REVIEW OF APPLICATION:

THE MIDDLE FORK IRRIGATION DISTRICT HYDROELECTRIC FACILITY

FOR CERTIFICATION BY THE LOW IMPACT HYDROPOWER INSTITUTE

Prepared by Michael J. Sale[1]

May 7, 2018

I. INTRODUCTION

The Middle Fork Irrigation District (MFID) Hydroelectric Project ("Project" or "facility") is owned and operated by Middle Fork Irrigation District, a non-profit water distribution company that distributes water from 3,250 acres to approximately 400 water users in their area. The Project was exempted by the Federal Energy Regulatory Commission (FERC or Commission) on April 6, 1984 with FERC Project No. P-4458. This application for Low Impact Hydropower Institute (LIHI) Certification was made pursuant to the 2016 LIHI Handbook 2nd Edition guidelines. The MFID is seeking LIHI Certification of their Project to inspire a culture of environmentally responsible hydropower. The mailing address of MFID is 8235 Clear Creek Rd., P.O. Box 291, Parkdale, Oregon, 97041.

II. PROJECT'S GEOGRAPHIC LOCATION

The MFID Project is located near the town of Parkdale, Oregon, an unincorporated community in Hood River County, Oregon (see Figure 1). Locally, the area is described as the upper Hood River Valley. The Project was built by the MFID, a District formed in 1921 to meet the irrigation needs of the agricultural community in the upper Hood River Valley. Geographically, the Project is located northeast of Mt. Hood, and Project water flows from District points of diversion, northeast towards the Columbia River in Hood River, Oregon. The Hood River is in north central Oregon and joins the Columbia River 22 miles upstream of the Bonneville Dam. The Hood River subbasin includes the towns of Odell, and the City of Hood River. Agriculture is the leading industry in the Hood River Valley.

III. PROJECT AND IMMEDIATE SITE CHARACTERISTICS

Flows into the Project begin at Laurance Lake, which has a wetted surface area of 52.8 acres and a shoreline of 1.6 miles. Laurance Lake, also known as Clear Branch Reservoir, is impounded by the 110-foot-high Clear Branch Dam. The primary purpose of Laurance Lake is to impound water as an irrigation reservoir on the Clear Branch of the Middle Fork of the Hood River. An additional authorized purpose of Laurance Lake in the Natural Resource Conservation Service (NRCS) watershed workplan is fisheries development. Laurance Lake lies in a heavily forested valley with steep ridges on both sides and Mt. Hood to the south. The lake and its drainage basin are entirely within the Mount Hood National Forest. The reservoir supports an irrigation system that distributes water to nearly 6,400 acres of high value crop land in the upper Hood River Valley (Figure 1).

[1] This report was substantially developed by Mr. Sale, and completed by Maryalice Fischer, LIHI Certification Program Director in Mr. Sale's absence.

Three small powerhouses were added to the MFID's Project pre-existing irrigation distribution system in the mid-1980s. Combined, the three hydro facilities have water rights of up to 40 cubic feet per second (cfs) with specified portions of that water to from the Clear Branch Dam at Laurance Lake, the Coe Branch and the Eliot Branch.

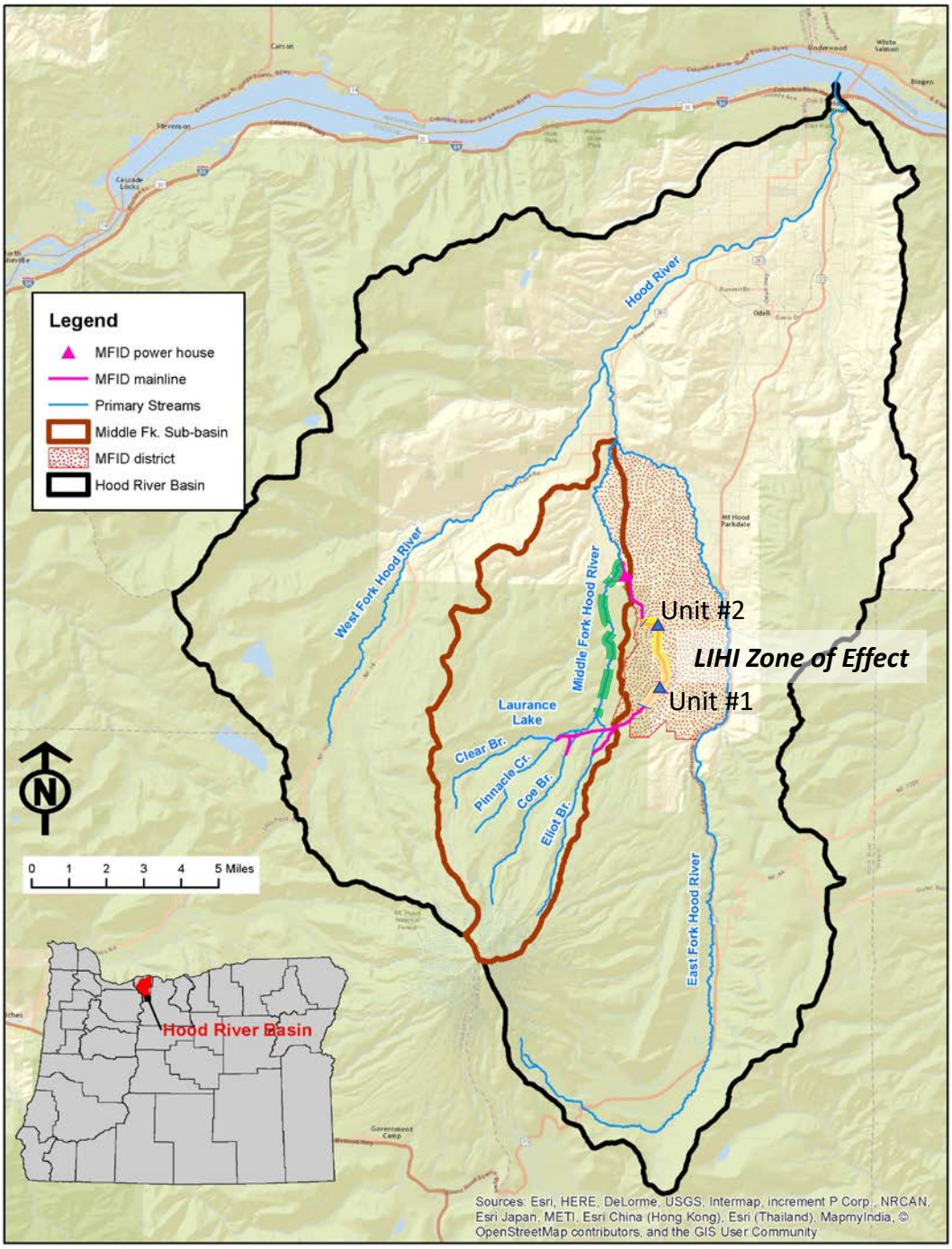

Figure 1. Location of the Middle Fork Irrigation District facility within the larger Hood River basin in Oregon.

There is a large lava zone, called the Parkland Lava flow, on the main stem of the East Branch of the Hood River, extending downstream from the confluence with Coe Creek. This is a relatively young geological formation, possibly 7,000 years old. This lava flow lies on the east side of the river – it is easily seen from aerial photographs because it is still mostly unvegetated (see Figure 2). The river segment that parallels this lava flow was designated as a Recreational River in 2013. It is managed by the U.S. Forest Service (USFS) and located on their lands.

The original purpose of the MFID Project was for irrigation. The first Special Use Permit (SUP) issued by the USFS was in 1927 for this single use. In 1987, additional water uses for hydropower purposes were included in a new SUP, as described below.

Laurance Lake is impounded by the 106-ft-high Clear Branch Dam. The reservoir is now used for irrigation supply, hydropower, and recreation. Inflows rather than existing storage are used to meet downstream minimum flow requirements. Outflow from the dam is into either the natural channel of the Middle Fork of the Hood River or into a 2-mile-long concrete pipe that discharges to a sediment basin. At the sediment basin, lake water can be mixed with Coe and Eliot Creek diversions and can be distributed into several irrigation pipelines, or mixed with Coe Creek diversion water and sent to Unit 1[2] (see Figure 2 and Figure 3 in Section VI below).

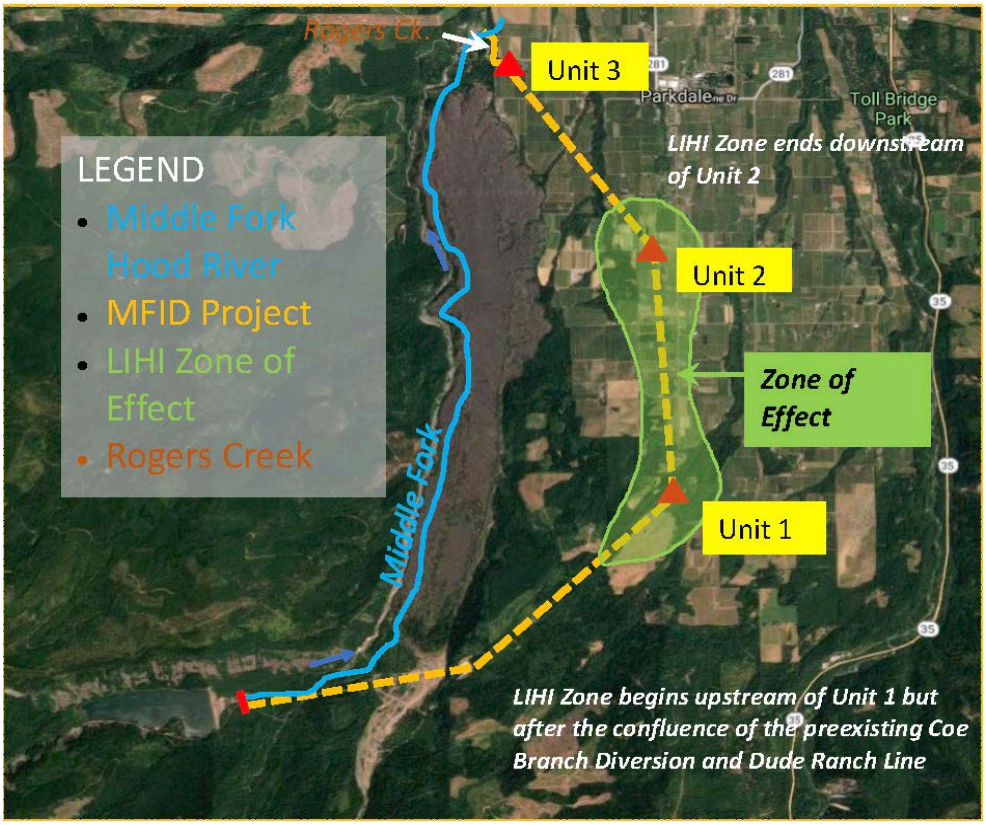

Figure 2. Middle Fork Irrigation District hydropower facility layout.

[2] Hood River Basin Water Use Assessment, June 2013. http://www.co.hood-river.or.us/vertical/sites/%7B4BB5BFDA-3709-449E-9B16-B62A0A0DD6E4%7D/uploads/Hood_River_Basin_Water_Use_Assessment.pdf

IV. REGULATORY AND COMPLIANCE STATUS

The Project is considered a small-hydro-qualified, FERC-exempt Project (5 MW or less), and therefore is not subject to Part I of the Federal Power Act (FPA) (see: https://www.ferc.gov/industries/hydropower/gen-info/licensing/exemptions.xls). The Project was exempt from licensing in 27 FERC ¶ 61,066 (1984). Small hydro exemptions are issued to hydropower projects where the installed capacity is 5 MW or less. Exemptions are issued in perpetuity, but new environmental constraints can be added by state or federal natural resource managers at any time under the exemption's Standard Articles, and exemptions can be amended by FERC.

The Project is subject to the mandatory terms and conditions set forth by federal and state fish and wildlife agencies and by FERC. The Project is operated under a SUP issued by the Mt. Hood National Forest for the Irrigation District diversion operations and maintenance (see Application). These activities are authorized under the current SUP issued by USFS on August 8, 1994, and by water rights issued by the Oregon Department of Water Resources. The SUP covers 132.5 acres, including the Clear Branch Dam, Laurance Lake, a sediment basin, and 3.8 miles of water transmission conduit and water diversions located on the Coe Branch and Eliot Branch. The SUP was issued for the purposes of irrigation and the operation and maintenance of a hydroelectric project. Under clause 30 of the SUP MFID is directed to bypass certain stream flows. The SUP superseded and consolidated the previous two SUPs that had been issued. The first, permit #4141 (922) issued on May 22, 1967, authorized the construction of the Clear Branch Dam and appurtenances, the reservoir, pipeline and settling basin for the purpose of irrigation. The second, permit #4141-04 (612) issued on April 22, 1986, authorized the operation and maintenance of the FERC-exempted hydroelectric project. The current SUP covers all conduits from Laurance Lake and Coe diversion to the USFS Boundary. The current SUP expires on December 31, 2021.

MFID also has an active Fisheries Management Plan (FMP) for the Project. The FMP process originally began as a result of communication from the USFS to MFID that its SUP had not been formally consulted upon under section 7 of the Endangered Species Act (ESA). These communications, in 2003, led to a variety of meetings with USFS, NOAA Fisheries, U.S. Fish and Wildlife Service (USFWS), and the preparation by MFID of a preliminary draft biological assessment. It was soon concluded by the federal agencies that there could be a variety of mechanisms to achieve ESA compliance and that the FMP should first be developed as required in the SUP to serve as the basis for completing ESA and Clean Water Act (CWA) compliance. The discussions were expanded to include state agency and tribal stakeholders. Various meetings were held to synthesize all pertinent fisheries, water quality, and habitat issues being affected by the Project, and to venture approaches to resolving such issues in an adaptive management manner.

These were set down in an issue resolution table which ultimately became the basis for the substance of the FMP (see Application Appendix F). After setting forth clear objectives of the FMP and establishing the ground rules for the FMP process, the parties have worked diligently over the years both to understand and define the issues and reach consensus on solutions. This FMP is the product of that process.

The MFID Project is also subject to FERC dam safety requirements. The Project is in compliance with all aspects of dam safety requirements. A record of which can be found in the FERC eLibrary.

V. PUBLIC COMMENTS SOLICITED AND RECEIVED BY LIHI

In their application for certification, MFID identified a number of local and federal environmental resource managers who could be contacted for this application including five resource agency representatives identified as relevant experts on the environmental resources that are affected by the Project. These were (see Appendix A):

- Ms. Bonnie Lamb, Natural Resource Specialist/Hood Basin TMDL Coordinator, Oregon Department of Environmental Quality, an expert on flows and water quality;
- Mr. Rod French, Mid-Columbia District Fish Biologist, Oregon Department of Fish and Wildlife, an expert on Flows, Fish/Wildlife, Watersheds, T/E species, and recreation;
- Ms. Ann Gray, U.S. Fish and Wildlife Service (USFWS), an expert on Watersheds and cultural resources;
- Mr. Tom Hausmann, National Marine Fisheries Service (NMFS), an expert on T/E species; and
- Ms. Katheryn Arendt, Mt. Hood National Forest Eastside Fisheries Program Manager, U.S. Forest Service (USFS), and expert on Flows, Water Quality, Fish/Wildlife, Watersheds, T/E Spp., Cultural Resources, Recreation.

To supplement the assessment of effects of this project, I sent an e-mail to each of these representatives before the end of February to solicit input. The basic content of my messages was:

> *"Attached here is the LIHI application provided by the owner of the Middle Fork Irrigation District (MFID) Project near Parkdale, OR. I am the LIHI reviewer tasked with determining whether the Project should be LIHI certified. I am e-mailing you today because you have been identified in the application as resource agency and/or non-governmental organization contacts familiar with the Project. I would appreciate your perspective regarding the Project's proposed operation with regard to satisfying its licensed environmental obligations (FERC articles) and your views pertaining to the Project being "low impact." Without your input my review can only be based on the documents found in the FERC docket."*

These emails were followed up on by LIHI's Certification Program Director (CPD) on March 30, 2018. Ms. Bonnie Lamb responded via email that the ODEQ would not have the resources available to respond during the public comment period. The ODFW responded via email with a request for a teleconference which was held between the LIHI CPD and ODFW representatives Ken Homolka, Rod French, and Ted Wise on April 4, 2018 (see Appendix B).

The announcement for public comments had gone out via email to the LIHI mailing list for the Project on February 26, 2018. The deadline for submission of written comments on the LIHI certification application was April 27, 2018 and no comments were received.

VI. ZONES OF EFFECT

The Project for purposes of the current LIHI application is defined as the area inside the conduits downstream of Laurance Lake that were added as part of the hydropower project and including only the first two powerhouses (Hydro Plant Number 1 and Number 2, aka "Unit 1" and "Unit 2"), (see Figure 3). Unit 1 is a 2 MW Pelton turbine and Unit 2 is a 0.5 MW Francis turbine, both of which operate as "run-of-river" in that they do not store any water. MFID operates an on-demand supply and distribution

system where the opening and closing of user field turnout valves determine the system's flow rates and volume. Flow rates and pressures are continuously monitoring and adjusted as needed.

Unit 1 automatically responds to downstream flow demands by adjusting to maintain a constant water level in the pre-existing tailrace pond. Flows that discharge from the tailrace pond re-enter the conduit where water is delivered to irrigation submains or flow turnouts and fire protection facilities (e.g., hydrants) along the approximately 10,250 feet of conduit, before entering Unit 2. Unit 2 serves as a pressure reducing station by modulating the turbine wicket gates to reduce incoming water pressures at 120 – 130 pounds per square inch (PSI) down to 35 – 45 PSI at the point of discharge. Prior to construction of the hydro facilities, MFID utilized a large pressure-reducing station at the Unit 2 location and the pre-existing valves are still in place and can be used for that purpose in case of emergency or during Unit 2 maintenance. Discharge from Unit 2 flows through approximately 11,250 feet of conduit with several more submains and flow turnouts before entering Unit 3.

Hydro Plant Number 3 (Unit 3) is not included in this LIHI application's Zone of Effect (ZoE). Powerhouse 3 is different from Powerhouses 1 and 2 since water discharged from Powerhouse 3 is used for downstream agricultural uses, fire protection systems, and the Bonneville Power Administration (BPA) fish facility operated by the Confederated Tribes of the Warm Springs (CTWS). Because of additional information needed for the review of this unit, the applicant decided to move forward with certification of Units 1 and 2 only at this time.

The applicant had proposed the upstream end of the project-affected area to begin at the outlet from Laurance Lake, but this review finds that the more appropriate upstream end of the affected area related to the hydropower operation begins just upstream of Unit 1, since all other facilities, structures and conveyances located upstream of that point were pre-existing to the hydro development and flows were not additionally impacted by the hydropower operation. As noted above, the lower end of the LIHI ZoE is at the discharge of Unit 2 (see Figure 3).

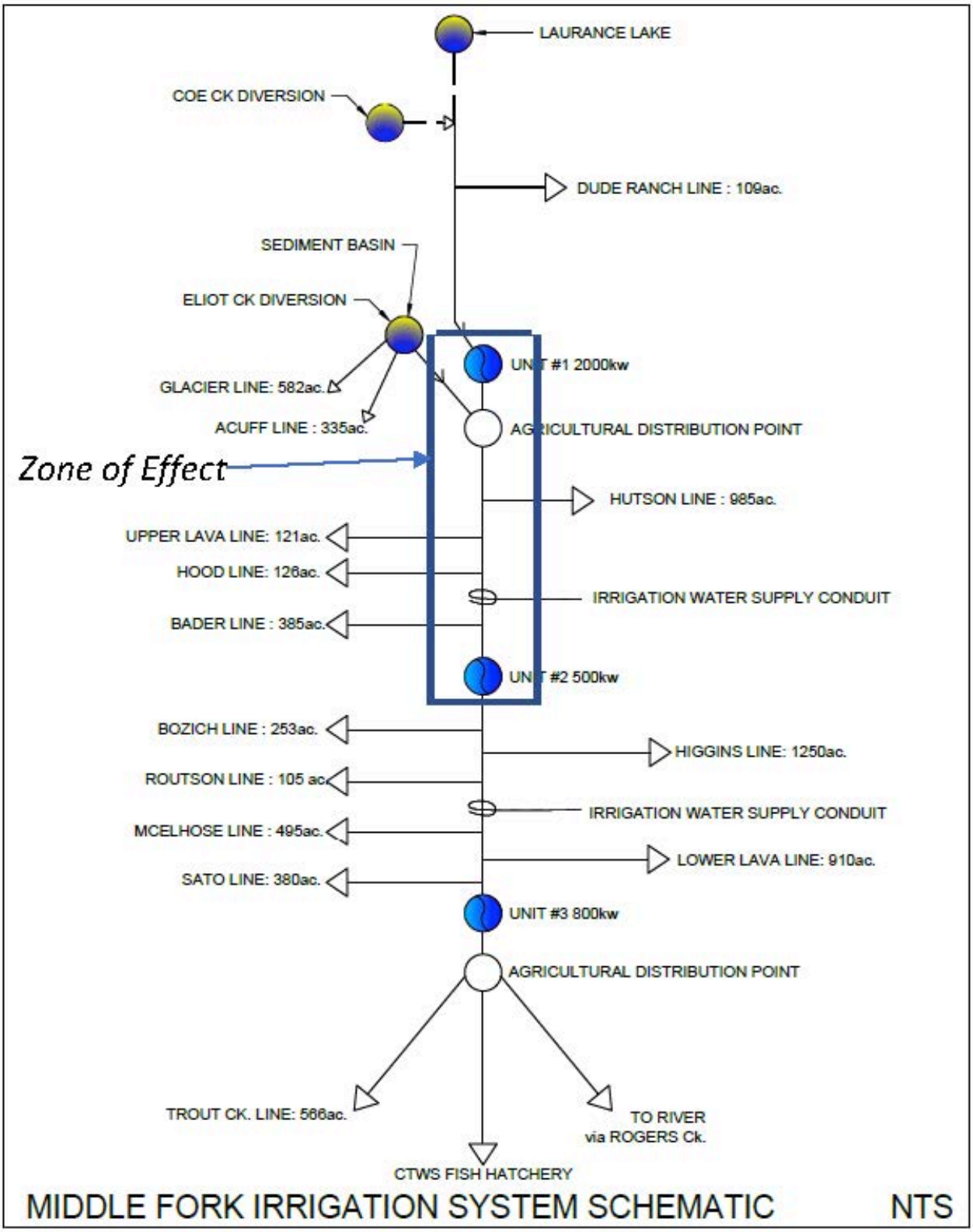

Figure 3. Schematic of flow lines within the irrigation system.

VII. SUMMARY OF COMPLIANCE WITH LIHI CRITIERIA

The following matrix summarizes the standards selected by the Applicant as applicable to this Project and its single Zone of Effect. This review found that a single ZOE and these Standards are appropriate, sufficient supporting data was provided, and this data demonstrated compliance with the Criteria and Standards selected. Details of compliance with the LIHI Criteria are presented in Section IX.

	Criterion	***Standards Selected***				
		1	***2***	***3***	***4***	***Plus***
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				
H	***Recreational Resources***	X				

(Shaded cells indicate no higher standards are available.)

VIII. GENERAL CONCLUSIONS AND REVIEWER RECOMMENDATION

Based on my review of information submitted by the applicant, plus additional investigation, I believe that this Project meets the requirements of a Very Low Impact facility since Standard 1 (Not Applicable / De Minimis) applies for each Criterion within the Project's designated Zone of Effect. As such, the portion of the FERC-exempt MFID Project that includes Powerhouses (Units) #1 and #2 should be certified for a ten-year period in accordance with the LIHI 2nd Edition Handbook.

IX. DETAILED CRITERIA REVIEW

A. Ecological Flow Regimes

Goal: *The flow regimes in riverine reaches that are affected by the facility support habitat and other conditions suitable for healthy fish and wildlife resources.*

Standards: *All river reaches where stream flows are altered by the facility shall be defined. In all locations, appropriate flow management should apply an ecosystem based approach that supports fish and wildlife resources by considering base flows, seasonal variability, high flow pulses, short-term rates of change, and year-to-year variability. Compliance with one of the alternative standards identified in the Low Impact Hydropower Certification Handbook issued March 7, 2016 must also be demonstrated.*

Assessment of Criterion Passage: Of the possible alternative Standards, the Applicant has selected and demonstrated compliance with **Standard A-1, Not Applicable/De Minimis Effect,** to pass the Ecological Flow Regimes criterion. This standard requires:

> ***"STANDARD A-1. Not Applicable/De Minimis Effect***: The Facility operates in a true run-of-river operational mode and there are no bypassed reaches or water diversions associated with the Facility; or the facility is located within an existing water conduit that does not discharge into natural waterways."

The facility included in the application is located within an existing water conduit that does not discharge into natural waterways.

The MFID draws water from Laurance Lake and the Coe Creek Diversion inlet as described in Sections III and VI above. Water that is discharged from Powerhouse #2continues down the conduit, not discharging to the natural waterway. It is the third powerhouse (#3) that discharges to one or more of three possible destinations: the Parkdale Fish Hatchery, additional irrigation users, or back to the lower Hood River system. It should be noted that flows in the natural river, while not part of this review due to the conduit nature of the Project, have been in place since 1962 and were amended most recently in 2007 through the MFID FMP.

I agree with the applicant that the MFID Project satisfies Standard A-1.

This Project passes Criterion A – Ecological Flow Regimes

B. Water Quality

Goal: *Water Quality is protected in waterbodies directly affected by the facility, including downstream reaches, bypassed reaches, and impoundments above dams and diversions*.

Standards: *Compliance with the appropriate state/provincial or federal water quality standards must be demonstrated with all waterbodies where water quality is directly affected by the facility, including those affected areas outside the facility boundary. In all cases, if any waterbody directly affected by the facility has been defined as being water quality limited (for example, on a list of waters with quality that does not fully support designated uses), it must be demonstrated that that the facility has not contributed to that substandard water quality. Compliance with one of the alternative standards identified in the Low Impact Hydropower Certification Handbook issued March 7, 2016 must also be demonstrated.*

Assessment of Criterion Passage: Of the following possible alternative Standards, the Applicant has selected and demonstrated compliance with **Standard B-1, Not Applicable/De Minimis Effect** to pass the Water Quality criterion. This Standard requires:

> ***"STANDARD B-1. Not Applicable/De Minimis Effect:*** The facility does not alter the physical, chemical, or biotic water characteristics necessary to support fish and wildlife resources or human water uses (e.g., water supply or recreation)."

The facility is located within a conduit facility and does not alter water quality characteristics above or below it. The conduit facility is fed "raw water" (prior to treatment) off the upper Hood River drainage, from a Class A water supply system (Laurance Lake) and from the Coe Branch and Eliot Branch. After being discharged from the end of Powerhouse #2, the water is used by other irrigators and for fire protection. Some water also flows to Powerhouse #3. No physical, chemical, or biotic water characteristics are changed that would impact fish and wildlife resources or human water uses.

However, it should be noted that Middle Fork Irrigation District (MFID) and the US Forest Service (USFS) have teamed up to improve gravel supplies in Clear Branch below the Laurance Lake dam. Laurance Lake and the dam stop natural sediment movement downstream which has limited the gravel available below the dam for stream and bank substrate and habitat diversity. This project is designed to restore gravel supplies and improve Clear Branch habitat downstream of the dam. About $21,000 worth of gravel (~700 tons) will be added to Clear Branch throughout this project, which will continue for another 3-5 years. Monitoring will be ongoing during the next few years. This project was funded by MFID.[3]

I agree with the applicant that the MFID Project satisfies Standard B-1.

This Project passes Criterion B – Water Quality

[3] http://hoodriverswcd.org/project/clear-branch-gravel-augmentation/

C. Upstream Fish Passage

Goal: *The facility allows for the safe, timely, and effective upstream passage of migratory fish. This criterion is intended to ensure that migratory species can successfully complete their life cycles and maintain healthy, sustainable fish and wildlife resources in areas affected by the facility.*

Standards: *The applicant shall list all migratory fish species (for example, anadromous, catadromous, and potamodromous species) that occur now or have occurred historically at the Facility. Maintenance of upstream passage sufficient to support sustainable populations of these migratory species must be demonstrated by compliance with one of the alternative standards identified in the Low Impact Hydropower Certification Handbook issued March 7, 2016.*

Assessment of Criterion Passage: The Applicant has selected and demonstrated compliance with **Standard C-1, Not Applicable/De Minimis Effect** to pass the Upstream Fish Passage criterion. This standard requires:

> ***"STANDARD C-1. Not Applicable/De Minimis Effect***: The facility does not create a barrier to upstream passage, or there are no migratory fish in the vicinity of the facility and the facility is not the cause of extirpation of such species if they had been present historically."

The MFID facility is located within an existing water supply aqueduct/pipeline. The conduit is a manmade structure, not on a river and does not create a barrier to upstream passage. There are no migratory fish to be affected by use of the water flowing through the conduit. It should be noted that the FMP includes adaptive management provisions for evaluation of upstream fish passage options at the Clear Branch Dam, outside of the LIHI ZoE.

I agree with the applicant that the MFID Project satisfies Standard C-1.

This Project passes Criterion C – Upstream Fish Passage

D. Downstream Fish Passage and Protection

Goal: *The facility allows for the safe, timely, and effective downstream passage of migratory fish. For riverine (resident) fish, the facility minimizes loss of fish from reservoirs and upstream river reaches affected by Facility operations. All migratory species are able to successfully complete their life cycles and to maintain healthy, sustainable fish and wildlife resources in the areas affected by the Facility.*

Standards: *The applicant shall list all fish species (for example, riverine, anadromous, catadromous, and potamodromous) that occur now or have occurred historically in the area affected by the Facility. To pass the downstream fish passage and protection criterion, compliance with one of the alternative standards identified in the Low Impact Hydropower Certification Handbook issued March 7, 2016 must be demonstrated.*

Assessment of Criterion Passage: The Applicant has selected and demonstrated compliance with **Standard D-1, Not Applicable/De Minimis Effect** to pass the Downstream Fish Passage and Protection criterion for the Project. This standard requires:

> ***"STANDARD D-1. Not Applicable/De Minimis Effect:*** The facility does not create a barrier to downstream passage, or there are no migratory fish in the vicinity of the facility; if migratory fish had been present historically, the Facility is not responsible for extirpation of such species; the Facility does not contribute adversely to the sustainability of riverine fish populations or to their access to habitat necessary for the completion of their life cycles."

As noted above, the conduit supplying the Project Zone of Effect is located within an existing water supply aqueduct/pipeline which is disassociated from the river and does not create a barrier to downstream fish passage. There are no mandatory fish prescriptions in the FERC exemption and there are no migratory or riverine fish expected to be impacted by use of the water flowing in the conduit. While there is a current effort to provide downstream passage to the mainstem river and to Laurance Lake under the FMP, those efforts are unrelated to the in-conduit Project. Therefore, I agree with the applicant that the MFID Project satisfies Standard D-1.

The Project Passes Criterion D – Downstream Fish Passage and Protection

E. Shoreline and Watershed Protection

Goal: *The Facility has demonstrated that sufficient action has been taken to protect, mitigate and enhance the condition of soils, vegetation and ecosystem functions on shoreline and watershed lands associated with the facility.*

Standards: *To pass the watershed protection criterion for LIHI certification, the applicant shall demonstrate compliance with one of the alternative standards identified in the Low Impact Hydropower Certification Handbook issued March 7, 2016.*

Assessment of Criterion Passage: Of the following possible alternative Standards, the Applicant has selected and demonstrated compliance with Standard E-1, Not Applicable/De Minimis Effect to pass the Shoreline and Watershed Protection criterion for the Project. This standard requires:

> ***"STANDARD E-1. Not Applicable/De Minimis Effect:*** There are no lands associated with the facility under ownership and control of the applicant that have significant ecological value for protecting water quality, aesthetics, or low-impact recreation, and there has been no Shoreline Management Plan (SMP) or similar protection required at the facility; or the facility has no direct or indirect project-related land ownership, excluding lands used for power generation and transmission, flowage rights and required developed recreational amenities."

The hydropower Project's ZoE is located on the grounds of an existing water delivery system. The powerhouses involved were constructed in the 1980s, well after construction of the original irrigation dam, diversion, and conduit system. Project facilities and conveyances are all underground, or slightly aboveground. The MFID has an associated clear right-of-way. In addition, there are no lands at the MFID Project that have significant ecological value for protecting water quality, aesthetics, or low-impact recreation, and there has been no Shoreline Management Plan (SMP) or similar protection required at the Project.

However, it should be noted that MFID has set aside 25% of their Renewable Energy Certificate (REC) sales for local conservation projects. About $22,000 has been allocated for the next year, which will provide

cost-sharing for irrigation system upgrades on about 75 acres of irrigated land in MFID's service district. The upgraded systems will be more efficient, which will use less water on-farm and allow MFID to divert less water from local streams for irrigation.[4]

I agree with the applicant that the MFID Project satisfies Standard E-1.

The Project Passes Criterion E – Shoreline and Watershed Protection

F. Threatened and Endangered Species Protection

Goal: *The Facility does not negatively impact listed species.*

Standards: *Facilities shall not have caused or contributed in a demonstrable way to the extirpation of a listed species. However, a facility that is making significant efforts to reintroduce an extirpated species may pass this criterion. To pass the Threatened and Endangered Species criterion compliance with at least one of the alternative standards identified in the Low Impact Hydropower Certification Handbook issued March 7, 2016 must be demonstrated.*

Assessment of Criterion Passage: Of the following possible alternative Standards, the Applicant has selected and demonstrated compliance with **Standard F-1, Not Applicable/De Minimis Effect** to pass the Threatened and Endangered Species Protection criterion for the Project. This standard requires:

> ***"STANDARD F-1. Not Applicable/De Minimis Effect:*** There are no listed species present in the facility area or downstream reach, and the facility was not responsible for the extirpation of the listed species if they were previously there."

There are two federally and/or state-listed, threatened species within the Project vicinity, but neither of these are affected by the Project since it is limited to in-conduit areas. Northern Spotted Owl (*Strix occidentalis caurina*) and Bull Trout (*Salvelinus confluentus*) are the two listed species and both have final descriptions of critical habitat associated with them. There is also a candidate species, Whitebark Pine (*Pinus albicaulis*) which is also not impacted by the Project.

Since the Project ZoE is located within the existing conduit system, the hydropower operations do not impact listed species either upstream or downstream of the Project ZoE. To help prevent fish from entering the conduit project entirely, MFID has installed protective grates on the outlets of Laurance Lake, Coe Branch and Eliot Branch. The Applicant indicates that there is no historical evidence of fish being entrained into the conduit system and that, while not part of the hydropower operation, MFID is currently working with agencies on sizing screens and plans to place species-specific "criterion screens" at the lake outlets.

I agree with the applicant that this Project satisfies Standard F-1.

The Project Passes Criterion F – Threatened and Endangered Species Protection

[4] http://hoodriverswcd.org/project/mfid-provides-conservation-funding/

G. Cultural and Historic Resource Protection

Goal: *The Facility does not inappropriately impact cultural or historic resources that are associated with the Facility's lands and waters, including resources important to local indigenous populations, such as Native Americans.*

Standards: *To pass the Cultural and Historic Resource criterion compliance with one or more of the alternative standards identified in the Low Impact Hydropower Certification Handbook issued March 7, 2016 must be demonstrated.*

Assessment of Criterion Passage: The Applicant has selected and demonstrated compliance with **Standard G-1, Not Applicable/De Minimis Effect** to pass the Cultural and Historic Protection criterion for the Project. This standard requires:

> ***"STANDARD G-1. Not Applicable/De Minimis Effect:*** There are no cultural or historic resources present on facility lands that can be potentially threatened by construction or operations of the facility, or facility operations have not negatively affected those that are present, either recently or in the past. "

The application included a 1982 Oregon State Historic Preservation Officer (SHPO) letter confirming that there are no cultural or historic resources within the Project's Zone of Effect. I agree with the applicant that the Project satisfies Standard G-1.

The Project Passes Criterion G - Cultural and Historic Resource Protection

H. Recreational Resources

Goal: *The facility accommodates recreation activities on lands and waters controlled by the facility and provides recreational access to its associated lands and waters without fee or charge.*

Standards: *To pass the recreation criterion, compliance with at least one of the alternative standards identified in the Low Impact Hydropower Certification Handbook issued March 7, 2016 must be demonstrated. In all cases, it must be demonstrated that flow-related recreational impacts are mitigated to a reasonable extent in all zones where there is flow-related recreation. Where there is recognized, flow-related recreational use, the facility shall provide the public with relevant and up-to-date information on reservoir levels and river flows, preferably real-time updates. It is understood that recreational activities must be consistent with the assurance of reasonable safety of employees and the public, and with critical infrastructure protection dictated by state or federal authorities.*

Assessment of Criterion Passage: The Applicant has selected and demonstrated compliance with **Standard H-1, Not Applicable/De Minimis Effect** to pass the Recreational Resources criterion for the Project. This standard requires:

> ***"STANDARD H-1. Not Applicable/De Minimis Effect***: The facility does not occupy lands or waters to which the public can be granted access and does not otherwise impact recreational opportunities in the vicinity of the facility."

Due to the critical nature of MFID's water supply infrastructure, the conduit system and the hydropower plants are in secure, fenced-in areas where public access is not allowed. The pipeline right-of-way likewise does not provide public recreational opportunities. The FERC exemption does not require recreation facilities.

I agree with the applicant that this part of the MFID water system satisfies Standard H-1.

The Project Passes Criterion H – Recreational Resources

X. FINAL RECOMMENDATION

As noted in Section VIII above, based on my review of information submitted by the applicant, plus additional investigation[5], I believe that this Project meets the requirements of a Very Low Impact facility since Standard 1 (Not Applicable / De Minimis) applies for each Criterion within the Project's designated Zone of Effect. As such, the portion of the FERC-exempt MFID Project that includes Powerhouses (Units) #1 and #2 should be certified for a ten-year period in accordance with the LIHI 2nd Edition Handbook for Projects having very low impact.

[5] And teleconference between Oregon Depart of Fish and Wildlife staff and LIHI's Certification Program Director on April 4, 2018.

APPENDIX A

Agency Representatives Contacted

Flows and Water Quality

Bonnie Lamb, Natural Resource Specialist/Hood Basin TMDL Coordinator, Oregon Department of Environmental Quality
541-633-2027, lamb.bonnie@deq.state.or.us
475 NE Bellevue Dr. Suite 110, Bend, OR 97701

Flows, Fish/Wildlife, Watersheds, T/E Spp., Recreation

Rod French, Mid-Columbia District Fish Biologist, Oregon Department of Fish and Wildlife
541-296-4628, rod.a.french@state.or.us
3701 W. 13th Street, The Dalles, OR 97058

Watersheds and Cultural Resources

Ann Gray, U.S. Fish and Wildlife Service (USFWS)
503-231-6909, ann_e_gray@fws.gov
2600 SE 98th Avenue, Suite 100, Portland, OR 97206

T/E Species.

Tom Hausmann, National Marine Fisheries Service (NMFS)
503-231-2315, tom.hausmann@noaa.gov
1201 NE Lloyd Blvd, Suite 1100, Portland, OR 97232

Flows, Water Quality, Fish/Wildlife, Watersheds, T/E Spp., Cultural Resources, Recreation

Katheryn Arendt, Mt. Hood National Forest Eastside Fisheries Program Manager, U.S. Forest Service (USFS)
541-352-1217, karendt@fs.fed.us
6780 Highway 35, Parkdale, OR 97041

APPENDIX B

Correspondence

From:	LAMB Bonnie
To:	mfischer@lowimpacthydro.org
Cc:	NIGG Eric; FONSECA Marilyn
Subject:	RE: Follow up on the Low Impact Hydropower Institute Application of the Middle Fork Irrigation District Hydro Project
Date:	Monday, April 2, 2018 12:47:17 PM

Hi Maryalice – I had not responded to Mike yet so you are not missing anything. Unfortunately, I do not think DEQ is going to have the resources to review the project materials and respond to this request during the public comment period. Let me know if you have any questions. Thanks. Bonnie

From: mfischer@lowimpacthydro.org <mfischer@lowimpacthydro.org>
Sent: Friday, March 30, 2018 11:11 AM
To: LAMB Bonnie <LAMB.Bonnie@deq.state.or.us>
Subject: Follow up on the Low Impact Hydropower Institute Application of the Middle Fork Irrigation District Hydro Project

Hello,

Sometime near the end of February you received an email from Mr. Mike Sale (mjsale@frozenhead.net) asking for your input on the Low Impact Hydropower Institute (LIHI) application for certification submitted by the Middle Fork Irrigation District for two of their three hydro projects located in the Middle Fork irrigation system. Mike's email said this:

> *'Attached here is the LIHI application provided by the owner of the Middle Fork Irrigation District (MFID) Project near Parkdale, OR. I am the LIHI reviewer tasked with determining whether the Project should be LIHI certified. I am e-mailing you today because you have been identified in the application as resource agency and/or non-governmental organization contacts familiar with the Project. I would appreciate your perspective regarding the Project's proposed operation with regard to satisfying its licensed environmental obligations (FERC articles) and your views pertaining to the Project being "low impact." Without your input my review can only be based on the documents found in the FERC docket.'*

Unfortunately, Mike has taken ill and is unable to complete the LIHI review of this hydro project. I do not have access to his email system to determine if you had responded to him. If you did respond, would you please forward your response to me? If you did not respond to Mike's email, please advise if you intend to do so during the public comment period which ends on April 27. The project application can be found here http://lowimpacthydro.org/lihi-pending-application-certification-of-middle-fork-irrigation-district-hydroelectric-project-plants-no-1-and-no-2/

Please let me know if you have any questions about this request.

Best regards,
Maryalice

From: mfischer@lowimpacthydro.org
To: mfischer@lowimpacthydro.org
Subject: ODFW Comments on MFID application
Date: Wednesday, April 4, 2018 3:13:37 PM

Teleconference April 4, 2018:
Attending:

Rod French Rod.A.French@state.or.us ; Ted Wise Ted.G.Wise@state.or.us, Ken Homolka Ken.Homolka@coho2.dfw.state.or.us
Maryalice Fischer

1. They had questions about ZOE and its limitations.
2. concerned about fish impingement at the conduit inlet from Laurance Lake as well as entrainment.
3. concerned about potentially low fish survival in the conduit itself due to high pressures and velocities.
4. Concerned about Eliot diversion that keeps blowing out its fish screening.
5. Downstream passage at Laurance Lake is only during periods of spill and is surface discharge. Some species like Bull Trout could be present and could be at a the 80-ft depth of the lake conduit outlet although the state "has not evaluated" if there is an impingement/entrainment issue at that site. The state has standard criteria for screening and approach velocities. Both Coe and Eliot diversions meet that criteria.
6. Upstream passage, fish ladder is infeasible. They had discussed trap/truck.
7. State admits that there has been no Fisheries Management Plan meeting in about 2 years but apparently some adaptive management has been done.
8. Claims the project is out of compliance with state WQS for temp downstream (but MAF pointed out that since the water from the lake is diverted for irrigation primarily, that shouldn't really matter unless powerhouse 3 discharge doesn't meet WQS.
9. Note of clarification – the fish hatchery takes water from the powerhouse 3 tailrace, from Rogers Creek, and from an onsite well, then discharges back to Rogers Creek.

Ultimately they feel like "as long as everything is taken care of at the point of diversion they could support LIHI certification.

From: Rod French [mailto:Rod.A.French@state.or.us]
Sent: Monday, April 2, 2018 6:24 PM
To: mfischer@lowimpacthydro.org
Subject: RE: Follow up on the Low Impact Hydropower Institute Application of the Middle Fork Irrigation District

Hi Maryalice,
The ODFW has some questions concerning the review of the LIHI application from Middle Fork Irrigation District. In particular the Zone of Effect of the project. Would you be available to assist with answering some questions concerning this project in the near future? Thank you, Rod