Clean Water Act Section 401 Certification

for the

Eugene Water & Electric Board

Carmen-Smith Hydroelectric Project

(FERC No. 2242)

McKenzie Subbasin,

Linn and Lane Counties, Oregon

Upon Federal Energy Regulatory Commission issuance of a new license for the Carmen-Smith Hydroelectric Project (Project), the Eugene Water & Electric Board shall comply with the following section 401 water quality certification conditions:

1. Water Quality Management Plan

Consistent with Proposed License Article 14 of the Amended and Restated Settlement Agreement for the Relicensing of the Carmen-Smith Hydroelectric Project FERC Project No. 2242, dated November 30, 2016 (2016 Settlement Agreement), EWEB shall submit a Water Quality Management Plan to the Oregon Department of Environmental Quality for approval within 12 months of FERC license issuance. Upon approval by DEQ, EWEB shall file the WQMP with FERC and implement the WQMP upon FERC approval. The WQMP must address parameters as specified in these section 401 Certification Conditions and include:

- a) Data collection protocol, analytical methods, and laboratory method reporting limits;
- b) Location and description of monitoring points;
- c) Provision for funding the collection of real-time, publicly accessible data from USGS gauge locations;
- d) Compliance monitoring and field audit schedule;
- e) Data sampling frequency;
- f) Applicable compliance criteria;
- g) Instrument calibration procedures and schedule;
- h) Data validation procedures and quality assurance methodology;
- i) Contingency plan for inoperable or malfunctioning equipment; and
- j) Adaptive management plan including the option of a report analyzing the situation and additional monitoring in the event water quality criteria are not attained.

2. Biological Criteria; Protection of Beneficial Uses; Compliance with Other Appropriate Requirements of State Law

a) Instream Flows

EWEB shall release water from Project reservoirs in accordance with Section 4.2 of the Aquatics Management Plan (Exhibit B to the Settlement Agreement), as presented below:

- Upper Carmen Bypass Reach
 Within six years of FERC license issuance, EWEB shall release a minimum of 30 cfs from Carmen Diversion Dam into the Upper Carmen Bypass Reach year round.
- (2) Lower Carmen Bypass Reach

In accordance with the schedule in Section 4.2 of the Aquatics Management Plan, EWEB shall release additional water as necessary from Carmen Diversion Dam in accordance with the schedule in Table 4-4 of the Aquatics Management Plan to maintain a minimum target flow of 160 cfs in the Lower Carmen Bypass Reach as measured at the USGS gauge to be installed upstream of the Carmen powerhouse.

(3) Smith River Bypass Reach

Within six years of FERC license issuance, EWEB shall release water from Smith Dam into the Smith Bypass Reach as follows:

Minimum Block	Release
10 cfs	Year Round
35 cfs	August 16 through October 31

Minimum Instre	am Flow
30 cfs	November 1 through April 15
25 cfs	April 16 through August 15

b) Flow Measurement and Reporting

EWEB shall fund the installation and operation of gauges at the locations and in accordance with the schedule in Section 4.2 of the Aquatics Management Plan. Beginning with the first year in which scheduled water releases from Project dams are required, EWEB shall prepare and submit to DEQ an annual report of average hourly flows at all monitored locations. EWEB shall submit the report to DEQ by December 31, or an alternate date agreed to by DEQ, for each previous water year (October 1 through September 30). The report shall include flow releases and instream flows as provided in Section 4.2 of the Aquatics Management Plan.

- c) Flow Fluctuations and Ramping
 - (1) Trail Bridge Reservoir

EW EB shall manage Project-related flow fluctuations in Trail Bridge Reservoir in accordance with the schedules in Section 4.4 of the Aquatics Management Plan, as presented below:

Maximum Daily Elevation Fluctuations

Seven-feet from March 15 through October 31 Twelvefeet from November 1 through March 14

Maximum Ramping Rate

Downramp:

- 12 inches per hour from March 15 through August 31
- 14 inches per hour from September 1 through October 31
- 24 inches per hour from November 1 through March 14

Upramp:

38 inches per hour year-round.

(2) McKenzie River

EWEB shall manage Project-related ramping in the McKenzie River below Trail Bridge Dam in accordance with the schedules in Section 4.4 of the Aquatics Management Plan, as presented below:

Maximum Up and Downramp Rates:	Daily	Weekly
April 1 through August 31	0.30 feet	0.30 feet
September 1 through October 31	0.20 feet	0.20 feet
November 1 through March 31	0.60 feet	0.80 feet

Maximum Hourly Upramp

Normal operations: 0.20 feet per hour Maintenance: 0.40 feet per hour (scheduled maintenance requires two weeks advance notification).

Maximum Hourly Downramp Year Round: 0.20 feet per hour

(3) Smith Reservoir Spillway

EWEB shall manage releases from the Smith Dam spillway gate to comply with a 3inch per hour maximum downramp rate in the Smith Bypass Reach at the end of Project-induced spill events and for other spill events to the extent reasonably practicable as measured at a new USGS gauge to be located in the Smith Bypass Reach.

- d) Fish Passage and Protection
 - (1) Trail Bridge Dam

EWEB shall provide upstream and downstream fish passage facilities at Trail Bridge Dam in accordance with Proposed License Articles 28, 29, and 33 of the Settlement Agreement and Section 4.1 of the Aquatics Management Plan.

(2) Fish Protection at Carmen Powerhouse

To determine if Carmen powerhouse tailrace discharge causes significant delay, substantial mortality, or serious injury to migrating fish, EWEB shall prepare a plan to study these effects, in accordance with Proposed License Article 32 of the Settlement Agreement and Section 4.1 of the Aquatics Management Plan.

(3) Bull Trout Access to Sweetwater Creek

To aid the upstream migration of bull trout into Sweetwater Creek, EWEB shall maintain Trail Bridge Reservoir at a minimum pool elevation of 2,083 feet from August 15 through October 31 in accordance with Proposed License Article 31 and Section 4.1.4 of the Aquatics Management Plan.

(4) Upstream Passage at Spawning Channel

EW EB shall design, construct, operate and maintain the upstream fish passage facilities at the Carmen-Smith Spawning Channel in accordance with Proposed License Article 30 of the Settlement Agreement. EW EB must complete construction of the facility within seven years of FERC license issuance.

e) Habitat Protection, Mitigation, and Enhancement

EWEB shall undertake activities designed to increase spawning and rearing habitat in Project reservoirs and bypass reaches, in accordance with Proposed License Articles 4, 5, 6, 7, 8, and 9 of the Settlement Agreement and Section 4.3 of the Aquatics Management Plan.

f) Water Quality Monitoring

EWEB shall monitor water quality in accordance with a WQMP approved by DEQ. If water quality monitoring indicates Project activities reduce support for designated beneficial uses, DEQ may require EWEB to submit a report analyzing the situation, or may require additional monitoring, or may require EWEB to modify Project activities as necessary to ensure compliance with applicable water quality standards.

3. Sedimentation and Turbidity

a) Flow Fluctuation and Ramping

To reduce sedimentation and turbidity, EWEB shall operate the Project within the flow fluctuation and ramping limits set forth in Section 4.4 of the Aquatics Management Plan and Condition 2(c) of these section 401 Certification Conditions.

b) Spill Reduction Measures in the Smith Bypass Reach

EWEB shall implement the spillway reduction measures described in Section 4.2.4 of the Aquatics Management Plan.

c) Ground-Disturbing Activities

During ground-disturbing activities or instream work, EWEB shall implement Best Management Practices as appropriate to protect surface water and beneficial uses from adverse Projectrelated water quality effects including but not limited to preventing excessive sediment and turbidity in accordance with Proposed License Articles 16, 17, 21, 22 and 24.

d) Vegetation Management

To reduce erosion, sedimentation, and turbidity, EWEB shall conduct restoration and/or enhancement efforts in riparian and wetland areas in accordance with the methodology and performance standards presented in the Vegetation Management Plan (Exhibit E to the Settlement Agreement).

e) Gauging Stations

EWEB shall fund the installation, operation and maintenance of gauge stations in accordance with Section 4.2 of the Aquatics Management Plan.

f) In-Water Work

For projects which require in-water work, EWEB shall obtain, as applicable, a removal-fill permit from Oregon Department of State Lands, a dredge and fill permit from the Corps pursuant to section404 of the Clean Water Act, and a section 401 water quality certification from DEQ.

g) Transmission Line Management Plan

EWEB shall develop and implement a Transmission Line Management Plan in accordance with proposed License Article 22 of the SA. The TLMP shall include Best Management Practices which specifically address reducing sedimentation and turbidity as provided in Section 4.6 of the Vegetation Management Plan.

4. Dissolved Oxygen

a) Water Quality Monitoring Plan

The WQMP developed by EWEB pursuant to Condition 1 of these section 401 Certification Conditions shall incorporate the dissolved oxygen monitoring requirements presented below:

(1) Bypass Reaches

To assess water quality in the bypass reaches, EWEB shall measure dissolved oxygen at downstream locations in the Upper Carmen Bypass Reach, Lower Carmen Bypass Reach, and Smith River Bypass Reach as provided in the WQMP. EWEB shall perform dissolved oxygen monitoring in accordance with a schedule as provided in the WQMP unless expressly authorized otherwise by DEQ. (2) McKenzie River Below Trail Bridge Dam

To assess cumulative Project effects on dissolved oxygen in response to modifications to Project developments and/or operations, EWEB shall measure dissolved oxygen at USGS gauge 14158850 located approximately 0.2 miles below Trail Bridge Dam as provided in the WQMP. EWEB shall perform dissolved oxygen monitoring in accordance with a schedule as provided in the WQMP unless expressly authorized otherwise by DEQ.

b) Instream Flows

EWEB shall maintain minimum flows in Project bypass reaches in accordance with Section 4.2 of the Aquatics Management Plan.

c) Reporting

EWEB shall report dissolved oxygen monitoring data to DEQ by December 31 for each preceding water year (October 1 to September 30) unless expressly authorized otherwise by DEQ.

d) Adaptive Management

If water quality monitoring demonstrates that Project operations contribute to exceedances of the applicable dissolved oxygen criterion, DEQ may require EWEB to submit a report analyzing the situation, may require additional monitoring, or may require EWEB to prepare a plan in consultation with DEQ that proposes measures to attain the dissolved oxygen criteria. Upon DEQ approval, EWEB shall submit the plan to FERC for approval. Upon FERC approval, EWEB shall implement the plan.

5. Hydrogen Ion Concentration (pH)

a) Water Quality Monitoring Plan

The WQMP developed by EWEB pursuant to Condition 1 of these section 401 Certification Conditions shall incorporate the pH monitoring requirements presented below:

(1) Bypass Reaches

EWEB shall measure pH at downstream locations in the Upper Carmen Bypass Reach, Lower Carmen Bypass Reach, and Smith River Bypass Reach as provided in the WQMP. EWEB shall perform pH monitoring in accordance with a schedule as provided in the WQMP unless expressly authorized otherwise by DEQ.

(2) McKenzie River Below Trail Bridge Dam

EWEB shall measure pH at USGS gauge 14158850 located approximately 0.2 miles below Trail Bridge Dam as provided in the WQMP. EWEB shall perform pH monitoring in accordance with a schedule as provided in the WQMP unless expressly authorized otherwise by DEQ.

b) Instream Flows

EWEB shall maintain minimum flows in Project bypass reaches in accordance with Section 4.2 of the Aquatics Management Plan.

c) Ramping

EWEB shall follow the ramping restrictions in accordance with Section 4.4.3 of the Aquatics Management Plan before and after planned maintenance activities at Trail Bridge Powerhouse.

d) Reporting

EWEB shall report pH monitoring data to DEQ by December 31 for each preceding water year (October 1 to September 30) unless expressly authorized otherwise by DEQ.

6. Temperature

a) Water Quality Monitoring Plan

The WQMP developed by EWEB pursuant to Condition 1 of these section 401 Certification Conditions shall incorporate the minimum temperature monitoring requirements presented below:

(1) Bypass Reaches

EW EB shall measure temperature in the Upper Carmen Bypass Reach, Lower Carmen Bypass Reach, and Smith River Bypass Reach as provided in the WQMP. EW EB shall perform temperature monitoring in accordance with a schedule as provided in the WQMP unless expressly authorized otherwise by DEQ.

(2) McKenzie River Below Trail Bridge Dam

EW EB shall measure temperature at USGS gauge 14158850 located approximately 0.2 miles below Trail Bridge Dam as provided in the WQMP. EWEB shall perform temperature monitoring in accordance with a schedule as provided in the WQMP unless expressly authorized otherwise by DEQ.

(3) Deer Creek

EWEB shall relocate the Deer Creek Valley segment of the 115-kV transmission line out of the Deer Creek riparian area within three years of FERC license issuance as required by Proposed License Article 22 of the Settlement Agreement. Following this relocation, EWEB shall revegetate the riparian area in a manner designed to promote shade potential in this reach in accordance with Section 4.5.4 of the Vegetation Management Plan.

b) Monitoring and Reporting

Temperature devices shall be tested before and after field deployment to ensure proper operation and calibration. EWEB shall perform field audits of all temperature recording devices during the recording period as provided in the WQMP. Pre- and post-deployment and field audits shall be conducted by comparing output against a National Institute of Standards and Technology (NIST) traceable thermometer accurate to $\pm 0.2^{\circ}$ C. EWEB shall report temperature monitoring data to DEQ by December 31 for each preceding water year (October 1 to September 30) unless expressly authorized otherwise by DEQ.

c) Adaptive Management

If water quality monitoring demonstrates that Project operations contribute to exceedances of the applicable temperature criterion, DEQ may require EWEB to submit a report analyzing the situation or may require additional monitoring or may require EWEB shall prepare a plan in consultation with DEQ which proposes measures to reduce Project-related thermal loading. The plan may consider measures to alter the timing and/or magnitude of releases to minimize temperature increases in affected reaches. Upon DEQ approval, EWEB shall submit the plan to FERC for approval. Upon FERC approval, EWEB shall implement the plan.

7. Turbidity

a) Water Quality Monitoring Plan

The WQMP developed by EWEB pursuant to Condition 1 of these section 401 Certification Conditions shall incorporate the minimum turbidity monitoring requirements presented below:

(1) Bypass Reaches

EWEB shall measure turbidity at downstream locations in the Upper Carmen Bypass Reach, Lower Carmen Bypass Reach, and Smith River Bypass Reach as provided in the WQMP. EWEB shall perform turbidity monitoring in accordance with a schedule as provided in the WQMP unless expressly authorized otherwise by DEQ.

(2) McKenzie River Below Trail Bridge Dam

EWEB shall measure turbidity at USGS gauge 14158850 located approximately 0.2 miles below Trail Bridge Dam as provided in the WQMP. EWEB shall perform turbidity monitoring in accordance with a schedule as provided in the WQMP unless expressly authorized otherwise by DEQ.

b) Reporting

EWEB shall report turbidity monitoring data to DEQ by December 31 for each preceding water year (October 1 to September 30) unless expressly authorized otherwise by DEQ.

8. Total Dissolved Gas

a) Water Quality Monitoring Plan

The WQMP developed pursuant to Condition 1 of these section 401 Certification Conditions shall incorporate the minimum TDG monitoring requirements presented below:

(1) Carmen Powerhouse Tailrace

EWEB shall measure TDG in the Carmen powerhouse tailrace for a minimum of 72 hours over three complete generation cycles at each Carmen unit within three months of startup following replacement of the turbine runners. Concurrent with TDG measurements, EWEB shall also record flow and power generation at each Carmen unit. During each test, each unit must be operated over a range of power generation levels and must achieve a maximum of at least 90 percent of the rated name plate capacity of the operating unit. EWEB shall conduct a portion of each test to measure the influence of the air admission system on TDG.

(2) Downstream of Powerhouses

EWEB shall record instantaneous TDG measurements at locations below the powerhouse tailraces during tests performed pursuant to Condition 8(a)(1) of these section 401 Certification Conditions to characterize the downstream extent and dissipation rate of TDG.

(3) Bypass Valve

Unless expressly authorized otherwise by DEQ, EWEB shall measure TDG below the discharge outfall of the Carmen powerhouse bypass valve during a pre-operational test of the system. Measurements must be initiated one hour prior to commencing the test and continue for six hours after opening the valve or completing the test, whichever comes first.

(4) Bypass Reach Release Structures

Within three months of establishing block releases to the Smith and Upper Carmen Bypass Reaches, EWEB shall measure TDG below each outfall according to the following schedule:

<u>Upper Carmen Bypass</u> Measure TDG and flow for 72 hours

Smith BypassMeasure TDG and flow for 72 hours: Between August 16 and October 31; Between November 1 and August 15

(5) Trail Bridge Dam

Within three months of beginning operation of the trap and haul facility, EWEB shall measure TDG below Trail Bridge. Measurements shall take place for a minimum of 72 hours, during operation of the trap and haul facility and modified spillway.

b) Reporting

EWEB shall submit TDG monitoring data to DEQ within three months of completing monitoring requirements described in Condition 8(a) of these section 401 Certification Conditions, unless expressly authorized otherwise by DEQ.

c) Adaptive Management

If monitoring data identify TDG measurements in excess of the numeric criterion, DEQ may require EWEB to submit a report analyzing the situation or may require additional monitoring or may require EWEB to prepare and submit to DEQ an operations plan which shall propose corrective measures to attain the TDG criteria in affected areas. Upon DEQ approval, EWEB shall submit the plan to FERC for approval. Upon FERC approval, EWEB shall implement the plan.

9. Bacteria and Bacteria Pollution

- a) EWEB shall verify the proper operation of on-site sewage systems by observing leach fields for signs of surfacing sewage at the time of removal of accumulated sludge from the septic tank at each on-site system.
- b) EWEB shall maintain written records of the on-site system septic tank pumping and of any visual observations of the operation and function of the leach field and other parts of the onsite system at the time of pumping.
- c) EWEB shall work directly with Linn County during planning, permitting, and inspection of new on-site septic systems installed at the Project under a new FERC License.
- d) EWEB operates four on-site systems installed prior to 1974 which are administratively approved until the systems fail or are significantly upgraded. Any administratively approved on-site system installed prior to 1974 which fails or is significantly modified shall be upgraded to current specifications and permitted and inspected by Linn County prior to being returned to service.

10. Toxic Substances; Solid Waste Management; and Spill Response

- a) EWEB shall maintain its current Spill Prevention, Control, and Countermeasure Plan in effect at all times in accordance with 40 CFR Part 112.
- b) In the event of a spill or release or threatened spill or release to state waters, EWEB shall implement the SPCC plan, or other applicable contingency plan, and notify the Oregon Emergency Response System (OERS) at 1-800-452-0311.
- c) Project maintenance that could result in accumulations of solid waste or other residues shall comply with DEQ regulations and permit requirements. EWEB employees and its contractors shall receive instruction and training designed to be sufficient to implement applicable prevention and emergency response plans and to respond to situations that could result in unauthorized discharges to waters of the State.
- d) EWEB shall manage staging areas in a manner which prevents the introduction of sediment, wastes, or hazardous materials into waters of the State in accordance with the Roads, Waste Areas, and Staging Areas Management Plan (Exhibit G to Settlement Agreement).

11. General

(a) Implementation

EW EB shall, before implementation or construction of any measures required under these section 401 Certification Conditions, provide evidence to DEQ that EWEB has received all required approvals, including but not limited to approvals required under the Settlement Agreement by "Fish Agencies" and/or the USDA Forest Service.

(b) Section 401 Certification Modification

DEQ, in accordance with Oregon and Federal law including OAR Chapter 340, Division 48 and, as applicable, 33 USC 1341, may modify this Certification to add, delete, or alter Certification conditions as necessary to address:

- Adverse or potentially adverse Project effects on water quality or designated beneficial uses that did not exist or were not reasonably apparent when this section 401 Certification was issued;
- (2) TMDLs (not specifically addressed above in these section 401 Certification Conditions);
- (3) Changes in water quality standards;
- (4) Any failure of these section 401 Certification Conditions to protect water quality or designated beneficial uses as expected when this section 401 Certification was issued; or
- (5) Any change in the Project or its operations that was not contemplated by this section 401 Certification that might adversely affect water quality or designated beneficial uses.

(c) Other Federal Permits

Upon applying for any federal license or permit authorizing a discharge to waters of the United States other than the new FERC license, EWEB shall provide DEQ written notice of such application and of any proposed changes or new activity requested to be authorized under the application since issuance of this section 401 Certification. DEQ will notify EWEB and the applicable federal agency either that: (1) this section 401 Certification is sufficient for purposes of the federal license or permit; or (2) in light of new information related to the water quality impacts of the activity requested to be authorized under the application, there is no longer reasonable assurance of compliance with state water quality standards. In the latter event, DEQ will consider the new information, solicit and consider public and agency comment as required by law, and issue a section 401 certification determination for purposes of the federal license or permit.

(d) Project Modification

EWEB shall obtain DEQ review and approval before undertaking any change to the Project that might significantly affect water quality (other than project changes authorized by the new FERC license or required by or considered in this section 401 Certification), including changes to Project structures, operations, and flows.

(e) Repair and Maintenance

EWEB shall obtain DEQ review and approval before undertaking Project repair or maintenance activities that might significantly affect water quality (other than repair or maintenance activities authorized by the new FEC license required by or considered in this section 401 Certification). DEQ may, at EWEB's request, provide such prior approval effective prospectively for specified repair and maintenance activities.

(f) Inspection

EWEB shall allow DEQ such access as necessary to inspect the Project area and Project records required by these section 401 Certification Conditions and to monitor compliance with these section 401 Certification Conditions, upon reasonable notice and subject to applicable safety and security procedures when engaged in such access.

(g) Posting

EWEB shall post or maintain a copy of these section 401 Certification Conditions at the Carmen-Smith Project Office.

12. Project Specific Fees

In accordance with ORS 543.080, EWEB shall pay project-specific fees, in 2010 dollars adjusted according to the formula in Condition 12c below, to DEQ and the Oregon Department of Fish and Wildlife (ODFW) for costs of overseeing implementation of this Certification.

a) Oregon Department of Environmental Quality

EWEB shall pay project-specific fees to DEQ, made payable to State of Oregon, Department of Environmental Quality, according to the following schedule:

FERC License	Annual Project-Specific Fee Subject to Adjustment	Due
Upon License Issuance	\$ 21,000 prorated to June 30	Within 30 days
Years 1 - 3	\$ 21,000	July 1
Years 4 – 6	\$ 17,300	July 1
Years 7 – 11	\$ 6,900	July 1

b) Oregon Department of Fish and Wildlife

EWEB shall pay project-specific fees to ODFW, payable to the State of Oregon, Department of Fish and Wildlife, in the amount of \$15,997 annually for a period of 15 years from FERC License issuance.

c) Annual Adjustment

Fee amounts shall be adjusted annually, according to the following formula:

AD = D x (CPI-U)/(CPI-U-June 2010)

Where:

AD = Adjusted dollar amount payable to agency.

- D = Dollar amount pursuant to Condition 12a and Condition 12b above,
- CPI-U = the most current published version of the Consumer Price Index-Urban. The CPI-U is published monthly by the Bureau of Labor Statistics of the U.S. Department of Labor. If that index ceases to be published, any reasonably equivalent index published by the Bureau of Economic Analysis may be substituted by written agreement between DEQ, ODFW, and EWEB.

d) Payment Schedule

Fees for each Agency shall be paid pursuant to a written invoice from DEQ and ODFW, as applicable. Except as provided below, project-specific fees shall be due on July 1 of each year following issuance of the new FERC License. EWEB shall pay an initial prorated payment to DEQ within 30 days of license issuance, for the period from the date of license issuance to the first June 30 which follows license issuance. EWEB shall begin payments to ODFW on the first July 1 after the new FERC license is issued.

e) Credits

DEQ and ODFW will credit against this amount any fee or other compensation paid or payable to DEQ or ODFW, directly or through other agencies of the State of Oregon, during the preceding year (July 1 to June 30) for DEQ's or ODFW's costs of oversight.

f) Expenditure Summary

Each agency receiving project specific fees shall, on a biennial basis, provide EWEB with a summary of project specific expenditures.

g) Duration

The DEQ fee shall expire 11 years after the first July 1 following the issuance of the new FERC license, unless DEQ terminates it earlier because oversight is no longer necessary. The ODFW fee shall expire 15 years after the first July 1 following the issuance of the new FERC license, unless ODFW terminates it earlier because oversight is no longer necessary. One year before the expiration of the fee, or earlier if mutually agreed, DEQ, ODFW, and EWEB shall review the need, if any, to modify, extend, or terminate the fee, in accordance with ORS 543.080. EWEB shall pay any project-specific fee required after such review as provided in ORS 543.080.

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

08-16-2018

Date

Keith Andersen Western Region Administrator