



**REVIEW OF APPLICATION FOR LIHI RECERTIFICATION
OF THE
FALLS CREEK HYDROELECTRIC PROJECT**

**FERC Project No. 6661, Exempt
Falls Creek, Cascadia, Oregon**

**June 18, 2018
Maryalice Fischer, Certification Program Director**

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FINAL REVIEW OF APPLICATION FOR LIHI CERTIFICATION OF THE FALLS CREEK HYDROELECTRIC PROJECT

This report provides final review findings and recommendations related to the recertification application submitted to the Low Impact Hydropower Institute (LIHI) by Frontier Technology Inc. (Applicant) for recertification of the Falls Creek Hydroelectric Project (the Project, LIHI No. 4). The final recertification application was filed on May 17, 2018 and is subject to review under the current 2nd edition LIHI Handbook (March 2016).

I. INTRODUCTION

The Falls Creek Project (FERC Exempt Project No. 6661) is located on Falls Creek, a tributary to the South Santiam River, and about 25 miles east of Sweet Home, Oregon in the Willamette National Forest (Figures 1 and 2). The Project was completed in 1984 as a run-of-river project that generates power from a small quantity of water and very high head. In 1986, the Falls Creek Project won the Oregon Governor's Energy Award due to its low environmental impact relative to its energy production. The National Resources Defense Council cited the Falls Creek Project as a model facility in its Spring 1985 magazine, "The Amicus Journal." The Project was an early participant in LIHI and was initially certified in 2002 with LIHI Certificate No. 4, and was subsequently recertified in 2007 and 2012. The current recertification application was filed under the 2nd Edition LIHI Handbook. The most recent certification expired on June 3, 2017 and was extended several times to allow time for the Applicant to gather supplemental information, and to await action by the State of Oregon on renewal of the state's water right license. The current LIHI term expires on July 31, 2018.

II. PROJECT LOCATION, AND SITE CHARACTERISTICS

Falls Creek originates in a meadow and flows downstream to the Falls Creek Project's diversion structure at river mile 2.35. The diversion is 5' in height and creates a reservoir that is 105 feet wide by 207 feet in length and up to 5 feet deep. The reservoir overflows through two sets of screens. The primary screens consist of three self-cleaning 8-foot-long panels with wedge wire O'-Gee screens. One cubic foot per second (cfs) of water passes down a channel at the base of the screens to discharge into the original Falls Creek stream channel. This bypass flow also flushes "trash" material from the screens back into the stream. The water that enters the screen chamber discharges into a 30-inch penstock that is 7,380 feet in length, almost all of it buried. The penstock narrows to 20-inches as it enters the powerhouse. The overall drop is 2,381 feet down the mountainside to the powerhouse on the edge of the South Santiam River. The entire length of pipe is buried and covered with natural vegetation thus concealing it from sight.

Falls Creek is a small stream with average stream flow of 16 cfs. Stream flow is frequently below 1 cfs during the months of July, August, September and October. Since the Project needs a minimum of approximately 2 cfs to operate and must release 1 cfs into the stream per its permit requirements with the Oregon Water Resources Department and as proposed in the

original FERC exemption application, the Project does not operate during low water months and uses this time-period for routine and preventative maintenance. Most of the water used for power generation comes from rainfall in the fall and winter and snow runoff in the spring. The amount of stream flow during these periods is frequently greater than 50 cfs, and occasionally exceeds 200 cfs. The Falls Creek Project draws about 26 cfs of this flow.

From the point where the water is diverted, Falls Creek continues to run 2.3 miles further to the South Santiam River. This section of the creek is very steep, containing no anadromous fish (salmon or steelhead). Along this stretch, only a few trout live in pools formed by falls. During operation of the Project, sufficient water remains in Falls Creek beyond the diversion to maintain these pools.

When the water reaches the powerhouse, it creates a pressure of approximately 1,050 psi. The single Gilkes 34-inch twin-jet horizontal Pelton wheel and generator rotates at 1,200 RPM and generates 4.96 megawatts of power (MW) at full load. The generator output is controlled by the amount of water entering the diversion structure at the top. The greater the quantity of water that enters the intake structure, the higher the generator output. The power plant operates using a GE Fanuc 90-30 PLC control system with a head-end interface computer system called Lookout. The plant can be monitored, and re-started if necessary, via remote control. Power is generated at 4,160 Volts, then transformed to 20,800 Volts for transmission via PacifiCorp's local distribution lines. Power is sold to PacifiCorp under a 35-year power purchase agreement.

Tailwater from the Project discharges into a steel culvert with a metal grate on the downstream end to prevent fish access. The water then travels through a small chute of exposed bedrock and discharges into the South Santiam River near river mile 57.5.

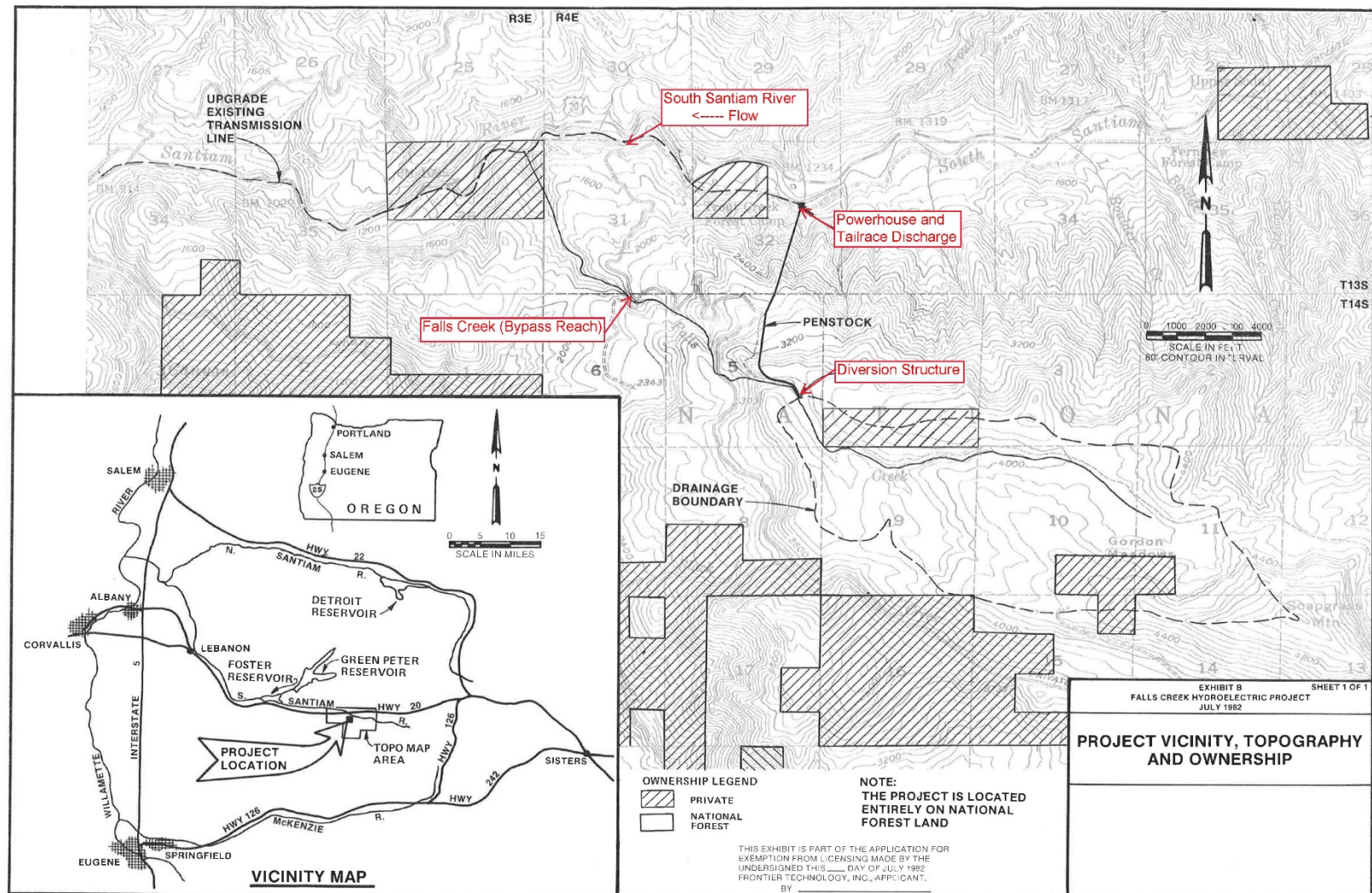


Figure 1: Project Location and Layout

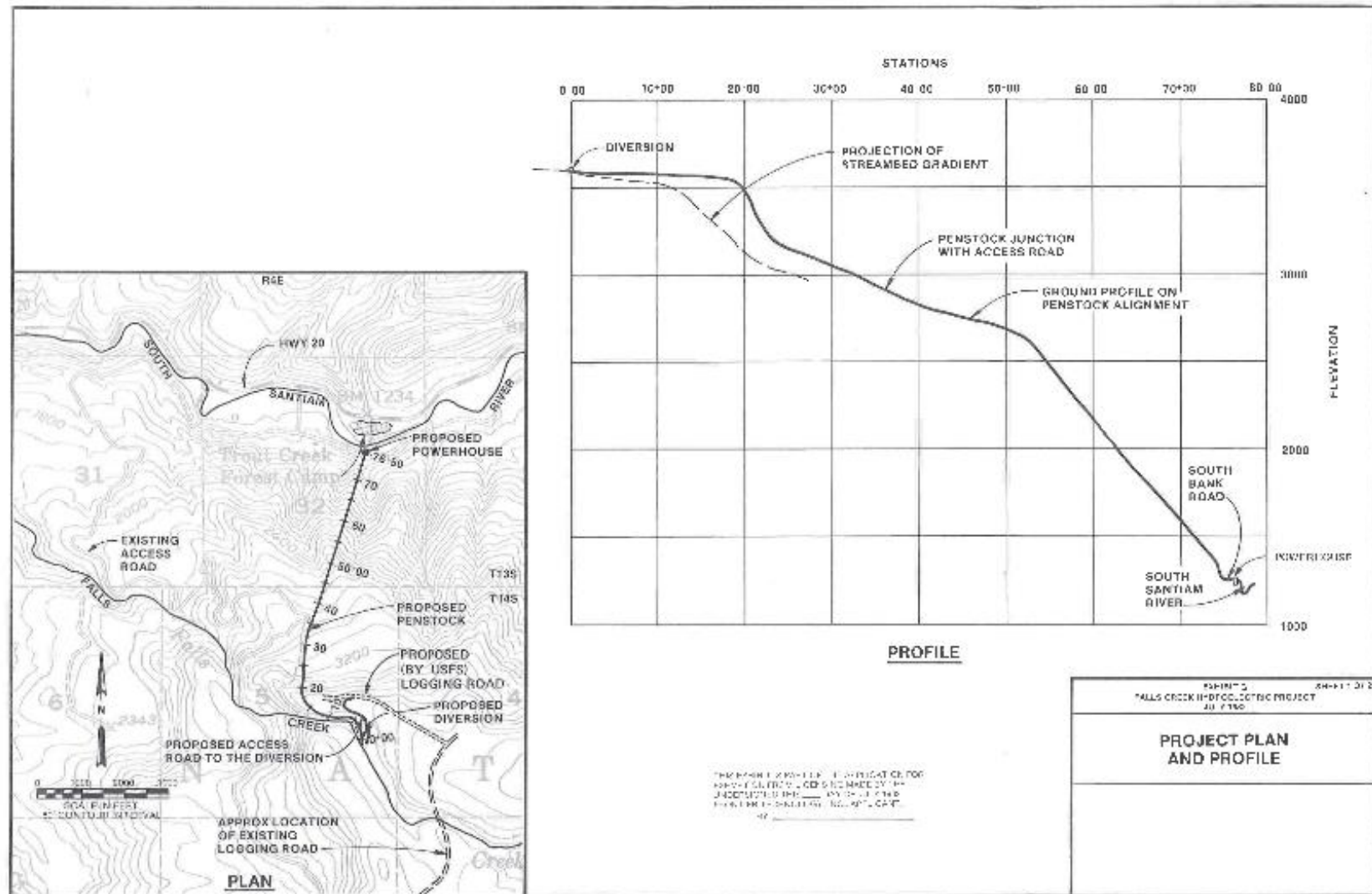


Figure 2: Project Topography and Elevation Cross Section

III. REGULATORY AND COMPLIANCE STATUS

The original FERC Order granting exemption was issued March 4, 1983. An Order amending the exemption was granted on December 14, 1984 which allowed for an increase in maximum capacity of that originally proposed. One exemption condition (Article 6) allows for future review of the Project by FERC, if needed, to maintain consistency with the terms and conditions of the regional fish and wildlife program developed under the Pacific Northwest Electric Power Planning and Conservation Act. To date no such additional reviews have been necessary.

The Project is located within the Willamette National Forest and subject to a US Department of Agriculture Forest Service (USFS) Special Use Permit (SUP) originally issued March 27, 1985 and most recently amended in 2006. The current SUP expires on December 31, 2025 and contains conditions related to use and access of National Forest lands.

The Project is also subject to Oregon Water Resources Department's (OWRD) hydroelectric license for water use (HE410) originally granted on March 14, 1984 for a term of 35 years. That license was recently reissued (proposed final order issued April 11, 2018) for a term of 40 years with 24 technical conditions, several of which apply to LIHI Criteria described as applicable below (see Application, Attachment A). As of June 15, 2018, the state indicated that no comments had been received on the Proposed Order and it would be finalized with no changes.

A review of the FERC elibrary found no documents related to the LIHI Criteria since the last LIHI recertification in 2012.

IV. RECERTIFICATION STANDARDS

On February 1, 2017 LIHI notified the Applicant of upcoming expiration of the Low Impact Hydropower Institute certification for the Project on June 3, 2017. The letter included an explanation of procedures to apply for an additional term of certification under the 2nd Edition LIHI Handbook, including the new two-phase process starting with a limited review of a completed LIHI application, focused on three questions:

- (1) Has there been a material change at the certified facility since the previous certificate term?
- (2) Has there been a change in LIHI criteria since the certificate was issued?
- (3) Is there any missing information from the application?

If the answer to any question is "Yes," the application must proceed through a second phase, which consists of a more thorough review of the application using the LIHI criteria in effect at the time of the recertification application.

There were no material changes at the facility since the last recertification in 2012. But the letter to the Applicant noted that there was missing information in the initial application and,

"because the new Handbook involves new criteria and a new process, the answer to question two for all projects scheduled to renew in 2016 and beyond will be an automatic 'YES.' Therefore, all certificates applying for renewal post 2016 will be required to proceed through both phase one and phase two of the recertification application reviews."

The Stage I Review was completed in July 2017, noting deficiencies and areas to resolve in an updated Stage II application. Multiple extensions of the certification term were issued, extending the current certificate to July 31, 2018 to allow time for the Applicant to supply missing information. The 60-day public comment period was initiated on January 30, 2018 with one comment letter on the application being received by LIHI. Additional information was provided in a second revision of the application which was submitted to LIHI on May 17, 2018 and this report comprises the final Stage II review.

V. PUBLIC COMMENTS RECEIVED BY LIHI

The recertification application was publicly noticed on January 30, 2018. Oregon Department of Fish and Wildlife (ODFW) submitted a comment letter on February 8, 2018 in support of LIHI recertification (Appendix A), specifically related to Criterion A, C, D, and F. No other public comments were received by LIHI during the notice period, which ended on March 31, 2018. The Applicant also provided email communications from OWRD in support of renewal of the state water right license. Given the recent positive communications between the applicant and relevant agencies, the reviewer did not need to contact agencies separately.

VI. LIHI CRITERIA REVIEW AND RECOMMENDATIONS

The Applicant correctly selected three Zones of Effect (ZOE):

Zone 1 includes the diversion structure and the impoundment. This zone is a small pond created by the diversion, approximately 105 feet by 207 feet (about 1/2 acre) and varying depths up to 5 feet (Figure 3). Zone 1 runs from the diversion to approximately 207 feet upstream of the diversion. This zone begins at approximately river mile 2.35 on Falls Creek with the diversion structure. The delimiting structures of Zone 1 are a 5' height 30' length weir and an 18" square sluice gate (Figure 4). The habitat upstream of the project's impoundment is unaffected by the project. These upper reaches of Falls Creek that are not affected by the project have a moderate gradient, a good pool to riffle ratio, good trout spawning gravels and ample fish cover. There are three bays on the diversion structure, pictured above. Each bay has an O-Gee screen on top that allows passage of intake water for the penstock but excludes fish and debris which are washed over its surface into a trash rack at the base of the screens, or into the forebay area. There are also two vertical screens at the bottom of each bay that screen the head level pond and allow for fluctuations in the head level. The vertical screens, six (6) in total, are described in the CH2M Hill original "as built" drawings as 8' 3" long by 2' 1/2" high, made of stainless steel wire cloth. The intake screens include a punch plate screen with 1/8-inch diameter holes and wedge wire screens with gaps ranging from 0.08 inches to 0.4 inches wide.



Figure 3: Impoundment.



Figure 4: Diversion structure, showing weir and 1 cfs minimum flow discharge.

Zone 2 is the bypass reach, which begins immediately downstream of the diversion structure. It is a 2.4-mile bypass that ends when Falls Creek joins the South Santiam River, at approximately river mile 56. Within 30 feet from where Falls Creek enters this bypass reach, it immediately flows under large boulders and then drops out of sight underground in a very steep grade (Figure 5). Falls Creek is characterized by a steep gradient, numerous small falls (most over 15 feet in height) and plunge pools with poor trout spawning gravels and little cover. Ground water spring and seep contributions along the lower reaches add to the minimum required 1.0 cfs flow so that the discharge at the mouth of Falls Creek is maintained at or above 2.0 cfs.



Figure 5: Summer – Falls Creek just downstream from river mile 2.4, where the creek flows underground.



Figure 6: Falls Creek entering South Santiam River at FS Road 3024 at high water, river mile 56.

Zone 3 includes the tailwater or tailrace, with the water exiting the powerhouse through a screen designed to prevent fish passage, and continues through a man-made landscaped concrete channel that looks like a stream. The tailrace is less than 100 yards long and the water enters the South Santiam River, near river mile 57.5 approximately 2 miles upstream of the bypassed reach discharge location. The tailrace is generally dry for four months out of the year, since the Project does not operate, on average, from approximately July 10 to November 1.



Figure 7: Powerhouse discharge through the concrete channel.

The Applicant selected the following standards for each of the three ZOE's, which will be discussed together below.

Criterion		<i>Alternative Standards</i>				
		<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>Plus</i>
A	Ecological Flow Regimes		X			
B	Water Quality	X				
C	Upstream Fish Passage	X				
D	Downstream Fish Passage	X				
E	Watershed and Shoreline Protection	X				
F	Threatened and Endangered Species Protection		X			
G	Cultural and Historic Resources Protection		X			X
H	Recreational Resources	X				

A: Ecological Flow Regimes

The project is operated in a run-of-river fashion when sufficient inflows are available above the required 1 cfs minimum flow. Therefore, Zones 1 and 3 meet Standard A-1 (not applicable/de Minimis), even though the Applicant selected Standard A-2 (Agency Recommendation), which could also be appropriate for Zone 1 since the pool is temporarily lowered for a day or two for maintenance and repairs during the summer when the powerhouse is not operating. If there has been major damage to the diversion structure, the forebay elevation may be lowered for longer periods of time. During these times, all Falls Creek natural inflows are spilled into the bypassed reach. The 2018 OWRD Proposed Final Order recommends that the forebay be maintained at full pool, as inflow allows, from early summer through early fall to maintain low-flow conditions for the benefit of wildlife resources which may inhabit the area.

In Zone 2, Standard A-2 is satisfied, based on the review of the information provided. The 1 cfs minimum flow was originally proposed in the FERC exemption application and was based on an analysis of daily stream flows over a 20-year period which showed natural inflows in July, August, September and October to range from 1 to 4 cfs at the point of diversion. This minimum flow was affirmed by the Oregon Department of Fish and Wildlife at that time. Around the time of the FERC exemption application (p. E-9), habitat surveys identified pool and riffle habitat in Falls Creek and the presence of trout and food organisms such as stoneflies and mayflies, but little potential spawning habitat except for in some parts of the upper reach. Little to no potential for anadromous fish production was found upstream of the lowest 0.1 mile of Falls Creek due to natural waterfalls.

The 2018 OWRD Proposed Final Order for reauthorization of the Project's state water right for hydropower also re-affirms that the current 1 cfs minimum flow is adequate, and this serves as the most recent agency recommendation, with the same scientific/technical basis as used in the original FERC license exemption application. That order also notes poor fish habitat due to steepness and substrate consisting mainly of bedrock and large boulders.

The required minimum flow is monitored via Falls Creek's diversion structure which contains a self-regulating orifice that was incorporated into the weir to provide the 1 cfs flow past the point of diversion and screens at the project's intake, as shown in the photograph below. The opening is designed to pass 1 cfs. The cleaning trough has a carrying capacity of 1 cfs. Therefore 1 cfs flows through into Falls Creek. Water greater than 1 cfs spills into the forebay. In its letter of November 24, 1982, the Department of Fish and Wildlife set the following condition for minimum flow: "The Project owner shall continuously maintain a streamflow of at least one cubic foot per second in the natural channel of Falls Creek, from the Project intake at stream mile 2.35 downstream to the confluence of Falls Creek with the South Santiam River. The specified flow shall be measured and maintained in the natural channel of Falls Creek at the Project intake by means of a calibrated, self-regulating weir installed by the project owner."

Based on the information provided, this review concludes that the Project continues to satisfy Criterion A.

B: Water Quality

The Applicant selected Standard B-1 (not applicable/ de Minimis) for all ZOE's and this review concludes that the Project meets that standard and Criterion B, based on the information provided. Falls Creek is not listed as impaired according to the latest Oregon Impaired Waters List (from 2012) for streams within the South Santiam basin (there is another stream named Falls Creek located in the Lower Columbia basin). However, there is a Willamette TMDL and a related Water Quality Restoration Plan in place for temperature that includes the South Santiam River. That TMDL is managed in part by the Willamette National Forest. A November 8, 2017 letter of support from Oregon Department of Environmental Quality (ODEQ) included on pages 30-31 of the application corroborates the Project's compliance with quantitative water quality standards. There are no other water rights of record and no known water uses on Falls Creek above or below the diversion. The 2018 OWRD Proposed Final Order reaffirms the lack of impact by the Project on water quality, and states: "No significant temperature-related problems have been identified nor are suspected...As the entire penstock is buried, there is little opportunity for significant water temperature-related problems".

C: Upstream Fish Passage

The Applicant selected Standard C-1 (not applicable/de Minimis) for all three ZOE's. Fish species that are or may be currently or historically present in the project vicinity include: resident Brook, Rainbow and Cutthroat trout, and anadromous (and some potential resident populations of) Chinook salmon and Steelhead trout. At the time of the FERC exemption application, the USFWS found no anadromous species in Falls Creek, nor any spawning grounds. At that time ODFW found some hatchery trout at the mouth of Falls Creek, some wild Rainbow and Brook trout in the creek. More recent surveys conducted in 2017 and summarized in the OWRD Proposed Final Order found only two Brook trout in the diversion pool (Zone 1) and no trout in the bypassed reach (Zone 2) or the tailrace area (Zone 3). In the 2018 OWRD Proposed Order, unspecified species of "native migratory fish" were found in the lowest portion of the Creek and Steelhead rearing habitat was observed in the lowest 0.1 mile above the confluence with the South Santiam River.

In Zone 2, the 2.35-mile reach of Falls Creek below the diversion has an extreme gradient, is generally inaccessible by fish and contains numerous falls that prevent anadromous fish migration upstream. Falls Creek does provide habitat for resident trout throughout its length but no trout or other species, including migratory species, were found in the 2017 survey in Zone 2. Winter steelhead and spring-run Chinook salmon both occur in the South Santiam River and in the very lowest portion of Falls Creek where the gradient is not as steep. There is rearing habitat for steelhead in the lowest 0.1 mile, but upstream migration is limited by natural falls at that point so there is very little habitat available overall.

In Zone 3, no fish were found in the 2017 survey. However, resource agencies had recommended at the time of Project construction that a screen be installed in the tailrace to prevent fish entering from the South Santiam River from trying to swim upstream into the

tailrace pipe. A screen was installed and continues to be in use. No other recommendations have been issued. Even if fish were able to enter the powerhouse, the penstock is too long and the gradient too steep to allow for successful passage into the diversion pool. This is the same steep gradient in Falls Creek that also precludes upstream passage through the bypassed reach. No mandatory fish passage prescriptions have been issued by resource agencies. Therefore, this review concludes that the Project satisfies Criterion C since it is natural features and not the Project that pose barriers to upstream passage.

Based on the information provided, this review concludes that the Project continues to satisfy Criterion C.

D: Downstream Fish Passage

The Applicant selected Standard D-1 (not applicable/de Minimis) for all three ZOE's and this review concludes that the Project continues to meet that standard and Criterion D, based on the information provided. As noted above, there are no migratory species currently or historically present above the natural fish barrier that would require downstream passage at the project. The very limited number of native trout found in the impoundment could possibly move downstream and the safety of downstream passage from the diversion (Zone 1) is addressed in the OWRD Proposed Final Order that requires that the fish screening be maintained and kept free of debris and the provision for 1 cfs minimum flow into the bypassed reach. No mandatory fish passage prescriptions have been issued by resource agencies.

E: Shoreline and Watershed Protection

The Applicant selected Standard E-1 (not applicable/de Minimis) for all three Zones. There is no requirement for a shoreline management plan for the Project which is located entirely on National Forest lands. The Project is outside of federally designated Wilderness Areas. While there was existing access to the powerhouse site and to points along the penstock route, access at the diversion had to be developed during construction. In Zone 1, the diversion structure impounds a small pool approximately 105 feet wide by 207 feet in length and varying depths up to 5 feet. As noted above, the 2018 OWRD Proposed Final Order recommends that the forebay be maintained at full pool, as inflow allows, from early summer through early fall to maintain low-flow conditions for the benefit of wildlife resources which may inhabit the area.

The diversion structure, pond, penstock, and powerhouse are covered by the Forest Service SUP. All activities on the 6.5 acres of Project lands are authorized under the USFS SUP, including an Operations and Maintenance (O&M) Plan (Exhibit A of the SUP¹). The O&M Plan includes provisions for vegetation management, road maintenance, and maintenance of signage. The land around the Project includes existing Forest Service roads and is managed for

¹ The SUP was most recently updated in 2006 and submitted with the revised LIHI application.

timber resources in locations where steepness does not preclude cutting. There are no other shoreline or watershed protection standards required of the Project.

As part of Project construction, the powerhouse is circled by an earthen berm, planted with shrubbery and trees for camouflage, to deaden noise and prevent it carrying across the river to campers using the facilities at the National Forest's Trout Creek Campground. The Old Santiam Wagon Road, an Oregon historical roadway, runs directly in front of the powerhouse. Access to this roadway is behind a locked Forest Service gate and not accessible by the public, other than by foot. The Project's SUP agreement with the Forest Service dictates maintenance, repair, and use of this historic roadway.

No part of the project area is designated by USFS as having any significant ecological value. In their September 1982 comment letter on the FERC exemption application, Oregon Department of Fish and Wildlife stated: "With respect to land management, careful attention should be given in the routing and location of access roads, penstock and other project facilities to avoid habitat with local significance to fish and wildlife; e.g., streams, areas of riparian vegetation, marshy areas and seeps, and rock outcroppings. Such areas, although usually minor in extent, are necessary for maintaining local abundance and diversity of wildlife."

Based on the information provided, this review concludes that the Project continues to satisfy Criterion E.

F: Threatened and Endangered Species

The Applicant selected Standard F-2 (Finding of No Negative Effect) for all three ZOE's in the Standards Matrices but in Section III. B.2.6 of the recertification application, selected F-3 (Recovery Planning and Action). The February 8, 2018 letter from ODFW also indicates that the Project has no effect on threatened and endangered species, implying Standard F-2 but this review concludes that Standard F-3 is the appropriate Standard.

Three state or federal endangered or threatened species are or may be present within the Project area. Winter Steelhead and spring-run Chinook salmon are federally listed as threatened in the Upper Willamette River, but not separately state listed. Both occur in the South Santiam River. The lower 0.1 miles of Falls Creek provides potential rearing habitat for Steelhead, but they cannot pass upstream of the falls located there. There is a joint state/federal Upper Willamette River Conservation and Recovery Plan that encompasses both species in the region that includes the project.² This Recovery Plan serves as both a recovery plan under the Federal Endangered Species Act (ESA) and as a State of Oregon conservation plan under Oregon's Native Fish Conservation Policy (NFCP). There are no incidental take permits or Biological Opinions in effect for the Project. The Project is in compliance with the

² <https://repository.library.noaa.gov/view/noaa/15981>. Note that the "Falls Creek" listed in the document is not the same Falls Creek that the project is located on.

recovery plan in that there are no provisions in the plan that are applicable to the Project or its operations.

The Northern Spotted Owl is also present in the Project area. This species is state and federally threatened and is subject to a federal recovery plan. Item I of the Project's current Special Use Permit states that locations of areas needing special measures for protection of plants or animals listed as threatened or endangered or sensitive may be shown on a separate map within the SUP; however, no map is included, nor is there any mention of specific restrictions, other than to remove "non-native plants" in Project areas. A former USFS Regional Forester had verbally requested in 2004 that noise levels be kept down in spring through June when nesting is taking place and the Applicant stated that they continue to honor that request. A 20-foot corridor of trees was removed for the construction of the penstock, then recovered. Potential impacts to Northern Spotted Owl were not assessed during construction because the species was not listed at the time. The existing penstock corridor is maintained in a natural vegetative state with herbaceous ground cover and saplings and fallen logs so as not to demarcate the corridor.

All threatened and endangered species are managed and monitored under the Willamette National Forest Plan and periodic monitoring reports that are developed as part of that Plan³ and subject to conditions in the SUP.

Based on the information provided, this review concludes that the Project continues to satisfy Criterion F.

G: Cultural and Historic Resources Protection

The Applicant selected Standard G-2 (Approved Plan) for all three Zones and this review concludes that the Project continues to meet that standard and Criterion G, based on the information provided. There are no specific requirements regarding cultural resource protection within the Project's FERC exemption. Appropriate surveys and research by qualified anthropologists were conducted prior to construction as part of the exemption application and no archaeological sites were found. The penstock crosses under the Old Santiam Wagon Road, an historic road eligible for listing on the National Register of Historic Places at the time of construction and the road was restored once construction was complete. This was accepted by the Oregon State Historic Preservation Office as adequate mitigation, as indicated in the Project's FERC exemption application.

Since the time of construction, the historic roadway was listed on the National Register of Historic Places in 2010. Remnants of the Santiam Wagon Road have been preserved in the Willamette National Forest and provide the longest stretches (with very high integrity) of any historic wagon road in western Oregon. The O&M Plan contained in the Project's SUP

³ https://www.fs.usda.gov/detail/willamette/landmanagement/planning/?cid=fse_030883

agreement with the USFS constitutes an approved plan, and dictates the maintenance methods the Project must employ to maintain the integrity and authenticity of this historic roadway.

The Applicant also requested the PLUS standard for this Criterion for the Project as a whole. For the last 25 years, Project staff host area school children on a creative, fun tour of the Project, hydropower in general, environmental resources, energy conservation, and the history of the local area. See https://lebanon-express.com/news/local/power-play-lebanon-fourth-graders-tour-hydroelectric-plant/article_ef17315f-089d-5777-b119-3a5d7c8d6b79.html for recent activity.

Project staff also conduct tours and campfire presentations for visitors to the nearby National Forest campground (see Section H below).



Figures 8 and 9: Groups of school children on educational tours at the Project.

This review includes a recommendation to grant the Project, the PLUS Standard for Criterion G. The Applicant has a history of proactive engagement with the community to enrich educational opportunities that are unique and relevant to the Project, to the LIHI Criteria, and more broadly, to foster appreciation of the importance of natural, cultural and historic resources preservation.

H: Recreational Resources

The Applicant selected Standard H-1 (not applicable/de Minimis) for all three Zones and this review concludes that the Project continues to meet that standard and Criterion H, based on the information provided.

No specific recommendations for recreational access were issued as part of the Project's FERC exemption. However, the Project is located on Forest Service lands and a campground is located across the river from the powerhouse. The Project's Special Use Permit with the USFS provides conditions guiding the use of Forest Service lands and specific requirements for the Project, namely:

- Buildings should be painted a drab forest color to make the buildings less obtrusive to wagon road travelers and campers at Trout Creek campground.
- Shiny metallic surfaces (antennae) should be painted or dulled to minimize their reflective glare.
- Native understory vegetation should be maintained on the north and east sides of the powerhouse to create visual screens from the campground across the South Santiam River and to soften the buildings' edges and solid color continuity.

There are no water-based recreational activities on Falls Creek to be impacted, because of the steep slope of the creek. The Applicant reported that their conversations with the Forest Service note that Project staff are very agreeable to giving tours and providing campfire presentations at the campground, describing the Project. Although some noise can be heard from the powerhouse during high flow periods, the campground's peak season (July-August) generally coincides with when the Project is off-line, resulting in minimal impacts to recreational access. The only access along the Old Santiam Wagon Road is by foot traffic as the USFS maintains a locked gate on this section of roadway to eliminate traffic to an Elk Reserve located on land next to the powerhouse facility.

VII. RECERTIFICATION RECOMMENDATION

Based on the initial reviewer's Stage I report, additional information provided in Stage II, and the final revised recertification application received from the Applicant, and the results of this review, I recommend that the Project be recertified for a term of eight (8) years which includes a three-year PLUS Standard for cultural and historic resources protection measures.

APPENDIX A – RELEVANT AGENCY AND APPLICANT COMMUNICATIONS**ODEQ Support Letter**

Oregon

Kate Brown, Governor

Department of Fish and Wildlife
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17330 SE Evelyn Street
Clackamas, OR 97015-9514
(971) 673-6000
(971) 673-6070
odfw.com

February 8, 2018

Low Impact Hydropower Institute
329 Massachusetts Avenue, Suite 2
Lexington, MA 02420

Via Electronic Mail



Subject: Comments for Low Impact Hydropower Institute (LIHI) Recertification of Falls Creek Hydroelectric Project

The Oregon Department of Fish and Wildlife (ODFW) is writing to express our support for recertification of the Falls Creek Hydroelectric Project operation by the LIHI. This letter responds to the following LIHI criteria: stream flow, upstream and downstream fish passage, and T&E species.

The Falls Creek Hydroelectric Project (Project) is required to bypass a minimum flow of 1 cfs. A self-regulating orifice incorporated into the weir continues to provide that flow and has been functional since the initial startup of the Project. In the wet/high flow time of the year water in excess of Project capacity continues to flow down Falls Creek. Natural flow typically falls below 1 cfs in the summer, at which time the Project shuts down until higher flows return once again in early fall. ODFW is satisfied that stream flows below the Project maintain habitat for fish and wildlife.

Native migratory fish are not present nor were historically present at or upstream from the diversion weir. Upstream fish passage therefore is not required for the Project. For downstream fish passage the Project continues to maintain a fish screen over the diversion to prevent fish migration downstream through the Project diversion.

Within the vicinity of the Project both Upper Willamette Winter Steelhead and Spring Chinook Salmon are listed as "Threatened" under the Federal Endangered Species Act and are present in the South Santiam River. The lower 0.1 miles of Falls Creek provides Winter Steelhead juvenile rearing habitat and that habitat is maintained by required flows. The Project is not thought to impact either species. The federally listed Northern Spotted Owl is also present in the Project area, but is unaffected by Project operations.

In closing, ODFW appreciates the opportunity to provide input that supports the recertification for the Falls Creek Hydroelectric Project by LIHI. Should you have any questions to these comments please do not hesitate to contact me.

Sincerely,

John Zauner
North Willamette Hydropower Coordinator
971-673-6041

Cc (via electronic mail):
Elise Kelley
Ken Homolka