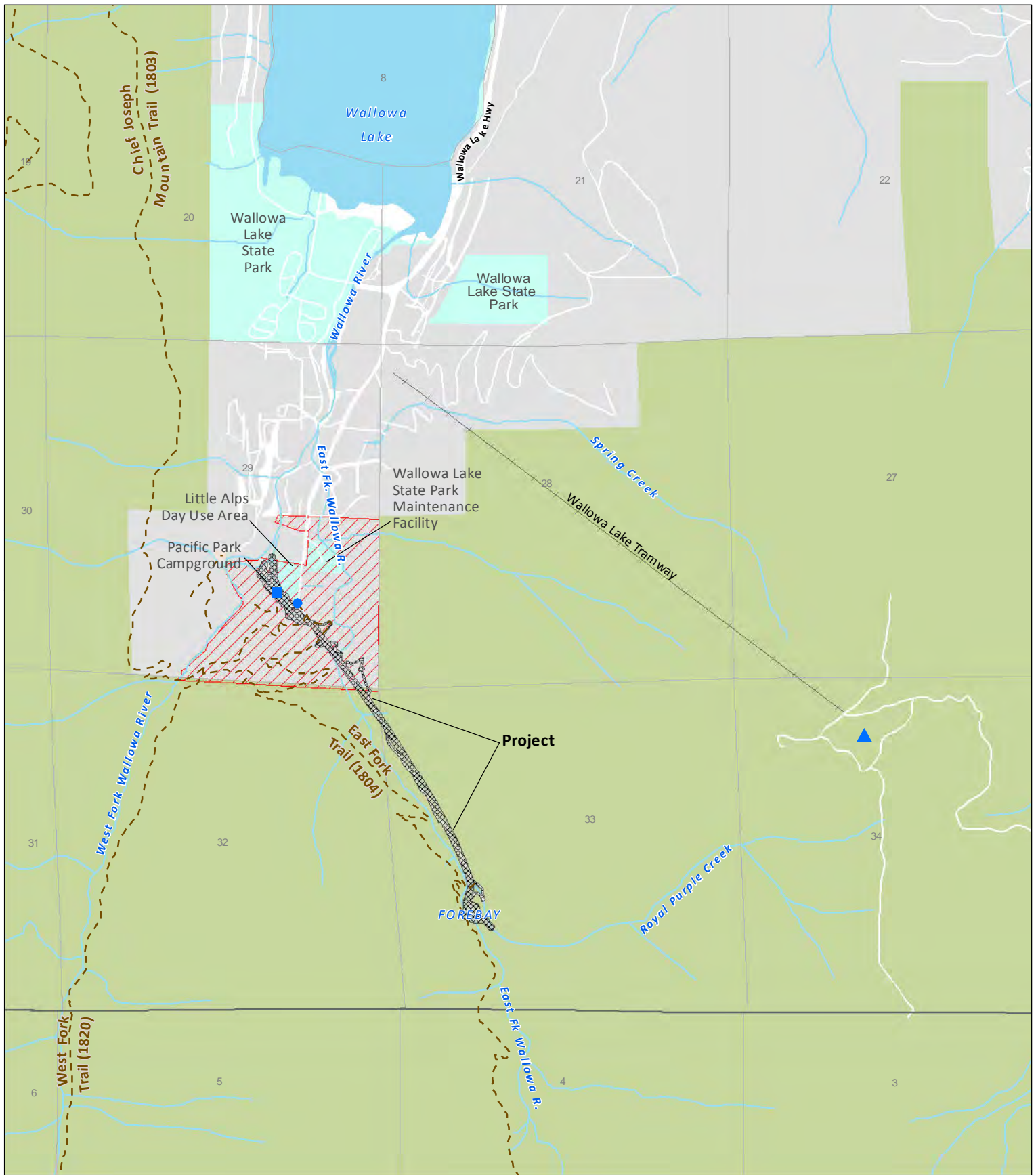


Figure A-2
**Study Area
Overview**



0 1,000 2,000
Feet



Proposed Project Boundary (FERC)

Mount Howard

Wallowa Lake Trailhead (USFS)

Pacific Park Campground Area - PacifiCorp Operated

USFS Trail

Wallowa Lake Tramway

Road (white)

Water

Section

Township Range

PacifiCorp Ownership

PacifiCorp Land Leased to the State of Oregon

Private Ownership

Federal Ownership (U.S. Forest Service)

State Park

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Data are projected in
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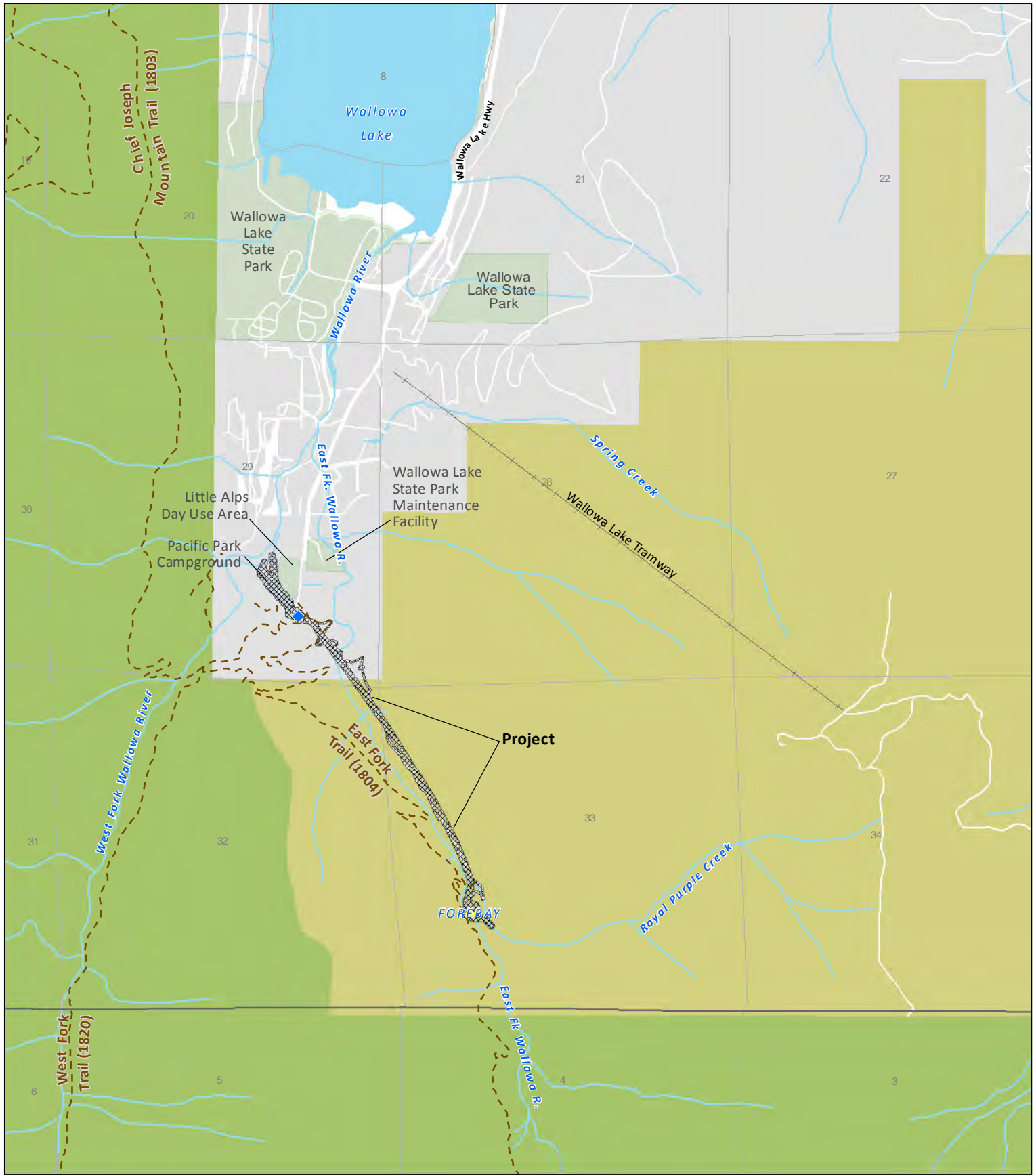


Figure A-3
**Wallowa - Whitman NF
Visual Quality Objective**



0 1,000 2,000
Feet



Proposed Project
Boundary (FERC)

Park

Visual Quality Objective

Preservation

Retention

None

Powerhouse

Forebay

USFS Trail

Wallowa Lake Tramway

Road (white)

Section

Township Range

Water

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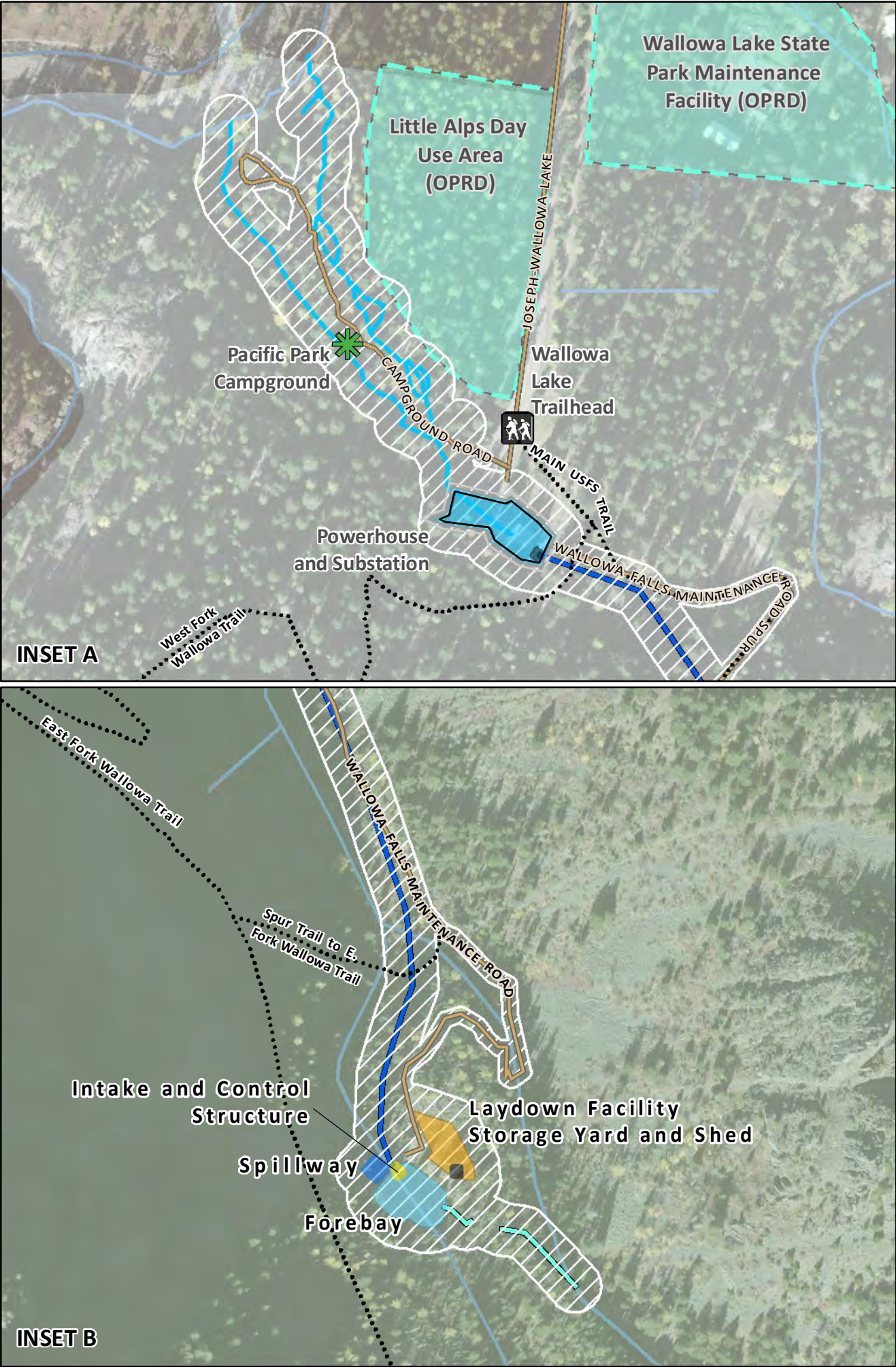
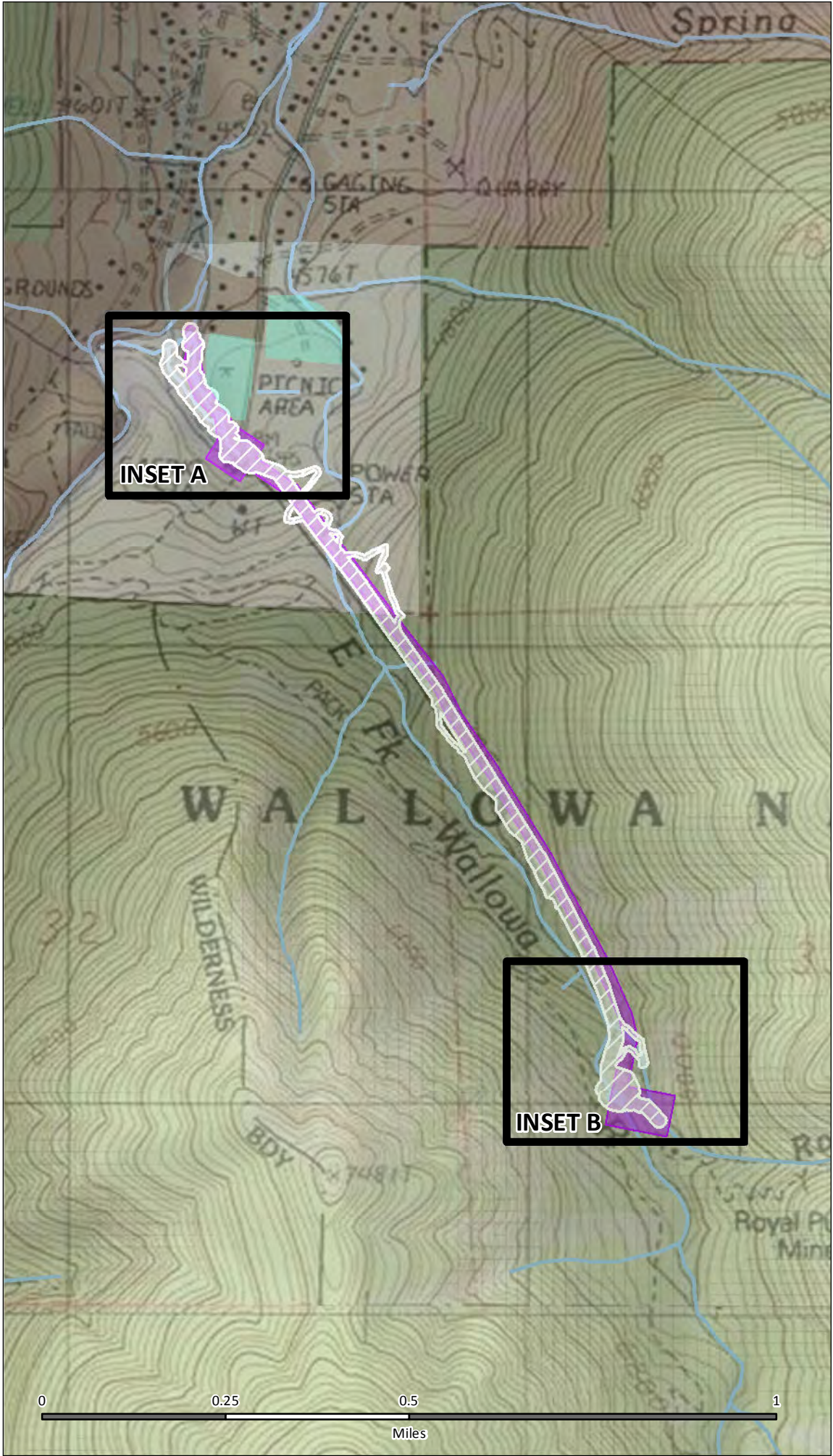
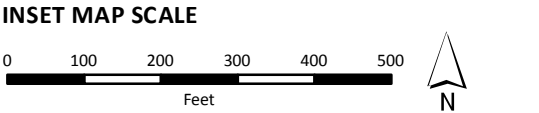


Figure A-4
Project
Facility Locations
Wallawa Falls Hydroelectric Project

- Proposed Project (FERC) Boundary (white)
 - Existing FERC Boundary
 - PacifiCorp Owned Land (white)
 - Boy Scouts of America
 - Wallowa-Whitman National Forest
 - PacifiCorp Owned State Managed¹
- Hydro Facility**
- Penstock
 - Flowline/Pipeline
 - Channel Tailrace
 - Powerhouse
 - Building
 - Intake Control Structure
 - Storage Yard
 - Forebay
 - Spillway
- USFS Trailhead
 - Pacific Park - PacifiCorp Operated
 - Trail
 - Road
 - Water

¹ PacifiCorp land leased to Oregon Parks and Recreation Department (OPRD)



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Appendix A

Photographs of Project Facilities



Photo 1: Royal Purple Diversion Dam



Photo 2: Royal Purple Pipeline



Photo 3: Project Forebay and East Fork Wallowa River Inlet



Photo 4: Project Forebay and Intake Structure



Photo 5: Project Dam, Spillway and Catwalk



Photo 6: Project Spillway, Dam, Catwalk, and Intake Structure



Photo 7: Intersection of East Fork Trail with Project Dam and Catwalk



Photo 8: Project Laydown Area, Storage Yard and Storage Shed



Photo 9: Upper Penstock Trestle and Forebay Access Road Seen from East Fork Trail



Photo 10: Lower Penstock Trestle and Bypass Reach Seen from Forebay Access Road Bridge



Photo 11: Project Forebay Access Road



Photo 12: Project Forebay Access Road and Buried Penstock on Right



Photo 13: Project Powerhouse and Substation from Near Wallowa Lake Trailhead Area



Photo 14: Project Powerhouse and Substation Seen from Joseph-Wallowa Lake Highway Turnaround



Photo 15: Lower Project Side Tailrace Channel in Pacific Park Campground



Photo 16: Lower Project Main Tailrace Channel in Pacific Park Campground



Photo 17: Example of Campsite in Pacific Park Campground



Photo 18: Pacific Park Campground Restrooms

Appendix B

Bypass Reach Flow Comparison

BYPASS REACH FLOW COMPARISON

First Encounter with Bypass Reach on
Wallowa Falls Forebay Access Road



Waterfall Overlook (Sideways View)



Forebay Access Road Bridge Over Bypass
Reach Looking South (upriver)



Forebay Access Road Bridge Over Bypass
Reach Looking North (downriver)



August 22, 2012
8 cubic feet per second



August 21, 2012
5 cubic feet per second