167 FERC ¶ 61,152
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;
Cheryl A. LaFleur, Richard Glick,
and Bernard L. McNamee.

Eugene Water & Electric Board Project No. 2242-078

ORDER ISSUING NEW LICENSE

(Issued May 17, 2019)

Introduction

1. On November 24, 2006, the Eugene Water and Electric Board (EWEB) filed, pursuant to sections 4(e) and 15 of the Federal Power Act (FPA),[1] an application for a new license to continue operating and maintaining the Carmen-Smith Hydroelectric Project No. 2242. The 91.995-megawatt (MW) project is located on the McKenzie and Smith Rivers in Lane and Linn Counties, near McKenzie Bridge, Oregon, and occupies about 574 acres within the Willamette National Forest.[2] As discussed below, this order issues a new license for the project.

Background

2. The Commission issued the current license for the project on January 8, 1959, with an effective date of December 1, 1958. That license expired on November 30, 2008.[3] EWEB has since operated the project under an annual license pending the disposition of its new license application.

[1] 16 U.S.C. §§ 797(e) and 808 (2012), respectively.

[2] Pursuant to section 23(b)(1) of the FPA, 16 U.S.C. § 816(b)(1) (2012), the project is required to be licensed because it occupies federal land.

[3] *City of Oregon, Or.,* 21 F.P.C. 16 (1959).

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3. On March 9, 2007, the Commission issued a public notice, accepting the application and setting May 8, 2007 as the deadline for filing notices and motions to intervene.[4] The U.S. Forest Service (Forest Service), the U.S. Department of the Interior (Interior), and the State of Oregon filed notices of intervention; the National Marine Fisheries Service (NMFS) filed a notice of intervention and comments.[5] The Confederated Tribes of the Warm Springs Reservation of Oregon (Warm Springs); Confederated Tribes of Siletz Indians of Oregon (Siletz); Confederated Tribes of the Grand Ronde Community of Oregon (Grand Ronde); jointly, Trout Unlimited, American Whitewater, Cascadia Wildlands Project, Oregon Wild, and McKenzie Flyfishers (referred to jointly as Trout Unlimited); and Bill Kloos[6] timely filed motions to intervene.[7] None of the intervenors oppose issuing a new license for the project.

4. On October 24, 2008, EWEB filed a Settlement Agreement (2008 Settlement Agreement) with the Commission.[8] In addition to EWEB, the settlement parties include: NMFS, U.S. Fish and Wildlife Service (FWS), Forest Service, Oregon Department of Environmental Quality (Oregon DEQ), Oregon Department of Fish and Wildlife (Oregon DFW), Oregon Parks and Recreation Department (Oregon Parks), Grand Ronde, Siletz, Warm Springs, American Whitewater, Cascadia Wildlands Project, Oregon Hunters Association, Oregon Wild, McKenzie Flyfishers, Rocky Mountain Elk Foundation, Inc., and Trout Unlimited. On November 14, 2008, the Commission issued a public notice of the settlement agreement; the notice also indicated that the application was ready for environmental analysis and set January 13, 2009 as the deadline to file comments, recommendations, terms and conditions, and prescriptions.[9] The Forest Service, NMFS, Trout Unlimited, and Interior filed comments and recommendations.

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[4] *See* 72 *Fed. Reg.* 12,172 (Mar. 15, 2007).

[5] Under Rule 214(a)(2) of the Commission's Rules of Practice and Procedure, these entities became parties to the proceeding upon timely filing of their notices of intervention. 18 C.F.R. § 385.214(a) (2018).

[6] Mr. Kloos withdrew his intervention on January 19, 2016.

[7] Timely, unopposed motions to intervene are granted by operation of Rule 214(c) of the Commission's Rules of Practice and Procedure. 18 C.F.R. § 385.214(c) (2018).

[8] EWEB filed two subsequent amendments to the Settlement Agreement on April 29, 2011, and June 30, 2011.

[9] *See* 73 *Fed. Reg*. 70,340 (Nov. 20, 2008).

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5. On September 17, 2009, Commission staff issued an Environmental Assessment (EA) for public comment. FWS, NMFS, Forest Service, Oregon DFW, Trout Unlimited, Rocky Mountain Elk Foundation, Inc., EWEB, and Ada June Tolliver filed comments.

6. On July 27, 2015, EWEB requested that the Commission delay its decision on the license while it reanalyzed the economic viability of the project.[10] A delay until January 31, 2016 was granted. On January 29, 2016, EWEB filed a revised project economic analysis, indicating that proposed fish passage measures made the project uneconomical. EWEB requested that the Commission continue to delay issuing the new license while EWEB and the settlement parties developed new, cost-effective fish passage alternatives. Two additional requests to delay the licensing decision were subsequently granted.

7. On November 30, 2016, EWEB filed an amended Settlement Agreement (2016 Settlement Agreement). The parties to the 2016 Settlement Agreement include: EWEB, NMFS, FWS, Forest Service, Oregon DEQ, Oregon DFW, Oregon Parks, Grand Ronde, Siletz, Warm Springs, McKenzie Flyfishers, Rocky Mountain Elk Foundation, Inc., and Trout Unlimited.

8. As discussed further below, under the terms of the 2016 Settlement Agreement, EWEB proposes to: install a new trap-and-haul system at the project's Trail Bridge Dam instead of a volitional fish ladder; provide fish access to the new trap-and-haul system by removing the existing tailrace barrier downstream of Trail Bridge Dam; and cease generation at the Trail Bridge power plant to pass fish downstream of Trail Bridge Dam through the existing spillway instead of screening the intake. The settlement parties also agree to implement aquatic and recreation measures that would occur in the McKenzie Wild and Scenic River corridor. These measures would not be included in the new license, to avoid conflicts with the Wild and Scenic Rivers Act.[11]

9. On December 2, 2016, the Commission issued a public notice seeking comments on the 2016 Settlement Agreement.[12] Letters supporting the 2016 Settlement Agreement were filed by NMFS, Forest Service, FWS, National Park Service, Oregon DFW, Trout Unlimited, and American Whitewater. No comments were filed in opposition.

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[10] According to EWEB, in 2008, when EWEB filed the 2008 Settlement Agreement, the power market price projection for 2016 was $100/megawatt-hour (MWh). By January 2016, it had dropped to $35/MWh.

[11] 16 U.S.C. § 1271 *et seq*. (2012).

[12] 81 *Fed. Reg*. 89,453 (Dec. 12, 2016).

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10. At the request of the settlement parties, Commission staff held a technical conference on March 29, 2017 to discuss the terms of the 2016 Settlement Agreement.[13] On May 24, 2017, the Commission issued a public notice seeking revised comments, recommendations, terms and conditions, and prescriptions.[14] The Forest Service, NMFS, Interior, and Oregon DFW filed comments and revised recommendations and conditions consistent with the 2016 Settlement Agreement. On August 28, 2017, EWEB filed reply comments. The interventions, comments, and recommendations have been fully considered in determining whether, and under what conditions, to issue this license.

Project Description

A. Existing Project Facilities

11. The Carmen-Smith Project consists of two developments—the Carmen development and the Trail Bridge development. The project stores water in three project reservoirs: Carmen diversion (on the McKenzie River), Smith (on the Smith River), and Trail Bridge (at the confluence of the McKenzie and Smith Rivers and receiving water from both). The project includes two powerhouses (Carmen and Trail Bridge), and bypasses a 5.7-mile-long reach of the McKenzie River and a 2.5-mile-long reach of the Smith River. The McKenzie River bypassed reach is divided by Tamolitch Falls into two reaches: the 3.4-mile-long Upper Carmen bypassed reach, which extends from the Carmen diversion dam to Tamolitch Falls,[15] and the 2.3-mile-long Lower Carmen bypassed reach, which extends downstream from Tamolitch Falls to Trail Bridge reservoir. The Smith River bypassed reach extends 2.5 miles downstream from Smith dam to Trail Bridge reservoir (see figure 1).

12. The 30-acre Carmen diversion reservoir, which is impounded by the 25-foot-high, 2,100-foot-long Carmen diversion dam on the McKenzie River at river mile 87.5, has minimal storage. Water from the Carmen diversion reservoir is diverted into the 2.2-mile-long underground Carmen diversion tunnel that discharges water into the 178-acre Smith reservoir located west of the Carmen diversion reservoir on the Smith River, a tributary of the McKenzie River. Spill from Carmen diversion dam is discharged to the Carmen bypassed reach, which then flows into the Trail Bridge reservoir located downstream on the McKenzie River.

[13] A summary of the March 29, 2017, technical conference by Commission staff was placed in the record on April 19, 2017. Responses to questions raised at the technical conference were filed by EWEB on April 28, 2017, and on May 11, 2017.

[14] 82 *Fed. Reg*. 24,961 (May 31, 2017).

[15] Tamolitch Falls is a natural upstream barrier to anadromous fish migration.

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13. The Smith reservoir is created by the 235-foot-high, 1,100-foot-long Smith dam, which is located at river mile 2.5 on the Smith River. From Smith reservoir, water enters the 1.4-mile-long underground Smith power tunnel and travels to a surge chamber for the Carmen penstock. From the surge chamber, water flows through the 1,160-foot-long Carmen penstock to the Carmen powerhouse, located at the upstream end of Trail Bridge reservoir. The Carmen powerhouse contains two generating units with Francis turbines and two generators, each with a nameplate capacity of 41.61 MW, for a total authorized capacity at Carmen of 83.220 MW.[16] Spill from Smith dam is discharged to the Smith River downstream of the dam and flows downstream through the 2.5-mile-long Smith bypassed reach into Trail Bridge reservoir. A 19-mile-long, 115-kilovolt (kV) transmission line[17] connects the Carmen substation, which is contiguous with the Carmen powerhouse, to the Bonneville Power Administration's Cougar-Eugene transmission line.

14. Water from the Carmen powerhouse is discharged into the 71-acre Trail Bridge reservoir, which is impounded by the 100-foot-high, 700-foot-long Trail Bridge dam at river mile 82 on the McKenzie River. Trail Bridge is used as a re-regulating development. Water in the Trail Bridge reservoir passes through the Trail Bridge penstock and Trail Bridge powerhouse or spillways before it is discharged to the McKenzie River downstream of Trail Bridge dam. The Trail Bridge powerhouse contains one Kaplan turbine and one generating unit with an authorized capacity at Trail Bridge of 8.775 MW.[18] The Trail Bridge powerhouse is connected to the Carmen substation by a 1-mile-long, 11.5-kV transmission line. The total capacity of the Carmen-Smith Project is 91.995 MW. A more detailed project description is contained in Ordering Paragraph (B)(2).

[16] Order Amending License and Revising Annual Charges, *Eugene Water & Electric Board*, 128 FERC ¶ 62,049 (2009).

[17] The 115-kV transmission line alignment includes a 2,640-foot-long segment located in the riparian area of Deer Creek Valley.

[18] Order Amending License and Revising Annual Charges, *Eugene Water & Electric Board*, 128 FERC ¶ 62,049.

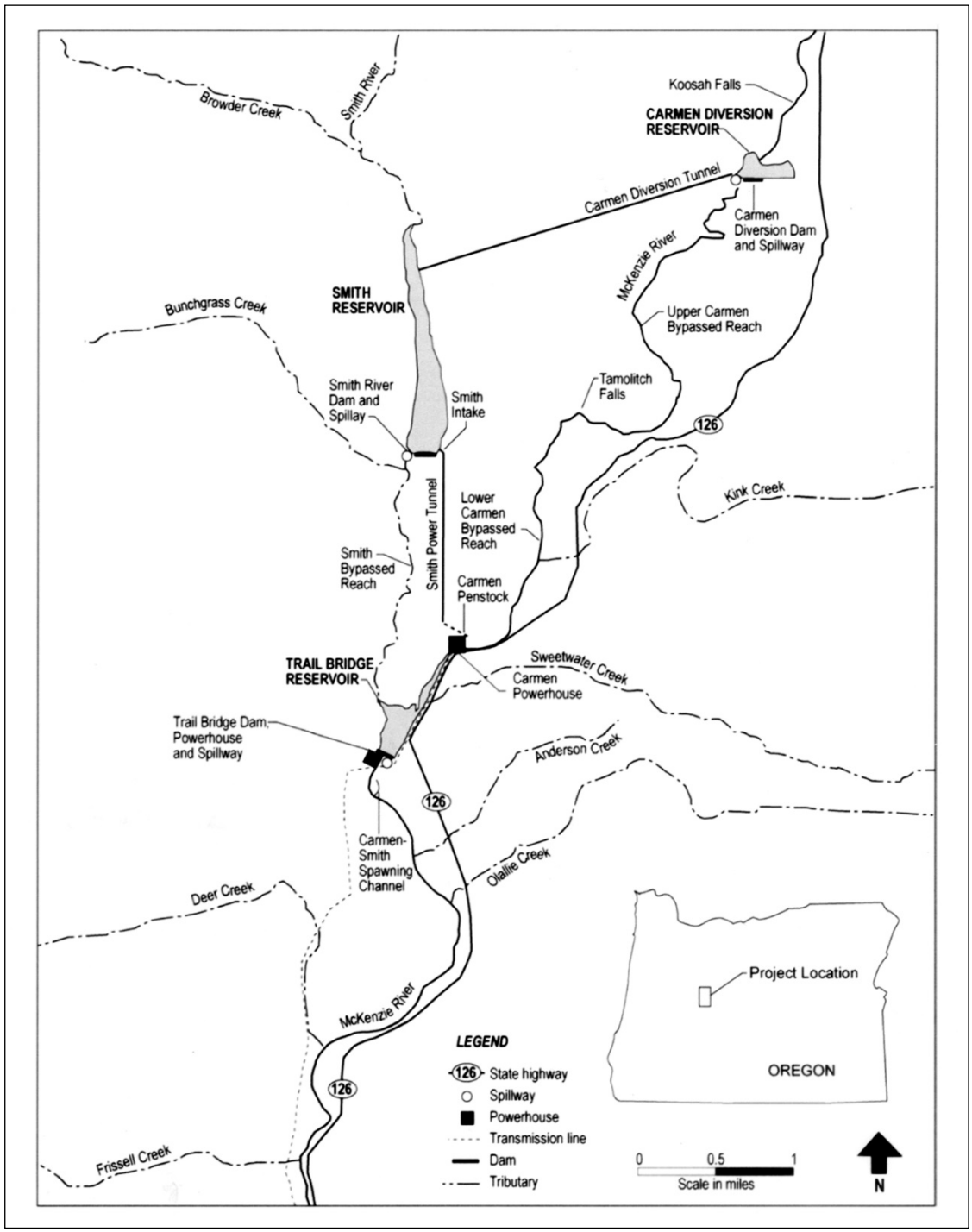

Figure 1. Location and project facilities of the Carmen-Smith Hydroelectric Project (Source: EWEB, 2006, as modified by staff).

15. There are no recreation facilities designated as project facilities under the current license. However, there are recreation areas that provide access to project land or water, including: Ice Cap Creek Campground and Day Use Area, Carmen Diversion Reservoir Day Use Area, Smith Reservoir Day Use Area, Lakes End Campground, and Trail Bridge Campground and Day Use Area. These recreation areas were built by or with funding provided by EWEB and are operated by EWEB and/or the Forest Service. The recreation areas provide campsites, boat launches and docks, hiking trails, day use areas, viewing areas, nature interpretation, and fishing access. There are also nine informal, dispersed recreation sites within or adjacent to the project boundary that are used for overnight camping and day use activities.

B. Project Boundary

16. The current project boundary encloses the lands occupied by the project features described above, and a salmon spawning channel constructed by EWEB below the Trail Bridge powerhouse.[19] The Exhibit G drawings filed with the license application identify most of the developed recreation areas, but do not include all of the lands associated with the developed recreation areas or the dispersed recreation areas.

C. Current Project Operation

17. The Carmen-Smith Project is operated as a peaking facility, using water stored in the three project reservoirs to generate at the two project powerhouses.

18. The Carmen powerhouse is operated as a peaking development. On a typical day, inflow into the Carmen diversion and Smith reservoirs approximates outflow at the tailrace of the Trail Bridge powerhouse. Drawing water from the Smith reservoir, the Carmen powerhouse generates from approximately 6:00 a.m. to 10:00 p.m.

19. Generation at the Carmen powerhouse is reduced during low water conditions (usually occurring from August to late October), when inflow to Smith reservoir is typically less than 500 cubic feet per second (cfs). During these conditions, only one of the Carmen units is operated and generation mainly occurs during peak demand hours. For the rest of the year, when inflows are greater, both units operate with a total hydraulic capacity of 2,850 cfs.

20. Trail Bridge reservoir is used to re-regulate discharges from the Carmen powerhouse by filling when the Carmen powerhouse is generating and lowering when it is not generating. Because water is always released through the Trail Bridge powerhouse to the McKenzie River, generation at the Trail Bridge facility is continuous, providing

[19] The 30-foot-wide by 1,000-foot-long Carmen-Smith spawning channel is located just downstream of the Trail Bridge powerhouse (see figure 1). It was constructed in 1960.

base load generation that varies only with McKenzie river flows. The total hydraulic capacity of the Trail Bridge powerhouse is 1,780 cfs. Inflow exceeding 1,780 cfs passes through the spillways. The current project license allows the project to operate such that the rate of change of the McKenzie River (ramping rate) below the Trail Bridge dam does not exceed 2 inches per hour. The maximum daily and weekly variation in flow below the dam must not exceed 4 inches per hour from April 20 through Labor Day and 7 and 9 inches, respectively, from October 20 through April 19. The current license also allows daily changes in the elevation of Trail Bridge reservoir of up to 7 feet from April 20 through Labor Day, with no limit on elevation changes the rest of the year.

21. The current license does not require EWEB to maintain minimum flows in either of the project's bypassed reaches.

D. Proposed Project Facilities, Operation, And Environmental Measures

22. EWEB proposes to continue operating the project in a peaking mode, but with several changes in facilities and operation to protect Chinook salmon and bull trout, and to increase operational flexibility. These changes include ceasing generation at Trail Bridge and only operating it for emergency, maintenance, and safety purposes once new fish passage facilities are installed; providing instream flow releases to the bypassed reaches; and modifying reservoir level regulation and ramping rates in the Smith bypassed reach, Trail Bridge reservoir, and the McKenzie River downstream of Trail Bridge dam. These measure are discussed further below.

23. Exhibit A of the 2016 Settlement Agreement contains 34 proposed license articles that the parties request that the Commission include in the license. Many of the proposed articles require implementing the six proposed plans filed as exhibits with the 2016 Settlement Agreement.[20] The requirements of each proposed license article are summarized below in the order in which they are presented in the 2016 Settlement Agreement.

24. Article 1 sets forth the consultation and agency approval process for EWEB to follow before taking specific actions. Article 2 requires EWEB to form the following

[20] The plans are: Amended and Restated Aquatics Management Plan (Exhibit B to the 2016 Settlement Agreement, hereinafter referred to as the Aquatics Management Plan), Recreation and Aesthetics Management Plan (Exhibit C), Wildlife Management Plan (Exhibit D), Vegetation Management Plan (Exhibit E), Historic Properties Management Plan (Exhibit F), and Roads, Waste Areas & Staging Areas Management Plan (Exhibit G). EWEB filed a revised Aquatics Management Plan on April 28, 2017 that includes missing pages that were inadvertently omitted from its November 30, 2016 filing.

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work groups to implement the 2016 Settlement Agreement's measures: a Fisheries Work Group; Vegetation Management Plan Work Group; Wildlife Management Plan Work Group; Historic Properties Management Plan (HPMP) Work Group; Recreation and Aesthetics Management Plan Work Group; Roads, Waste Areas, and Staging Areas Management Plan Work Group; Water Quality Management Plan (WQMP) Work Group; Transmission Line Management Plan Work Group; and Fire Response and Suppression Coordination Plan Work Group.

25. Article 3 requires EWEB to provide minimum instream flow releases to the Upper Carmen bypassed reach,[21] the Lower Carmen bypassed reach,[22] and the Smith bypassed reach;[23] a periodic channel maintenance flow greater than 500 cfs in the Smith bypassed reach;[24] the construction of flow release structures; the funding of new U.S. Geological Survey (USGS) gages in both bypassed reaches; and compliance monitoring. It also requires new operational guidelines to minimize spill and

[21] Within six years of license issuance, EWEB will provide a minimum "block flow" release of 30 cfs year-round from the Carmen diversion dam to provide cutthroat trout habitat in the Upper Carmen bypassed reach. A "block flow" release is a release from a controlled point that does not vary as flows within the reach increase or decrease, with a compliance point at the release structure.

[22] EWEB will provide additional flows above the required 30 cfs from the Carmen diversion dam to achieve a target flow of 160 cfs in the Lower Carmen bypassed reach to increase aquatic habitat and support increases in Chinook salmon, bull trout, and other native salmonid populations. The compliance point would be at the location of a new gage to be installed in the Lower Carmen bypassed reach in coordination with the U.S. Geological Survey (USGS) within three months of the effective date of the 2016 Settlement Agreement (November 30, 2016). The gage has been installed.

[23] Within six years of license issuance, EWEB will provide a minimum block flow release of 10 cfs from the Smith dam into the Smith bypassed reach from November 1 through August 15 and a minimum block flow release of 35 cfs from August 16 through October 31. EWEB will provide additional flow releases to achieve minimum instream flow of 30 cfs from November 1 through April 15 and 25 cfs from April 16 through August 15 at the new USGS gage that has been installed in the bypassed reach. These variable flow releases are designed to support Chinook salmon spawning and rearing.

[24] The channel maintenance flow will be released into the Smith bypassed reach for a five-hour period once every five years unless a flow of this magnitude and duration has already occurred during the five-year period.

downramping in the Smith bypassed reach.[25] When spill events do occur, EWEB will control flow releases from the Smith dam spillway gate to achieve downramping rates of 3 inches per hour in the Smith bypassed reach to minimize fish stranding. EWEB will also monitor reservoir levels and report on spill events at both Carmen and Smith dams.

26. Article 4 requires EWEB to implement measures in the Upper Carmen bypassed reach to support cutthroat trout. These measures include: non-native brook trout population control, constructing a small (5-10 cfs) fish ladder at the Carmen diversion dam if cutthroat trout are maintaining a large enough population and brook trout populations have been sufficiently reduced to justify construction of a ladder, a hydraulic and biological evaluation of the fish ladder, fish population monitoring, and spawning gravel availability monitoring.

27. Articles 5, 6, and 8 require EWEB to install and monitor habitat structures (e.g., boulders, root wads, etc.) in the Carmen diversion reservoir, Smith reservoir, and Trail Bridge reservoir, respectively, to increase habitat quality and quantity for juvenile and adult native salmonids within the reservoirs.

28. Article 7 requires EWEB to implement measures in the Smith bypassed reach to increase and maintain spawning habitat for spring Chinook salmon in the reach. These measures include: installing engineered spawning habitat structures; adding gravel and large woody debris (LWD); releasing flows to distribute the added gravel;[26] and monitoring the new habitat structures.

29. Article 9 requires EWEB to implement measures in the Carmen-Smith spawning channel to maintain and enhance Chinook salmon spawning and rearing habitat. The measures include: maintaining the existing gravel-retaining structures and an average

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[25] These changes include running the Carmen powerhouse at "speed no load" when generation is interrupted to continue to divert up to 300 cfs of water from Smith reservoir to Trail Bridge reservoir, installing and operating a new 800-cfs minimum capacity turbine bypass valve at the Carmen powerhouse to divert additional flows (minimum of 800 cfs) from Smith reservoir into Trail Bridge reservoir, and, if necessary, closing the gate at the Carmen diversion tunnel to stop flows from Carmen reservoir into Smith reservoir. EWEB will only close the Carmen diversion tunnel gate in the rare circumstance that the transmission line is down and Smith reservoir levels rise despite Carmen powerhouse running at speed no load and the new bypass valve being fully opened.

[26] EWEB will release "smoothing flows" to evenly distribute the added gravel. The "smoothing flows" would consist of three separate flows of at least 500 cfs for three hours each and one flow greater than 800 cfs for at least two hours.

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spawning gravel depth of 30 inches throughout the channel; continuing to provide an 80-cfs minimum flow to the channel; and developing and maintaining fry and juvenile rearing habitat (e.g., planting trees/shrubs to shade the channel).

30. Article 10 prohibits EWEB from fluctuating the water level of the Trail Bridge reservoir by more than 7 feet per day from March 15 to October 31 or 12 feet per day from November 1 through March 14 and restrict hourly fluctuation rates to between 12 and 38 inches per hour, depending on the time of year,[27] to minimize potential stranding of bull trout and Chinook salmon in Trail Bridge reservoir.

31. Article 11 requires EWEB to monitor for project-induced fish stranding in the Trail Bridge reservoir and achieve a "Stranding Standard" of not more than a 2 percent loss of the production of spring Chinook salmon fry based on a three-year rolling average. Article 11 also requires implementing an adaptive management strategy to minimize fish stranding if the monitoring efforts detect an exceedance of the "Stranding Standard," that could include physical habitat modifications and/or changes to project operation or facilities.[28]

32. Article 12 requires EWEB to limit fluctuations in the McKenzie River downstream of Trail Bridge dam by limiting upramping of flows to 2.4 inches per hour during normal operation and 4.8 inches per hour during scheduled maintenance involving a drawdown of Trail Bridge reservoir; limiting all downramping of flows to 2.4 inches per hour; and limiting the total change in water surface elevation in the McKenzie River on a daily and weekly basis to between 2.4 and 9.6 inches, depending on the time of year.[29] This article also requires compliance monitoring.

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[27] EWEB will restrict project-induced decreases in Trail Bridge reservoir water levels to no more than 12 inches per hour from March 15 through August 31, 14 inches per hour from September 1 through October 31, and 24 inches per hour from November 1 through March 14. EWEB will restrict project-induced increases in reservoir levels to no more than 38 inches per hour year round.

[28] Fish stranding monitoring would occur for a minimum of five years and could continue for up to 18 years depending on the results of monitoring and whether actions taken to reduce stranding have achieved the stranding standard.

[29] EWEB will limit the total change in water surface elevation in the McKenzie River downstream of Trail Bridge dam to 3.6 inches on a daily and weekly basis from April 1 through August 31, 2.4 inches on a daily and weekly basis from September 1 through October 31, and 7.2 inches on a daily basis and 9.6 inches on a weekly basis from November 1 through March 31.

33. Article 13 requires EWEB to implement procedures for collecting and stockpiling LWD, and selecting and prioritizing sites for using the LWD.

34. Article 14 requires EWEB to develop a water quality management plan to protect water quality during project operation. The plan will include objectives, performance standards, monitoring protocols, reporting schedules and procedures, adaptive management strategies, and an implementation schedule.

35. Article 15 requires annual reports describing implementation of the various project management plans.

36. Article 16 requires EWEB to develop a construction management plan for constructing the new fish passage and recreation facilities to protect water quality, aquatic resources, recreational use, and public safety during construction.

37. Article 17 requires EWEB to implement the proposed Vegetation Management Plan, which contains measures for: special-status and culturally significant plant species protection; noxious/invasive non-native weed control; selected riparian, wetland, and meadow area restoration and enhancement; revegetation and enhancement of disturbed areas; early seral[30] vegetation and dead wood habitat enhancement along portions of the transmission line; and late successional old-growth habitat protection.

38. Article 18 requires EWEB to implement the proposed Wildlife Management Plan, which contains provisions for: review of potential construction activity impacts on wildlife species and habitats before starting construction; seasonal restrictions on project construction, operation, and maintenance to protect special-status wildlife species; annual bald eagle surveys and development of management plans for any identified bald eagle nests; transmission line visibility improvements at reservoir and stream crossings to prevent avian collisions; restrictions on road access to improve elk habitat; management of at least 343 acres of project and non-project lands for wildlife and creation of a Terrestrial Wildlife Habitat Fund to fund that management;[31] prevention of non-native wildlife species introduction; and annual review of the occurrence or potential occurrence of listed species.

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[30] "Seral" refers to the succeeding stages of ecological communities that replace one another until a stable community in equilibrium with local conditions forms.

[31] The 343 acres of lands to be managed for wildlife consist of: Forest Service lands within the transmission line right-of-way; unspecified private lands adjacent to the current transmission line right-of-way over, which EWEB will exert best efforts to obtain conservation easements; unspecified EWEB lands above the Leaburg Canal; and unspecified lands in the general project vicinity.

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39. Article 19 requires EWEB to implement the HPMP and the Programmatic Agreement (PA) executed on May 17, 2010, between the Commission and the Oregon State Historic Preservation Officer (SHPO), which includes measures to protect cultural resources at the project.

40. Article 20 requires EWEB to implement the proposed Recreation and Aesthetics Management Plan (Recreation Plan), which includes operating and maintaining the existing recreation areas,[32] rehabilitating and enhancing existing recreation facilities; constructing new campsites, picnic areas, fishing docks, and stream gaging stations at various sites; constructing a new Carmen-Smith Visitor Kiosk near Trail Bridge reservoir; constructing a new shoreline access trail at Trail Bridge reservoir; and constructing a new fishing access trail along the Smith River downstream of Smith dam after closing the Smith Lo-level Road dispersed use area. The Recreation Plan also contains provisions for developing an interpretation and education program and a sign management plan.[33]

41. Article 21 requires EWEB to implement the proposed Roads, Waste Areas, and Staging Areas Management Plan, which includes measures for constructing, improving, managing, and maintaining roads, waste areas, and construction staging areas to minimize adverse effects on adjacent environmental resources.

42. Article 22 requires EWEB to develop a transmission line management plan that describes vegetation management within the 19-mile long, 115-kV project transmission line corridor and provides for relocating the 2,640-foot-long portion of the transmission line along Deer Creek Valley out of the riparian zone to allow vegetation to naturally increase shading and improve fish and wildlife habitat along the creek.

43. Article 23 requires EWEB to develop a fire response and suppression coordination plan to prevent and control fires within the project boundary.

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[32] Although improvements to the Ice Cap Creek Campground and Day Use Area and closing of the Ice Cap Creek and Fish Ladder Rapids dispersed use areas are described in the plan, they will be completed by EWEB outside the requirements of this license through a Forest Service special use authorization.

[33] Under the sign management plan, EWEB will provide signs that cite Oregon DFW's angling regulations and signs that designate areas with restricted angler access within the Trail Bridge reservoir. This signage is included as a condition of the license under Forest Service 4(e) Condition 3.

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44. Article 24 requires EWEB to file an intergovernmental agreement for occupancy and use of Forest Service lands, and Forest Service approval of changes after license issuance.

45. Article 25 requires that EWEB allow the Settlement Agreement signatories access to the project to inspect project facilities and records at any reasonable time with prior notice.

46. Article 26 requires EWEB to notify Oregon DFW, NMFS, and/or FWS (as specified) of any dead or injured northern spotted owls, Chinook salmon, bald eagles, peregrine falcons, or harlequin ducks.[34]

47. Article 27 reserves authority to the Commission to require fishways prescribed by the Secretaries of Commerce and/or Interior pursuant to section 18 of the FPA.

48. Article 28 requires EWEB to implement the fish passage provisions of the Aquatics Management Plan.[35]

49. Article 29 requires EWEB to construct a trap and haul fish passage facility at the Trail Bridge dam and remove the existing tailrace barrier below the dam to allow Chinook salmon, bull trout, and other native salmonids access to the trap and haul facility. The proposed article also requires hydraulic and biological monitoring to ensure that the facility is functioning as designed.

50. Article 30 requires EWEB to construct an upstream fish ladder with steps no higher than 6 inches at the entrance to the Carmen-Smith spawning channel and modify the upstream end of the spawning channel to provide passage back into the mainstem of the McKenzie River and to develop an operations and maintenance plan to ensure these facilities continue to operate as intended.

51. Article 31 requires EWEB to maintain the Trail Bridge reservoir elevation at 2,083 feet from August 15 through October 31 each year to aid adult bull trout passage through the existing Sweetwater Creek culvert to access spawning habitat in Sweetwater

[34] The northern spotted owl and Chinook salmon are federally listed as threatened under the Endangered Species Act (ESA). The bald eagle, peregrine falcon, and harlequin duck are Forest Service sensitive species; the bald eagle and northern spotted owl are also state-listed as threatened.

[35] Many of these provisions are also required by Proposed Articles 29 through 33.

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Creek and to monitor the effectiveness of Trail Bridge reservoir operations to provide bull trout entry into Sweetwater Creek.[36]

52. Article 32 requires EWEB to monitor the extent to which Carmen discharges delay migrating Chinook salmon from entering tributaries to Trail Bridge reservoir and the extent such discharges injure salmon and bull trout. If monitoring shows substantial delay or injury,[37] EWEB will identify possible modifications or additions to the project facilities or operations to mitigate the effects.

53. Article 33 requires EWEB to design, construct, operate, and maintain the Trail Bridge dam spillway, gate and hoist system, and attraction water supply ("AWS") for downstream fish passage at Trail Bridge dam.[38] After the modifications are complete, EWEB would conduct hydraulic and biological monitoring to ensure the system is functioning as designed. Once downstream passage is operational, EWEB will cease operating Trail Bridge powerhouse for the purposes of power generation to facilitate downstream passage and to avoid entrainment;[39] thereafter EWEB would only operate the powerhouse equipment for safety, maintenance, and emergency purposes.

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[36] A minimum depth of one foot of water is provided in the culvert at a reservoir elevation of 2,083 feet.

[37] The standard for significant delay of salmon is: operations will not delay "staged and spawn-ready" spring Chinook from entering the tributaries by more than 48 hours. The standard for significant injury and mortality is three or more adult fish (any combination of bull trout and Chinook salmon) observed dead or seriously injured in a calendar year.

[38] Modifications to the spillway and gate and hoist system would include: modifying the spillway gate to allow a 12-inch minimum opening to accommodate adult bull trout and Chinook salmon; modifying the "flip bucket" and other features to promote laminar flow, reduce turbulence, and eliminate the need to salvage adult fish from the flip bucket; installing a gate hoist mechanism to allow fine control of gate openings and spillway flows to meet required ramping rates; and modifying the tailrace configuration if needed to ensure safe landing and discharge conditions for fish as they exit the spillway.

[39] EWEB's commitment to forgo power generation in lieu of construction, operation, and maintenance of a fish screen and bypass system for downstream migrant fish was an important element of the 2016 Settlement Agreement. To ensure flow can be passed by the Trail Bridge dam during construction of passage facilities, EWEB may operate the Trail Bridge powerhouse until completion of the passage facilities.

54. Article 34 reserves authority to the Commission to require the implementation of such additional conditions identified by the Secretary of Agriculture for the protection and utilization of the reservation under the authority of the Forest Service.

E. Proposed Modifications to Project Boundary

55. Under the new license, EWEB proposes to include within the project boundary the existing communication and underground power link from the Carmen plant office up to and along Forest Service Road 2672-655, lands associated with the Smith Dam Emergency Access Road and some recreation areas.

Summary of License Requirements

56. This license, which authorizes the continued operation of the Carmen-Smith Project to generate 91.995 MW of renewable energy, requires the proposed measures and plans described above. With the exception of proposed Article 26 (reporting of harm to fish and listed wildlife), all of the proposed license articles are required through FPA sections 4(e) and 18 conditions, Oregon DEQ's water quality certification conditions, and/or NMFS and FWS incidental take terms and conditions. Most are incorporated into this license by reference through the mandatory conditions. Thus, for information purposes, the proposed articles are included as Appendix G.

57. To facilitate Commission administration of the license, the license also requires the filing of revised Exhibit G drawings showing all project recreation facilities that will be maintained by EWEB (e.g., Carmen Diversion Reservoir Day Use Area, Smith Reservoir Day Use Area, Lakes End Campground, and Trail Bridge Campground and Day Use Area) and the land to be managed for wildlife. The license also requires EWEB to report to the Commission deviations from the operational requirements of the license and any unanticipated circumstance or emergency situation that results in the endangerment or harm to fish or wildlife by the project or its operation.

Wild and Scenic Rivers Act

58. Section 7(a) of the Wild and Scenic Rivers Act (Rivers Act)[40] prohibits the Commission from licensing "the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works" that would be located on or directly affect any river Congress has designated as a component of the National Wild and Scenic Rivers System or that Congress later designates for inclusion in that system. Section 7(a) also prohibits the Commission from licensing any project works below or above a wild or scenic river that would "invade" or "unreasonably diminish" the scenic, recreational, and fish and wildlife values there. Section 7(a) does not bar the issuance of

[40] 16 U.S.C. § 1278(a) (2012).

a license for the continued operation of a project where no new construction is proposed in the wild and scenic river.

59. On October 28, 1988, Congress designated 12.7 miles of the McKenzie River as a wild and scenic river, from Clear Creek to Scott Creek, under the Omnibus Oregon Wild and Scenic Rivers Act of 1988. The McKenzie Wild and Scenic River begins 1.8 miles upriver from the head of the Carmen diversion reservoir and extends 6.6 miles downriver from Trail Bridge Dam. The Forest Service manages the McKenzie Wild and Scenic River segment to protect and enhance five remarkable values (scenic, recreation, geologic, water quality, and fish) for which the river segment was designated, while also providing for public recreation and resource uses that do not adversely impact or degrade those values.

60. The Carmen-Smith Project was constructed and operating prior to the designation of the McKenzie River, and the project dams and reservoirs have been excluded from the designated area. The Smith River is also outside of the Wild and Scenic River corridor. The Upper and Lower Carmen bypassed reaches are within the designated corridor but are not enclosed by the current project boundary.[41]

61. The Forest Service filed its preliminary 7(a) determination on January 23, 2009. In its determination, the Forest Service found that the operational modifications and measures proposed by EWEB within the designated area would not have direct and adverse effects on the river and would not unreasonably diminish river values, and that several proposed actions that would take place within the McKenzie Wild and Scenic River corridor (e.g., replacement of recreation facilities, aquatic habitat improvements) would enhance the scenic, recreation, and fish values for which the river was designated. On October 16, 2009, the Forest Service filed a letter stating that its preliminary 7(a) determination should be considered final.

62. In the EA,[42] staff recommended that EWEB implement the Aquatics Management Plan and Recreation Plan. However, upon further review, Commission staff found that these plans included a number of mitigation measures that would require construction within the McKenzie Wild and Scenic River corridor, contrary to the Rivers Act's prohibition on the Commission authorizing construction within a component of the Wild and Scenic River System. Therefore, on March 22, 2012, Commission staff held a technical conference in Springfield, Oregon to discuss the conflict between the

[41] On August 17, 2012, the Forest Service published notice in the Federal Register of corrections to the McKenzie Wild and Scenic River boundary that remove from the boundary certain of the Carmen-Smith facilities (i.e., toe of Trail Bridge dam) and parts of the existing project boundary.

[42] EA at 165-66, 170, and 172.

mandatory license conditions that required construction activities within the McKenzie Wild and Scenic River corridor, and the limitations imposed by the Rivers Act.

63. The Forest Service subsequently revised the boundary of the McKenzie Wild and Scenic River corridor. The boundary changes, which became effective November 11, 2012, enable the Commission to authorize all of the measures in the Aquatics Management Plan and Recreation Plan, except the following five activities which would entail construction within the McKenzie Wild and Scenic River corridor: (1) placing gravel in the vicinity of Transect No. 7 in the Upper Carmen bypassed reach; (2) placing gravel and LWD in the Lower Carmen bypassed reach;[43] (3) rehabilitating the existing Ice Cap Creek Campground and Day Use Area; (4) closing existing, dispersed recreation areas at Ice Cap Creek and Fish Ladder Rapids; and (5) retaining a parking area and spur road for boaters.

64. On June 3, 2013, the Forest Service filed a revised and final 7(a) determination that superseded the earlier 7(a) determination filed on March 13, 2013. In the June 3, 2013 filing, the Forest Service identified the mitigation measures that it determined are located outside the McKenzie River Wild and Scenic River corridor and should be included in the license pursuant to its 4(e) authority.

65. During renegotiations of the fish passage measures, EWEB and the settlement parties agreed to pursue the five construction activities outside of the FERC license through a Forest Service special use authorization.[44]

66. On July 21, 2017, the Forest Service again revised its 7(a) determination based on the 2016 Settlement Agreement but did not modify its conclusions in the supporting 7(a) determination report. The revised, proposed license articles, which are mandatory conditions under section 4(e) of the FPA, no longer require gravel augmentation in the vicinity of Transect No. 7 in the Upper Carmen bypassed reach (Proposed Article 4), or the recreation improvements at Ice Cap Creek Campground and Day Use Area, and the dispersed recreation areas at Ice Cap Creek and Fish Ladder Rapids (Proposed Article 20). Although the parties intended to exclude the aquatic habitat improvement actions in the Lower Carmen bypassed reach, the revised, proposed articles do not explicitly exclude these actions.[45] Therefore, Ordering Paragraphs (D), (E), and (I) exclude these measures from the license.

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[43] The Aquatics Management Plan contemplates constructing access roads to facilitate delivery of the gravel. Construction of any temporary or permanent access roads would also be barred by the provisions of the Wild and Scenic Rivers Act.

[44] *See* section 2.9 of the 2016 Settlement Agreement.

[45] The settlement parties and the mandatory conditioning agencies clearly intended *(continued ...)*

Water Quality Certification

67. Under section 401(a)(1) of the Clean Water Act (CWA),[46] the Commission may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency either has issued water quality certification for the project or has waived certification by failing to act on a request for certification within a reasonable period of time, not to exceed one year. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project.[47]

68. On January 3, 2011, Oregon DEQ issued a certification for the project that included 12 conditions based on the proposed measures and agreed-upon terms in the 2008 Settlement Agreement.

69. Subsequently, EWEB and the settlement parties renegotiated the terms of the 2008 Settlement Agreement for more cost-effective fish passage facilities, which culminated in the 2016 Settlement Agreement. On February 21, 2017, EWEB requested that Oregon DEQ review the 2016 Settlement Agreement and, if necessary, modify the 2011 certification to reflect changes in its proposal for the project. On August 16, 2018, Oregon DEQ issued a modified certification containing 12 conditions that are set forth in Appendix A of this order and incorporated into the license by Ordering Paragraph (D), except as noted below.

70. Conditions 11 and 12 are general or administrative in nature and not discussed further. The remaining 10 conditions include specific requirements for the filing of the Water Quality Monitoring and Management Plan with the Oregon DEQ and the Commission for approval (condition 1); the release of minimum flows, implementation of ramping and reservoir fluctuation rates, implementation of activities designed to increase fish spawning and rearing habitat in project waters, and providing upstream and downstream fish passage facilities to comply with biological criteria (condition 2); and measures for the protection and monitoring of water quality related to sediments,

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to exclude the aquatic habitat improvements in the Lower Carmen bypassed reach. Section 2.9.1 of the 2016 Settlement Agreement specifically identifies gravel augmentation and the associated road necessary for adding gravel in the Lower Carmen bypassed reach in the list of measures that would be pursued outside of the license. The settlement parties also proposed that the new license include an ordering paragraph that approves the Aquatics Management Plan except for the gravel augmentation activities in the Lower Carmen bypassed reach. This license does so through Ordering Paragraphs (D), (E), and (I).

[46] 33 U.S.C. § 1341(a)(1) (2012).

[47] 33 U.S.C. § 1341(d).

dissolved oxygen, pH, temperature, turbidity, total dissolved gases, bacterial pollution, and toxic substances in the project area (conditions 3 through 10). These requirements are consistent with the proposed license articles of the 2016 Settlement Agreement. While condition 1 requires the Water Quality Management Plan to be filed with the Commission for approval, it does not specify when the plan is to be filed. Article 404 requires the plan to be filed within 18 months of license issuance.

71. Unlike the 2016 Settlement Agreement, which identifies gravel augmentation and the associated road necessary for adding gravel in the Lower Carmen bypassed reach in the list of measures that would be pursued outside of the license, Condition 2(e) requires the licensee to undertake all habitat enhancement activities designed to increase spawning and rearing habitat in project reservoirs and bypass reaches in accordance with the proposed license articles and Aquatics Management Plan. On October 25, 2018, Oregon DEQ informed Commission staff that condition 2(e) includes requiring the placement of gravel and LWD in the Lower Carmen bypassed reach and, if needed, the construction of an associated access road to facilitate delivery of the gravel.[48] As discussed in the Wild and Scenic Rivers Act section of this order, the Commission cannot include these measures in the license because to do so would authorize construction within the McKenzie Wild and Scenic River corridor. Because the Commission is barred from authorizing these activities by the Wild and Scenic Rivers Act, Ordering Paragraph (D) excludes all measures related to gravel augmentation in the Lower Carmen bypassed reach except for providing the "smoothing flows" to be periodically released to distribute any gravel that may be added to the bypassed reach through the Forest Service special use authorization.

Coastal Zone Management Act

72. Under section 307(c)(3)(A) of the Coastal Zone Management Act (CZMA),[49] the Commission cannot issue a license for a project within or affecting a state's coastal zone unless the state CZMA agency concurs with the license applicant's certification of consistency with the state's CZMA program, or the agency's concurrence is conclusively presumed by its failure to act within six months of its receipt of the applicant's certification.

73. The Oregon Department of Land Conservation and Development (Oregon Land Conservation and Development) manages Oregon's Coastal Zone Management Program (CZMP). Oregon's coastal zone boundary extends from the Washington border to the

[48] *See* record of telephone conference on October 25, 2018, between Chris Stine (Oregon DEQ) and Michael Tust (Commission) (filed October 26, 2018).

[49] 16 U.S.C. § 1456(c)(3)(A) (2012).

California border, east to the crest of the Coast Range Mountains, and west to about 3 miles out to sea to the outer limits of Oregon's territorial waters.

74. In a letter filed November 4, 2009, the Oregon Land Conservation and Development notified the Commission that the project is neither within the Oregon coastal zone nor within a geographic area in which the department would review licenses for consistency with the CZMP. Therefore, certification is not required.

Section 4(E) Findings And Conditions

75. Section 4(e) of the FPA[50] provides that the Commission can issue a license for a project located within a federal reservation only if it finds that the license will not interfere or be inconsistent with the purpose for which such reservation was created or acquired.

76. Staff has reviewed the Organic Administration Act of 1897,[51] which established the purposes for forest reservations, and the executive order that created the Willamette National Forest.[52] There is no evidence or allegation in this proceeding to indicate that relicensing of the Carmen-Smith Hydroelectric Project would interfere with the purposes of the Willamette National Forest within which the project is located. Therefore, this license, as conditioned, will not interfere or be inconsistent with the purposes for which the Willamette National Forest was created.

77. FPA section 4(e) further requires that Commission licenses for projects located within federal reservations include all conditions that the Secretary of the department under whose supervision the reservation falls shall deem necessary for the adequate protection and utilization of such reservation. Approximately 574 acres out of the total 634 acres within the current project boundary are located in the Willamette National Forest, which is under the Forest Service's supervision.

78. The Forest Service filed its final section 4(e) conditions on October 16, 2009, and filed modified terms and conditions on May 6, 2011. On July 24, 2017, the Forest Service filed modified terms and conditions which reflect the terms of the 2016 Settlement Agreement and supersede the previously issued conditions. The 2017 modified terms and conditions are set forth in Appendix B of this order and incorporated

[50] 16 U.S.C. § 797(e).

[51] 16 U.S.C. § 473 *et seq.* (2012).

[52] The Willamette National Forest was created by executive order issued April 6, 1933 (Executive Order No. 6104). At that time, the Organic Administration Act of 1897, 16 U.S.C. § 475 (2012) stipulated that all national forest lands were established and administered only for watershed protection and timber production.

into the license by Ordering Paragraph (E), except as noted below. The Forest Service conditions require EWEB to: comply with the provisions of the 2016 Settlement Agreement that would be implemented on or affect National Forest System (NFS) lands and resources; implement the 2016 Settlement Agreement's Proposed Articles 1-13 (including the provisions of the Aquatics Management Plan), 15-25, and 28-34; implement an intergovernmental agreement that EWEB entered into with the Forest Service on October 22, 2008; and avoid disturbance of public land survey monuments, private property corners, and forest boundary markers. The conditions also reserve the Forest Service's authority to modify the conditions if the Commission materially modifies or does not accept the terms of the 2016 Settlement Agreement.

79. While the EA[53] recommended most of the above conditions, Commission staff did not recommend certain measures contained in the Wildlife Management Plan and the Aquatics Management Plan that are required to be included in this license by Forest Service 4(e) Condition 3.

80. The Wildlife Management Plan measures that staff did not recommend are: (1) managing a minimum of 343 acres of project and non-project lands for wildlife; and (2) establishing a Terrestrial Wildlife Habitat Fund in which EWEB would contribute $20,000 annually (adjusted for inflation) for the term of the new license. Commission staff did not recommend managing the wildlife lands or establishing the wildlife habitat fund, because the plan lacks sufficient detail to evaluate the benefits of the proposed measures and to determine if the types of activities that would be implemented or funded are needed to address a project effect or would benefit wildlife resources affected by the project. Nevertheless, these two measures are included in this license because they are mandatory under section 4(e) of the FPA.

81. To facilitate administration of the license, Article 203 requires that the wildlife lands be brought into the project boundary and that EWEB file revised Exhibit G drawings identifying the wildlife lands within two years of license issuance.

82. As discussed above, the Forest Service 4(e) conditions did not explicitly exclude gravel augmentation activities in the Lower Carmen bypassed reach as was the intention of the settlement parties. Because the Commission is barred from authorizing these activities by the Wild and Scenic Rivers Act, Ordering Paragraph (E) excludes all measures related to gravel augmentation in the Lower Carmen bypassed reach except for providing the "smoothing flows" to be periodically released to distribute gravel that may be added to the bypassed reach through the Forest Service special use authorization.

[53] *See* EA at 165-68.

(continued ...)

83. Section 4.3.6.5 of the Aquatics Management Plan requires EWEB to provide funding to the Forest Service for a Forest Service protection officer (up to ½ full-time equivalent) to enforce and provide information about fishing regulations. Commission staff did not recommend that this measure be included in the license.[54]

84. A licensee is free to enter into agreements outside of its license to provide services, as long as the agreements entail no conflict with the license or the FPA. Funding as contemplated by Condition 3, must be consistent with the requirements of sections 10(e) and 17 of the FPA.[55] Pursuant to section 10(e), the Commission collects annual charges from licensees to reimburse the United States for the costs incurred in administering Part I of the FPA, including costs incurred by other federal agencies. Section 17 specifically provides that "the proceeds of charges made by the Commission for the purpose of reimbursing the United States for the costs of administration of this Part shall be paid into the Treasury of the United States and credited to miscellaneous receipts." Because the funding measure is contrary to the express terms of the FPA, the Commission cannot enforce it. Therefore, Ordering Paragraph (E) excludes this funding measure.[56]

85. Forest Service Condition 4 requires EWEB to implement the requirements of an Amended Intergovernmental Agreement that was originally executed between the Forest

[54] As part of the 2008 settlement, EWEB proposed to fund a state trooper for the same purposes as it now proposes to fund the Forest Service protection officer. Staff did not recommend funding of a state trooper because the Commission has no way of ensuring that the hiring of personnel paid for by the licensee would actually accomplish a project purpose or ameliorate a project-related effect (see EA at 119).

[55] 16 U.S.C. § 803(e) and 810(b) (2012). *See, e.g*. *City of Seattle, Washington*, 142 FERC ¶ 62,231 (2013); *Gibson Dam Hydroelectric Company*, *LLC*, 138 FERC ¶ 62,019 (2012).

[56] The same holds true for the project-specific fees required by Condition 12 of Oregon DEQ's water quality certification. *See* Appendix A, at A-14-16. Ordering Paragraph (D) excludes this measure. While we include these measures in the Appendices because we have no authority to revise mandatory conditions, we cannot enforce them. *See, e.g., Blue Heron Hydro, LLC*, 140 FERC ¶ 61,049 (2012) (including certification conditions in appendix while noting their unenforceability).

86. Service and EWEB on October 22, 2008.[57] Under the terms of the Intergovernmental Agreement, work that is required to be performed by EWEB under the new license may, by mutual agreement, be performed by the Forest Service, in which case EWEB is required to make advance deposits to reimburse the Forest Service for the work.[58] EWEB also agrees to provide annual funding during the term of the new license to the Forest Service for the Forest Service's review and approval of EWEB's project-related activities, on NFS lands, that are for the benefit of recreation, fish, and wildlife, including the enhancement of fish and wildlife habitat.[59] Reimbursements to the Forest Service and annual funding are to be made through the use of a collection agreement with the licensee and in accordance with a schedule of payments made directly to the Forest Service.[60]

87. Similar to the Forest Service funding measure discussed above, reimbursement agreements, such as the one contemplated by Condition 4, must comply with the requirements of sections 10(e) and 17 of the FPA. Because the cost reimbursement schedule set forth in the Intergovernmental Agreement contemplates the Forest Service setting and directly receiving annual charges, it is contrary to the express terms of the FPA. Therefore, the cost reimbursement schedule is excluded from the license.

Section 18 Fishway Prescription

88. Section 18 of the FPA[61] provides that the Commission shall require the construction, maintenance, and operation by a licensee of such fishways as may be prescribed by the Secretary of the Interior or the Secretary of Commerce, as appropriate.

89. Interior and Commerce filed preliminary fishway prescriptions on January 13, 2009, and January 14, 2009, respectively. On July 20, 2017, both NMFS and Interior filed revised fishway prescriptions consistent with the 2016 Settlement Agreement. Interior's prescriptions are identical to the 2016 Settlement Agreement's

[57] On October 24, 2018, EWEB filed a copy of the original Intergovernmental Agreement Between the Eugene Water & Electric Board and U.S. Department of Agriculture, Forest Service and Amendment #1, which amends provisions of the agreement related to fire protection measures.

[58] *See* General Consideration No. 6 of the Intergovernmental Agreement at page 7.

[59] *See* General Consideration No. 7 of the Intergovernmental Agreement at page 7.

[60] *See* the schedule of payments attached as Exhibit A to the Intergovernmental Agreement.

[61] 16 U.S.C. § 811 (2012).

Proposed Articles 28 through 33; NMFS' prescriptions are identical to Proposed Articles 28, 29, 30, 32, and 33.

90. The agencies' prescriptions require construction of a trap and haul facility to provide upstream fish passage at Trail Bridge dam, removal of the tailrace barrier below Trail Bridge dam, modification of the Trail Bridge spillway and project operations to provide downstream passage at Trail Bridge dam, fish protection measures at the Carmen powerhouse tailrace, biological monitoring and adaptive management, and upstream fish passage at the Carmen-Smith spawning channel to connect the spawning channel back to the river's mainstem. Interior's and Commerce's prescriptions are set forth in Appendices C and D, respectively, of this order and are incorporated into this license by Ordering Paragraphs (F) and (G), respectively.

91. In its July 20, 2017 filings, both the Secretaries of Interior and Commerce requested that the Commission reserve authority to prescribe fishways. Article 403 reserves the Commission's authority to require fishways that may be prescribed by the Secretaries of Interior and/or Commerce for the Carmen-Smith Project.

Essential Fish Habitat

92. Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act)[62] requires federal agencies to consult with the Secretary of Commerce regarding any action or proposed action authorized, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH) identified under the Act. Under section 305(b)(4)(A) of the Magnuson-Stevens Act, NMFS is required to provide EFH Conservation Recommendations for actions that would adversely affect EFH.[63] Under section 305(b)(4)(B) of the Act, [64] an agency must, within 30 days after receiving recommended conservation measures from NMFS or a Regional Fishery Management Council, describe the measures proposed by the agency for avoiding, mitigating, or offsetting the effects of the agency's activity on EFH.[65]

[62] 16 U.S.C. § 1855(b)(2) (2012).

[63] 16 U.S.C. § 1855(b)(4)(A).

[64] 16 U.S.C. § 1855(b)(4)(B).

[65] The measures recommended by the Secretary of Commerce are advisory, not prescriptive. However, if the federal agency does not agree with the recommendations of the Secretary of Commerce, the agency must explain its reasons for not following the recommendations.

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93. The McKenzie River within the project vicinity includes habitat that has been designated as EFH for Chinook salmon. In the EA,[66] staff concluded that relicensing the project would have minor, short-term adverse effects on EFH for Chinook salmon. By letter dated September 25, 2009, Commission staff initiated formal consultation with NMFS under the Endangered Species Act (ESA) and section 305(b) of the Magnuson-Stevens Act. In its May 3, 2011, biological opinion for the project, NMFS included an analysis of the project's effects on Chinook salmon EFH. NMFS concluded that the proposed relicensing would adversely affect EFH Pacific Coast salmon, but that full implementation of the terms and conditions of its incidental take statement would be sufficient to conserve EFH.

94. On August 15, 2017, Commission staff reinitiated consultation under the ESA and section 305(b) of the Magnuson-Stevens Act to address the effects of the 2016 Settlement Agreement measures on Chinook salmon. On April 12, 2018, NMFS issued its biological opinion and EFH response.[67] NMFS has adopted the terms and conditions identified in the incidental take statement of the biological opinion (with the exception of Term and Condition 8) as the EFH conservation recommendations to avoid, minimize, or otherwise offset potential adverse effects on EFH. NMFS concluded that the proposed action will have adverse effects on designated EFH for Chinook salmon; however, these adverse effects would be avoided or minimized and EFH would be protected, provided that the protection measures included in the biological opinion incidental take statement are implemented by EWEB.

95. As discussed below, this license includes all of the protection measures contained in the incidental take statement within NMFS' biological opinion, except the provision to augment spawning gravel in the McKenzie Wild and Scenic River corridor and the provision to fund a Forest Service protection officer.

Threatened And Endangered Species

96. Section 7(a)(2) of the Endangered Species Act of 1973[68] requires federal agencies to ensure their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of their designated critical habitat.

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[66] *See* EA at 12.

[67] NMFS filed a revised biological opinion and EFH response on August 16, 2018, which contained certain non-substantive corrections to make the language in the biological opinion consistent with the 2016 Settlement Agreement but stated that the effective date of the biological opinion remains April 12, 2018.

[68] 16 U.S.C. § 1536(a) (2012).

97. There are three federally listed threatened species known to occur in the project vicinity that Commission staff evaluated in the EA for potential effects of relicensing: bull trout, the northern spotted owl, and the Upper Willamette River (UWR) Chinook salmon. Critical habitat is designated in the McKenzie River and selected tributaries within the project area for UWR Chinook salmon and bull trout. Critical habitat is designated in the project area for northern spotted owl.

A. Bull Trout and Northern Spotted Owl

98. Staff concluded in the EA[69] that relicensing the project as recommended by staff would be likely to adversely affect bull trout and northern spotted owl (see section 3.3.3.2 of the EA), but would not affect bull trout and spotted owl critical habitat because no such habitat had been designated in the project area at that time. By letter dated September 25, 2009, staff requested formal consultation with FWS.

99. On December 14, 2010, FWS filed a biological opinion with its determinations that relicensing the project is not likely to jeopardize the continued existence of bull trout and northern spotted owl, and is not likely to adversely modify bull trout critical habitat.[70]

100. Subsequently, on December 4, 2012, FWS published a final designation of critical habitat for the northern spotted owl that expanded the range of critical habitat to include land within the project area. In addition, EWEB added new construction activities and modifications to previously identified actions that could result in a change to the project's effects on the northern spotted owl. By letters dated July 15, 2014 and January 21, 2015, staff requested formal consultation with FWS, concluding that relicensing the project as recommended by staff would be likely to adversely affect the northern spotted owl and its critical habitat.[71] On June 4, 2015, FWS filed a revised biological opinion concluding that relicensing the project is not likely to jeopardize the continued existence of the northern spotted owl and is not likely to adversely modify spotted owl critical habitat.

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[69] *See* EA at 7-8.

[70] Effective November 17, 2010, FWS revised the bull trout critical habitat designation to include the McKenzie and Smith Rivers and the Carmen-Smith spawning channel.

[71] Staff determined that there would be no change in the effects to bull trout or bull trout critical habitat resulting from the new construction activities and modifications to previously identified actions. Thus, staff only reinitiated consultation on the effects to the spotted owl and its critical habitat.

(continued ...)

101. On August 15, 2017, staff reinitiated formal consultation on bull trout and its critical habitat to address the adverse effects of implementing the revised fish passage measures contained in the 2016 Settlement Agreement. Staff did not reinitiate consultation for the northern spotted owl and its critical habitat because the actions proposed in the 2016 Settlement Agreement would not result in effects beyond those already analyzed in the FWS' June 4, 2015 biological opinion, and the effects to designated critical habitat would be less because there would be less ground disturbance and habitat removal. In reinitiating consultation on bull trout, staff included in its proposed action all of the measures in the 2016 Settlement Agreement except those that would take place in the McKenzie Wild and Scenic River corridor.[72]

102. On January 18, 2018, FWS filed its biological opinion which concluded that relicensing the project under the suite of actions considered in the 2016 Settlement Agreement is not likely to jeopardize the continued existence of bull trout or result in the adverse modification of its critical habitat. The FWS filed a revised biological opinion on August 3, 2018, that contained the same conclusions for bull trout and bull trout critical habitat.[73] FWS included two reasonable and prudent measures (RPMs) to minimize the effects of anticipated incidental take of bull trout and two incidental take terms and conditions to implement the RPMs. The take terms and conditions require EWEB to monitor and report take of bull trout and to implement best management practices to minimize harm and injury to bull trout when handling bull trout (e.g., trap and haul, etc.).

103. In its August 3, 2018 biological opinion, FWS agreed that reinitiating consultation on the northern spotted owl and its critical habitat was not necessary and stated that its June 2015 biological opinion remains valid for actions under the 2016 Settlement Agreement. The June 2015 biological opinion included three RPMs to minimize the effects of anticipated incidental take of northern spotted owl and six incidental take terms and conditions to implement the RPMs. This license includes conditions that implement FWS' RPMs and terms and conditions by requiring the licensee to monitor the effects of the project against current spotted owl data in compliance with FWS methodology and report spotted owl impacts annually; update the spotted owl analysis before starting construction using the most recent Geographic Information System data layers for owl

[72] On September 18, 2017, the Forest Service initiated formal consultation on the 2016 Settlement Agreement for the actions within the McKenzie Wild and Scenic River corridor that would be authorized through a special use permit issued to EWEB.

[73] FWS filed a revised biological opinion which contained certain non-substantive corrections to make the language in the biological opinion consistent with the 2016 Settlement Agreement. The corrected opinion had an effective date of August 1, 2018, and replaced the previous biological opinion that was filed on January 18, 2018.

(continued ...)

activity centers and habitat; change construction plans if the effects to spotted owls are greater than anticipated within the biological opinion; report annually on adverse effects to spotted owls and all impacts to spotted owl habitat associated with project construction activities; conduct blasting[74] in a manner that would eliminate the potential for disruption of spotted owl nesting by delaying blasting as late into the year as possible near an owl nesting site unless the site has been documented as non-nesting.

104. All of these measures are contained in the Settlement Agreement. The terms and conditions for bull trout and spotted owl are included in Appendix E (FWS' Biological Opinion, Terms and Conditions) and are made part of this license by Ordering Paragraph (H).

105. FWS also included the following discretionary conservation recommendations to further the conservation and protection of threatened and endangered species: (1) delay all activities that may disturb spotted owls as late as possible into the nesting season; (2) provide a financial contribution to USGS' barred owl research program; (3) discourage angling in the Trail Bridge Reservoir at the mouth of Sweetwater Creek culvert (e.g., installing a floating buoy line to delineate the area around the culvert outlet in which fishing is not allowed, and add additional signs to educate anglers on fishing regulations and bull trout identification, etc.); and (4) incorporate biological considerations of sea lamprey in the project design, objectives, and best management practices.

106. FWS' conservation recommendations 1 and 3 are already required through provisions in EWEB's Wildlife Management Plan (Forest Service's 4(e) Condition 3, Ordering Paragraph (E) and Aquatics Management Plan (Forest Service's 4(e) Condition 3, Ordering Paragraph (E).

107. While barred owls inhabit the project area and compete with northern spotted owls for nesting sites,[75] this license does not require EWEB to contribute funds to the USGS' barred owl research program because such a general funding measure provides no assurance that any such funds would ameliorate a project-related effect or would directly benefit northern spotted owls in the project area.

108. Although the FWS does not explain what aspects of the project need to consider sea lamprey, we assume they are referring to the design and construction of upstream and downstream fish passage facilities at Trail Bridge Dam; habitat restoration projects in the bypassed reaches, spawning channel, and Trail Bridge Reservoir; and in the

[74] Blasting would be needed to remove bedrock to construct the Trail Bridge fish passage facilities.

[75] *See* EA at 73.

(continued ...)

implementation of operational measures for flow and water quality, as was recommended by NMFS in its conservation recommendation. Although sea lamprey may have been historically present upstream of Trail Bridge Dam,[76] EWEB did not document any lamprey during fisheries surveys conducted in project waters in 2004 and 2005,[77] and the relative abundance and importance of upstream habitat to the historical and existing sea lamprey population in the McKenzie River is not known. In addition, the FWS recommendation is too vague to implement. Further Standard license Article 15 provides the FWS and NMFS with a means to request that the Commission reopen the license to address lamprey if needed.

B. Upper Willamette River Chinook Salmon

109. In the EA,[78] staff concluded that licensing the project, as recommended by staff, would be likely to adversely affect the federally threatened UWR Chinook salmon and its critical habitat (see section 3.3.3.2 of the EA). By letter dated September 25, 2009, staff requested formal consultation with NMFS.

110. On May 3, 2011, NMFS filed a biological opinion with its determinations that the project is not likely to jeopardize the continued existence of the UWR Chinook salmon, or destroy or adversely modify designated critical habitat for the UWR Chinook salmon. NMFS also concluded that the project would not be likely to adversely affect the endangered Southern Resident killer whale.[79]

111. In its biological opinion, NMFS included eight RPMs to minimize the effects of anticipated incidental take of listed Chinook salmon. NMFS included twenty-two incidental take terms and conditions to implement the RPMs.

112. On August 15, 2017, staff reinitiated formal consultation on UWR Chinook salmon and its critical habitat to address the adverse effects of implementing the 2016 Settlement Agreement. On October 20, 2018, staff requested NMFS concurrence that relicensing the project under the terms of the 2016 Settlement Agreement may affect, but

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[76] *See* EA at 35.

[77] *See* EA at 36.

[78] *See* EA at 7-8 and 87.

[79] Relicensing the project would not directly affect Southern Resident killer whales, which use coastal water habitat from central California to northern British Columbia. However, relicensing the project could indirectly affect this species if it reduces the abundance of Chinook salmon, an important prey species for Southern Resident killer whales.

would not be likely to adversely affect the Southern Resident killer whale Distinct Population Segment; NMFS filed its concurrence on October 26, 2018.

113. On April 12, 2018, NMFS filed its biological opinion which concluded that relicensing the project with the terms of the 2016 Settlement Agreement would not jeopardize the threatened UWR Chinook salmon, nor would it adversely modify critical habitat for the species. NMFS filed a corrected biological opinion on August 16, 2018 which contained the same conclusions.

114. In its August 16, 2018 biological opinion, NMFS included eight RPMs to minimize the effects of anticipated incidental take of listed Chinook salmon. NMFS included thirty-four incidental take terms and conditions to implement the RPMs.

115. This license includes conditions that address NMFS' RPMs and terms and conditions by requiring the licensee to: follow all portions of the Settlement Agreement "that relate to Chinook salmon (including, but not limited to, passage, aquatic habitat conditions (e.g., flows and habitat restoration), recreation, and construction and monitoring)" except adding and maintaining gravel and LWD in the Lower Carmen bypassed reach, which as discussed earlier is precluded from the license by the Wild and Scenic Rivers Act, and providing funding for a Forest Service protection officer to enforce and provide information about fishing regulations, which as discussed earlier is contrary to the FPA; follow all terms and conditions and requirements in the Oregon DEQ 401 Water Quality Certification (except for the gravel augmentation in the Lower Carmen bypassed reach), the WQMP, the section 404 permit and the National Pollutant Discharge Elimination System (NPDES) permit; maintain and carry out the Spill Prevention, Control, and Countermeasure Plan as required by the 401 Water Quality Certification; maintain and carry out the Erosion and Sediment Control Plan as described in NPDES permits 1200-C and 1200-CA; develop a construction management plan in consultation and subject to approval by NMFS; capture and release Chinook salmon that are trapped in water quality limited or de-watered areas; minimize spill at Smith dam and consult with NMFS on the appropriate size of the Carmen powerhouse bypass valve; install instream flow gages in the Smith and Lower Carmen bypassed reaches; implement an interpretation and education program that includes posting signs about fishing restrictions for ESA-listed Chinook salmon; file plans and reports dealing with Chinook salmon protection measures; and use best management practices when collecting and handling Chinook salmon in the field. The terms and conditions of NMFS' biological opinion are included in Appendix F and are made part of this license by Ordering Paragraph (I), with the exceptions noted.

116. NMFS also included a discretionary conservation recommendation in its biological opinion that recommends EWEB consider the needs of Pacific lamprey. This measure is not included in the license for the reasons discussed under FWS' conservation recommendations.

National Historic Preservation Act

117. Under section 106 of the National Historic Preservation Act (NHPA)[80] and its implementing regulations,[81] federal agencies must take into account the effect of any proposed undertaking on properties listed or eligible for listing in the National Register of Historic Places (defined as historic properties) and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. This generally requires the Commission to consult with the SHPO to determine whether and how a proposed action may affect historic properties, and to seek ways to avoid or minimize any adverse effects.

118. To satisfy these responsibilities, the Commission executed a PA with the Oregon SHPO and invited EWEB, the Forest Service, Warm Springs, Grand Ronde, and Siletz to concur with the stipulations of the PA. EWEB and the Forest Service concurred. The PA requires the licensee to implement its HPMP[82] for the term of any new license issued for the project. Carrying out the measures in the PA and HPMP will protect historic properties that may be affected by the project. Execution of the PA demonstrates the Commission's compliance with section 106 of the NHPA. Forest Service 4(e) condition 3 requires the licensee to implement the PA and HPMP.

Pacific Northwest Electric Power Planning and Conservation Act

119. In 1980, Congress enacted the Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act).[83] This act created the Northwest Power Planning Council (now known as the Northwest Power and Conservation Council) and directed it to develop a Columbia River Basin Fish and Wildlife Program (Program). The Program is to protect, mitigate, and enhance fish and wildlife resources affected by the development and operation of hydroelectric projects on the Columbia River and its

[80] 16 U.S.C. § 470 *et seq*. (2012).

[81] 36 C.F.R. pt. 800 (2014).

[82] Appendix A of the HPMP is the Manual for Built Resources dated October 2008. This manual was inadvertently omitted from the privileged version of the HPMP filed on November 30, 2016. The manual was included in the redacted (public) version of the HPMP filed with the Settlement Agreement on November 30, 2016.

[83] 16 U.S.C. § 839(b) *et seq*. (2012).

(continued ...)

tributaries, while assuring the Pacific Northwest an adequate, efficient, economical, and reliable power supply.[84] Section 4(h)(11)(A) of the Northwest Power Act[85] provides that federal agencies operating or regulating hydroelectric projects within the Columbia River Basin shall exercise their responsibilities to provide equitable treatment of fish and wildlife resources with other purposes for which the river system is utilized and shall take the Council's Program into account "at each relevant stage of decision-making processes to the fullest extent practicable."

120. To mitigate harm to fish and wildlife resources, the Council has adopted specific provisions to be considered in the licensing or relicensing of non-federal hydropower projects (Appendix B of the Program). This license includes conditions consistent with applicable provisions of the Program, as discussed in more detail in the EA.[86] As part of the Program, the Council has designated over 40,000 miles of river in the Pacific Northwest region as not being suitable for hydroelectric development ("protected area"). The project is not located within a protected area designated under Appendix B of the Program. Further, Article 405 reserves to the Commission the authority to require future alterations in project structures and operations to take into account, to the fullest extent practicable, the applicable provisions of the Program.

Recommendations of Federal and State Fish And Wildlife Agencies Pursuant To Section 10(j) of The FPA

121. Section 10(j)(1) of the FPA[87] requires the Commission, when issuing a license, to include conditions based on recommendations submitted by federal and state fish and wildlife agencies pursuant to the Fish and Wildlife Coordination Act,[88] to "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

122. In response to the November 14, 2008, public notice that the project was ready for environmental analysis, Oregon DFW, NMFS, and Interior filed recommendations under section 10(j).[89] In response to the May 24, 2017 notice soliciting revised terms and

[84] 16 U.S.C. § 839(b)(h)(5) (2012).

[85] 54 U.S.C. § 300101 *et seq*. (Pub. L. No. 113-287, 128 Stat. 3187, Dec. 19, 2014).

[86] *See* EA at 9.

[87] 16 U.S.C. § 803(j)(1).

[88] 16 U.S.C. §§ 661 *et seq*. (2012).

[89] Oregon DFW, NMFS, and Interior filed recommendations on January 12, 2009, *(continued ...)*

conditions following the filing of the 2016 Settlement Agreement, each agency filed revised recommendations.[90] In total, 21 recommendations were filed under section 10(j) that were identical to proposed license articles in the 2016 Settlement Agreement.[91]

123. This license includes 20 of the proposed license articles through mandatory license conditions [Ordering Paragraphs (D), (E), (F), and (G)]. These include recommendations to: provide instream flows and ramping rates; manage reservoir levels and spill events in project reservoirs and bypassed reaches; construct, operate, and maintain upstream and downstream fish passage facilities and meet fish passage standards; implement habitat enhancement measures for resident and anadromous fish (except adding gravel and maintaining LWD in the Lower Carmen bypassed reach, which are precluded by the Wild and Scenic Rivers Act) in the reservoirs, bypassed reaches, and salmon spawning channel; and implement management plans for construction, vegetation, terrestrial resources, and transmission lines.

124. Parts of the Wildlife Management Plan and Aquatics Management Plan were found to be outside the scope of section 10(j), but are required by mandatory conditions, as discussed in the next section. The remaining 10(j) recommendation, notifying state and federal agencies when dead or injured threatened or sensitive species are encountered is not a specific measure to protect, mitigate damages to, or enhance fish and wildlife. Therefore it is also considered under the broad public interest standard of section 10(a)(1) of the FPA in the next section.

Section 10(a)(1) of the FPA

125. Section 10(a)(1) of the FPA[92] requires that any project for which the Commission issues a license be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce; for the improvement and utilization of waterpower development; for the adequate protection, mitigation, and enhancement of fish and wildlife; and for other beneficial uses, including irrigation, flood control, water supply, recreation, and other purposes.

January 14, 2009, and January 13, 2009, respectively.

[90] NMFS and Interior filed revised recommendations on July 20, 2017 and Oregon DFW filed revised recommendations on July 24, 2017.

[91] Oregon DFW recommended pursuant to section 10(j) proposed Articles 3-13 and 17-33; Interior recommended proposed Articles 3-18 and 22; and NMFS recommended proposed Articles 3, 7-13, and 31.

[92] 16 U.S.C. § 803(a)(1) (2012).

(continued ...)

A. Interior, NMFS, and Oregon DFW Recommendations

126. Pursuant to section 10(j), Interior and Oregon DFW recommended the implementation of the Wildlife Management Plan, and Interior, NMFS, and Oregon DFW recommended the implementation of the Aquatics Management Plan. Both plans contain measures that are not specific measures to protect, mitigate damages to, or enhance fish and wildlife. Consequently, these recommended measures are not considered under section 10(j) of the FPA, but rather under the broad public interest standard of section 10(a)(1).[93]

127. For the reasons previously discussed, Commission staff did not recommend the following measures; however, they are required in this license under section 4(e) of the FPA and NMFS' incidental take statement under section 7 of the ESA: (1) managing a minimum of 343 acres of project and non-project lands for wildlife (Condition 3 of Appendix B); and (2) establishing a Terrestrial Wildlife Habitat Fund (Condition 3 of Appendix B).[94]

128. To facilitate administration of the license, Article 203 requires EWEB file revised Exhibit G drawings identifying the wildlife lands within two years of license issuance.

B. Recreation Facilities

129. In accordance with the Recreation Plan required by this license (Condition 3 of Appendix B), EWEB must operate, maintain, and improve the following existing developed recreation areas: the Carmen Diversion Reservoir Day Use Area, the Smith Reservoir Day Use Area, the Lakes End Campground, and the Trail Bridge Campground and Day Use Area. EWEB must also maintain the following dispersed recreation use areas: Smith Reservoir east shoreline, Smith Reservoir Road, EWEB staging area, Two Point Road, Peggy Creek Road, and Towers 100-102. New recreation facilities that will be constructed include the Carmen-Smith Visitor Kiosk and Smith Lo-level Road fishing access trail. Because these developed recreation sites, dispersed use areas, and new facilities will be operated and maintained as project facilities, they must be brought into the project boundary. In addition, the Exhibit G drawings filed with the license application only label a few recreation facilities. Therefore, Article 203 requires the licensee to file revised Exhibit G drawings identifying and enclosing within the project boundary all of the project recreation sites and dispersed use areas that EWEB will operate and maintain under the license.

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[93] 16 U.S.C. § 803(a)(1) (2012).

[94] *See* EA at 168-70.

C. Transmission Line Emissions

130. On October 15, 2009, Ms. Pamela Hardy, on behalf of her client Ms. Ada June Tolliver, filed comments on staff's environmental analysis regarding the impacts of radio frequency radiation, micro-wave radiation used in communications technology, and the extremely low frequencies created by power lines at the Carmen-Smith Project. Ms. Hardy stated that Ms. Tolliver lives "in the McKenzie River Valley near power lines used to transmit the electricity that will be generated by the proposed project, and in between two of the communications antennas used by EWEB to operate the existing dams." Based on an Internet search, it appears that Ms. Tolliver's residence is located in Leaburg, Oregon, approximately 19 miles west of the Carmen-Smith transmission line at its nearest point and approximately 40 miles southwest of the project's radio/communications building, located approximately 800 feet from the surge chamber for the Carmen penstock.

131. Currently there are no federal standards limiting exposure to electromagnetic fields (EMF) from power lines. The Environmental Protection Agency (EPA) recommends that people concerned about possible health risks reduce their exposure to EMF by increasing the distance between them and the source.[95] Because the Carmen-Smith transmission line is approximately 19 miles from Ms. Tolliver's residence, adverse effects associated with any EMF specifically from the power line at the Carmen-Smith Project are unlikely. Likewise, because the radio/communications building is approximately 40 miles from Ms. Tolliver's residence, adverse effects associated with radio frequency radiation or micro-wave radiation associated with the radio/communications building are unlikely.

D. Notification and Reporting Of Operational Deviations

132. Although EWEB is required to monitor compliance with the various operation limits specified in the license through the mandatory conditions (Appendix A, condition 2 and Appendix B, condition 3), it would only report deviations from those operational limits to the Commission in its annual reports. To ensure that the Commission is timely notified of such deviations and that appropriate actions are being implemented to address those events, Article 401 requires that EWEB not only notify the Forest Service, Oregon DFW, NMFS, and FWS within 24 hours of deviations from the project's minimum flow, ramping rates, and reservoir elevation limits and to take immediate steps to correct the problem, it must also notify the Commission within 10 days of the event and report what actions were taken to correct the problem within 30 days.

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[95] *See* the *EPA Electric and Magnetic Fields (EMF) Radiation from Power Lines,* www.epa.gov/radtown/ electric-and-magnetic-fields-power-lines.

(continued ...)

E. Notification and Reporting of Unanticipated Events Resulting in Harm to Fish and Wildlife

133. With respect to the recommendation that state and federal agencies be notified when dead or injured threatened or sensitive species are encountered,[96] in the EA, staff recommended that EWEB notify the resource agencies of unanticipated events that result in the harm to fish, bald eagle, northern spotted owl, peregrine falcon or harlequin duck as proposed in Article 26.[97] To ensure that the Commission is aware of these events, Article 402 requires EWEB to notify the Commission within 10 days of such events, and file a report within 30 days of the event that describes: (a) the nature and chronology of the event, (b) the circumstances that led up to the event, (c) any observed or reported adverse environmental impacts resulting from the event, (d) any corrective actions taken, and (e) any recommended measures to reduce the likelihood of similar events recurring in the future.

Administrative Provisions

A. Annual Charges

134. The Commission collects annual charges from licensees for administration of the FPA. Article 201 provides for the collection of funds for administration of the FPA and use and occupancy of U.S. lands.

B. Exhibit F and G Drawings

135. The Commission requires licensees to file sets of approved project drawings in electronic file format. Article 202 requires the filing of the approved Exhibit F drawings (Ordering Paragraph (C)).

136. Because the Exhibit G drawings filed on October 10, 2017, do not identify and enclose all project recreation areas in the project boundary, the Exhibit G drawings cannot be approved. Article 203 requires EWEB to file revised Exhibit G drawings to include these facilities.

137. Because the lands that would be managed for wildlife may require further modifications to the Exhibit G drawings, Article 203 requires EWEB to file revised Exhibit G drawings once the wildlife lands are identified.

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[96] *See* P 123, *supra*.

[97] *See* EA at 167.

C. Headwater Benefits

138. Some projects directly benefit from headwater improvements that were constructed by other licensees, the United States, or permittees. Article 204 requires the licensee to reimburse such entities for these benefits if they were not previously assessed and reimbursed.

D. Use and Occupancy of Project Lands and Waters

139. Requiring a licensee to obtain prior Commission approval for every use or occupancy of project land would be unduly burdensome. Therefore, Article 406 allows the licensee to grant permission, without prior Commission approval, for the use and occupancy of project lands for such minor activities as landscape planting. Such uses must be consistent with the purposes of protecting and enhancing the scenic, recreational, and environmental values of the project.

E. Review of Final Plans and Specifications

140. Article 301 requires the licensee to provide the Commission's Division of Dam Safety and Inspection Portland Regional Office (D2SI-PRO) with final contract drawings and specifications—together with a supporting design report consistent with the Commission's engineering guidelines.

141. Article 302 requires the licensee to provide the Commission's D2SI-PRO with cofferdam construction drawings.

142. To insure that the structural modifications for environmental requirements such as fish passage, minimum flows, and ramping do not adversely affect the project works, dam safety, or project operation, Article 303 requires that the planning and design of such modifications shall be coordinated with the Commission's D2SI-PRO.

143. Where new construction or modifications to the project are required, the Commission requires licensees to file revised drawings of project features as-built. Article 205 provides for the filing of these drawings.

State and Federal Comprehensive Plans

144. Section 10(a)(2)(A) of the FPA[98] requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.[99] Under

[98] 16 U.S.C. § 803(a)(2)(A).

[99] Comprehensive plans for this purpose are defined at 18 C.F.R. § 2.19 (2018).

(continued ...)

section 10(a)(2)(A), federal and state agencies filed 140 comprehensive plans that address various resources in Oregon. Of these, the staff identified and reviewed 36 comprehensive plans that are relevant to this project.[100] No conflicts were found.

Applicant's Plans and Capabilities

145. In accordance with sections 10(a)(2)(C) and 15(a) of the FPA,[101] Commission staff evaluated EWEB's record as a licensee for these areas: (A) conservation efforts; (B) compliance history and ability to comply with the new license; (C) safe management, operation, and maintenance of the project; (D) ability to provide efficient and reliable electric service; (E) need for power; (F) transmission services; (G) cost effectiveness of plans; and (H) actions affecting the public

A. Conservation Efforts

146. Section 10(a)(2)(C) of the FPA requires the Commission to consider the extent of electricity consumption efficiency improvement programs in the case of license applicants primarily engaged in the generation and sale of electric power, like EWEB. Each year, EWEB offers detailed energy audits for its residential customers through programs like the Commercial Energy Efficient New Construction Program and the Large Industrial Motor Rebate Program. EWEB also expanded its budget for customer programs to include information programs, engineering and auditing services, and grants and rebates. For its long-term commitment to customer energy efficiency improvement, EWEB updated its Integrated Energy Resource Plan, which focused on developing new renewables, improving existing renewable resources, and expanding the energy efficiency resource of customer conservation. These programs show that EWEB is making an effort to conserve electricity and has made a good faith effort to comply with section 10(a)(2)(C) of the FPA.

[100] A list of 29 applicable plans can be found in section 5.5 of the EA for the project. After the EA's issuance, federal and state agencies filed the following comprehensive plans pursuant to section 10(a)(2)(A) of the FPA: Northwest Power and Conservation Council Columbia River Basin Fish and Wildlife Program, dated October 2014; Seventh Northwest Conservation and Electric Power Plan, dated February 2016; 25-Year Recreational Angling Enhancement Plan, dated February 2009; Upper Willamette Recovery Plan, dated August 2007; Recovery Plan for Southern Resident Killer Whales, dated January 2008; Oregon Conservation Strategy, dated February 2006; and Oregon Natural Heritage Plan, dated 2003. Staff reviewed these seven plans and found no conflicts.

[101] 16 U.S.C. §§ 803(a)(2)(C) and 808(a).

B. Compliance History and Ability to Comply with the New License

147. Based on a review of EWEB's compliance with the terms and conditions of the existing license, staff finds that EWEB's overall record of making timely filings and compliance with its license is satisfactory. Therefore, staff believes that EWEB can satisfy the conditions of a new license.

C. Safe Management, Operation, and Maintenance of the Project

148. Staff has reviewed EWEB's management, operation, and maintenance of the Carmen-Smith Project pursuant to the requirements of 18 C.F.R. Part 12 and the Commission's Engineering Guidelines and periodic Independent Consultant's Safety Inspection Reports. Staff concludes that the dams and other project works are safe, and that there is no reason to believe that EWEB cannot continue to safely manage, operate, and maintain these facilities under a new license.

D. Ability to Provide Efficient and Reliable Electric Service

149. Staff has reviewed EWEB's plans and its ability to operate and maintain the project in a manner most likely to provide efficient and reliable electric service. Staff's review indicates that EWEB regularly inspects the project turbine generator units to ensure they continue to perform in an optimal manner. EWEB has also routinely performed operation and maintenance upgrades at the project's powerhouses and transmission lines. Since the project has been in operation, EWEB schedules maintenance to minimize effects on energy production, and has undertaken several initiatives to ensure the project is able to operate reliably into the future. Staff concludes that EWEB is capable of operating the project to provide efficient and reliable electric service in the future.

E. Need for Power

150. EWEB is Oregon's largest customer-owned utility and provides electricity, water, and steam to more than 86,000 homes, businesses, schools, and other customers in Eugene, Oregon. The Carmen-Smith Project has an installed capacity of 91.995 MW and will generate approximately 160,286 MWh per year, enough energy to supply about 11,700 homes.

151. The North American Electric Reliability Corporation (NERC) annually forecasts electrical supply and demand nationally and regionally for a 10-year period. The Carmen-Smith Project is located in the Northwest Power Pool (NWPP) area of the Western Electricity Coordinating Council (WECC) region of the NERC. WECC's 10-year coordinated plan summary for the 2015-2024 period projected a winter demand growth rate of 1.63 percent, and summer demand growth rate of 1.36 percent. Capacity additions totaling over 9,500 MW are planned for the NWPP area for the 2015-2024 time

period, including 1,206 MW of wind generation, 3,162 MW of natural-gas-fired generation, and 3,990 MW of solar generation.

152. Power from the Carmen-Smith Project will continue to meet part of EWEB's customers' growing needs as well as meet part of the regional need for power.

F. Transmission Service

153. The project includes a 1-mile-long, 11.5-kV transmission line that connects the Trail Bridge powerhouse to the Carmen substation; and a 19-mile-long, 115-kV transmission line that connects the Carmen substation to the Bonneville Power Administration's Cougar-Eugene transmission line (together, the two project transmission lines create a single, contiguous, transmission line corridor). EWEB is proposing no changes that would affect its own or other transmission services in the region. The project and project transmission lines are important elements in providing power and voltage control to the city of Eugene and the region.

G. Cost Effectiveness of Plans

154. EWEB plans to make a number of facility and operational modifications to both improve project generating capability and enhance environmental resources affected by the project. Based on EWEB's record as an existing licensee, staff concludes that these plans are likely to be carried out in a cost-effective manner.

H. Actions Affecting the Public

155. EWEB provided extensive opportunity for public involvement in the development of its application for a new license for the Carmen-Smith Project. During the previous license period, EWEB provided facilities to enhance public use of project lands and facilities, and operated the project with consideration for the protection of downstream uses of the McKenzie River. EWEB uses the project to help meet local power needs.

Project Economics

156. In determining whether to issue a new license for an existing hydroelectric project, the Commission considers a number of public interest factors, including the economic benefits of project power. Under the Commission's approach to evaluating the economics of hydropower projects, as articulated in *Mead Corp*., *Publishing Paper Division*[102] the Commission uses current costs to compare the costs of the project and likely alternative power with no forecasts concerning potential future inflation, escalation, or deflation beyond the license issuance date. The basic purpose of the Commission's economic analysis is to provide a general estimate of the potential power

[102] 72 FERC ¶61,027 (1995).

benefits and the costs of a project, and of reasonable alternatives to project power. The estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license.

157. In applying this analysis to the Carmen-Smith Project, we considered: no action and EWEB's proposal, as licensed herein. Under the no-action alternative, the project would continue to operate as it has under its current license. The project has a total capacity of 91.995 MW, a dependable capacity of 13.7 MW, and an average annual generation of 259,429 MWh. The project currently has an average annual power value of $13,404,490 ($51.67/MWh), and annual production cost (levelized over the 30-year period of analysis) of $8,342,610 ($32.16/MWh), and an annual net benefit of $5,061,880 ($19.51/MWh). In other words, the project would produce energy at a cost that is less than that of currently available alternative generation by $19.51/MWh.

158. As proposed by EWEB and licensed herein, the project would operate as specified in the 2016 Settlement Agreement. The project's total capacity would be 91.995 MW with a dependable capacity of 11 MW, and an average annual generation of 160,286 MWh.[103] The project would have an average annual power value of $8,768,680 ($54.71/MWh), an annual production cost (levelized over the 30-year period of analysis) of $17,743,960 ($110.70/MWh), and an annual net benefit of −$8,975,280 (−$55.99/MWh). In other words, the project would produce energy at a cost that is more than that of currently available alternative generation by $55.99/MWh.

159. In considering public interest factors, the Commission takes into account that hydroelectric projects offer unique operational benefits to the electric utility system (ancillary service benefits). These benefits include the ability to help maintain the stability of a power system, such as by quickly adjusting power output to respond to rapid changes in system load; and to respond rapidly to a major utility system or regional blackout by providing a source of power to help restart fossil-fuel based generating stations and put them back on line.

160. Although our analysis shows that the project as licensed herein would cost more to operate than our estimated cost of alternative power, it is the applicant who must decide whether to accept this license and any financial risk that entails.

161. Although staff does not explicitly account for the effects inflation may have on the future cost of electricity, the fact that hydropower generation is relatively insensitive to inflation compared to fossil-fueled generators is an important economic consideration for power producers and the consumers they serve. This is one reason project economics is

[103] Once downstream fish passage is operational, EWEB would cease operating Trail Bridge power plant for the purposes of power generation to facilitate downstream passage and to avoid entrainment.

only one of many public interest factors the Commission considers in determining whether or not, and under what conditions, to issue a license.

Comprehensive Development

162. Sections 4(e) and 10(a)(1) of the FPA[104] require the Commission to give equal consideration to the power development purposes and to the purposes of energy conservation; the protection, mitigation of damage to, and enhancement of fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. Any license issued must be such as in the Commission's judgment will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for all beneficial public uses. The decision to license this project, and the terms and conditions included herein, reflect such consideration.

163. The EA for the project contains background information, analysis of effects, and support for related license articles. Based on the record of this proceeding, including the EA and the comments thereon, licensing the Carmen-Smith Project as described in this order would not constitute a major federal action significantly affecting the quality of the human environment. The project will be safe if operated and maintained in accordance with the requirements of this license.

164. Based on staff's independent review and evaluation of the project, recommendations from the resource agencies and other stakeholders, and the no-action alternative, as documented in the EA, the proposed Carmen-Smith Project, with the staff-recommended measures and all mandatory conditions that are not precluded by law, is selected and is best adapted to a comprehensive plan for improving or developing the McKenzie River.

165. This alternative was selected because: (1) issuance of a new license will serve to maintain a beneficial and dependable source of electric energy; (2) the required environmental measures will protect and enhance fish and wildlife resources, water quality, recreational resources, and historic properties; and (3) the 91.995 MW of electric capacity comes from a renewable resource that does not contribute to atmospheric pollution.

[104] 16 U.S.C. §§ 797(e) and 803(a)(1).

License Term

166. Section 15(e) of the FPA[105] provides that any new license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years, or more than 50 years.

167. On October 19, 2017, the Commission established a 40-year default license term policy for original and new licenses, effective as of October 26, 2017. The Policy Statement provides for exceptions to the 40-year default license term under certain circumstances: (1) establishing a shorter or longer license term if necessary to coordinate license terms for projects located on the same river basin; (2) deferring to a shorter or longer license term explicitly agreed to in a generally-supported comprehensive settlement agreement; and (3) establishing a longer license term upon a showing by the license applicant that substantial voluntary measures were either previously implemented during the prior license term, or substantial new measures are expected to be implemented under the new license.

168. The parties to the settlement requested that the Commission issue a 40-year license. Given this, and because none of the other exceptions referenced above applies to the Carmen-Smith Project, we are issuing a license with a 40-year term .

The Commission orders:

(A) This license is issued to the Eugene Water and Electric Board (licensee) for a period of 40 years, effective the first day of the month in which this order is issued, to operate and maintain the Carmen-Smith Project. This license is subject to the terms and conditions of the Federal Power Act (FPA), which is incorporated by reference as part of this license, and subject to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, described in the project description and the project boundary discussion in the order.

(2) Project works consisting of:

(a) Carmen Development

(1) the 25-foot-high, 2,100-foot-long zoned earth/rock Carmen diversion dam with a concrete weir and fuse plug spillway consisting of a 63-foot-long spillway section, a 17-foot-wide stop log section, and a 100-foot-long fuse plug section; (2) the 30-acre

[105] 16 U.S.C. § 808(e) (2012).

Carmen diversion reservoir with 261-acre-foot of storage capacity at elevation of 2,625 feet above mean sea level (msl); (3) the 11,380-foot-long, 9.5-foot-diameter concrete Carmen diversion tunnel; (4) the 235-foot-high, 1,100-foot-long zoned earth/rock Smith dam with a 20-foot-long gated ogee spillway; (5) the 178-acre Smith reservoir with a 14,600-acre-foot storage capacity at elevation of 2,605 feet msl; (6) the 7,275-foot-long, 13.8-foot-diameter concrete-lined Smith power tunnel; (7) a surge chamber that is 31 feet in diameter underground and 42 feet in diameter above ground; (8) the 1,160-foot-long, 12-foot-diameter steel-lined underground Carmen penstock that bifurcates upstream of the powerhouse into two 8-foot-diameter steel penstocks; (9) the 86-foot-long by 79-foot-wide Carmen powerhouse; (10) two generating units with Francis turbines and generators each with an authorized capacity of 41.61 megawatts (MW), for a total of 83.22 MW; (11) the Carmen substation; (12) the 19-mile-long, 115-kilovolt (kV) transmission line that connects the Carmen substation to the Bonneville Power Administration's Cougar-Eugene transmission line; and (13) appurtenant facilities.

(b) Trail Bridge Development

(1) the 100-foot-high, 700-foot-long zoned earth/rock Trail Bridge dam with a 30-foot-long gated ogee spillway section; (2) the 1,000-foot-long, 20-foot-wide zoned earth/ rock emergency spillway; (3) the 71-acre Trail Bridge reservoir with 2,060-acre-feet of storage capacity at elevation of 2,090 feet msl; (4) a 300-foot-long, 12-foot-diameter concrete tunnel at the intake that narrows to a diameter of 7 feet; (5) the 66-foot-long by 61-foot-wide Trail Bridge powerhouse; (6) a Kaplan turbine and a generator with an authorized capacity of 8.775 MW; (7) a 1-mile, 11.5-kV transmission line that connects the Trail Bridge powerhouse to the Carmen substation; and (8) appurtenant facilities.

(c) The total authorized capacity of the Carmen-Smith Project is 91.995 MW.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F shown below:

Exhibit A: Section 3, pages A-4 through A-11 filed on November 24, 2006:

Exhibit F: The following Exhibit F drawings filed on August 28, 2017:

EWEB Exhibit F Drawing	FERC No. 2242-	FERC Exhibit No.	Description
Sheet L-30900-1	1001	F-1	Site Plan
Sheet L-30900-2	1002	F-2	Carmen Diversion Dam – Plan & Sections

Sheet L-30900-3	1003	F-3	Carmen Spillway – Plan & Section
Sheet L-30900-4	1004	F-4	Carmen Diversion Intake – Plan & Section
Sheet L-30900-5	1005	F-5	Carmen Diversion Tunnel – Plan, Profile & Sections
Sheet L-30900-6	1006	F-6	Smith Dam – Layout & Details
Sheet L-30900-7	1007	F-7	Smith Power Tunnel – Plan, Profile & Section
Sheet L-30900-8	1008	F-8	Carmen Penstock – Plan, Profile & Details
Sheet L-30900-9	1009	F-9	Carmen Power Plant – Plan & Sections
Sheet L-30900-10	1010	F-10	Trail Bridge Dam – Layout & Details
Sheet L-30900-11	1011	F-11	Trail Bridge Power Plant – Plan & Sections
Sheet L-30900-14	1012	F-12	Carmen Power Plant – Plan & Elevation
Sheet L-30900-15	1013	F-13	115kV Transmission Steel Structures Elevations
Sheet D-35883-C1	1014	F-14	Trail Bridge Dam Trap and Haul Site Plan
Sheet L-30900-17	1015	F-15	Plan Layout & Sections of Spawning Facilities

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project, all portable property that may be employed in connection with the project, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The Exhibits A and F described above are approved and made part of this license. The Exhibit G drawings filed as part of the application for license conform to Commission regulations; however, they are not approved because this license requires modifications to the project boundary.

(D) This license is subject to the conditions submitted by the Oregon Department of Environmental Quality under section 401(a)(1) of the Clean Water Act, 33 U.S.C. § 1341(a)(1) (2012), as those conditions are set forth in Appendix A to this order, with the exception of activities relating to gravel augmentation in the McKenzie Wild and Scenic River corridor and the requirement for project-specific funding.

(E) This license is subject to the conditions submitted by the U.S. Forest Service under section 4(e) of the FPA, as those conditions are set forth in Appendix B to this order, with the exception of activities relating to gravel augmentation in the McKenzie Wild and Scenic River corridor, funding of a Forest Service protection officer (up to ½ full-time equivalent), and the cost reimbursement schedule set forth in the October 22, 2008 intergovernmental agreement.

(F) This license is subject to the conditions submitted by the Secretary of the U.S. Department of the Interior under section 18 of the FPA, as those conditions are set forth in Appendix C to this order.

(G) This license is subject to the conditions submitted by the Secretary of the U.S. Department of Commerce under section 18 of the FPA, as those conditions are set forth in Appendix D to this order.

(H) This license is subject to the incidental take terms and conditions of the biological opinion submitted by the U.S. Fish and Wildlife Service under section 7 of the Endangered Species Act, as those conditions are set forth in Appendix E to this order.

(I) This license is subject to the incidental take terms and conditions of the biological opinion submitted by the National Marine Fisheries Service under section 7 of the Endangered Species Act, as those conditions are set forth in Appendix F to this order, with the exception of activities relating to gravel augmentation in the McKenzie Wild and Scenic River corridor and funding of a Forest Service protection officer (up to ½ full-time equivalent).

(J) The following plans filed on November 30, 2016 with the 2016 Amended and Restated Settlement Agreement are approved and must be implemented: Recreation and Aesthetics Management Plan (Exhibit C), Wildlife Management Plan (Exhibit D), Vegetation Management Plan (Exhibit E), Historic Properties Management Plan (Exhibit F), and Roads, Waste Areas & Staging Areas Management Plan (Exhibit G).

(K) This license is also subject to the articles set forth in Form L-1 (Oct. 1975), entitled “Terms and Conditions of License for Constructed Major Project Affecting

Lands of the United States" (see 54 F.P.C. 1792 *et seq*.), as reproduced at the end of this order, and the following additional articles:

Article 201. *Administrative Annual Charges*. The licensee must pay the United States annual charges, effective the first day of the month in which the license is issued, and as determined in accordance with provisions of the Commission's regulations in effect from time to time, for the purpose of:

(a) reimbursing the United States for the cost of administration of Part I of the Federal Power Act. The authorized installed capacity for that purpose is 91,995 kilowatts;

(b) recompensing the United States for the use, occupancy, and enjoyment of 490.29 acres of its lands (other than for transmission line right-of-way); and

(c) recompensing the United States for the use, occupancy, and enjoyment of 83.88 acres of its lands for transmission line right-of-way.

Article 202. *Exhibit F Drawings*.

(a) Within 45 days of the date of issuance of this order, as directed below, the licensee must file two sets of the approved exhibit drawings, Form FERC-587, and geographic information system (GIS) data in electronic file format on compact disks with the Secretary of the Commission, ATTN: OEP/DHAC.

(b) The licensee must prepare digital images of the approved exhibit drawings in electronic format. Prior to preparing each digital image, show the FERC Project-Drawing Number (i.e., P-2242-1001 through P-2242-1015) in the margin below the title block of the approved drawing. Each drawing must be a separate electronic file, and the file name must include: FERC Project-Drawing Number, FERC Exhibit Number, Drawing Title, date of this order, and file extension in the following format [P-2242-1001, F-1, General Map, MM-DD-YYYY.TIF].

Each exhibit drawing that includes the project boundary must contain a minimum of three known reference points (i.e., latitude and longitude coordinates or state plane coordinates). The points must be in a triangular arrangement for GIS georeferencing the project boundary drawing to the polygon data, and based on a standard map coordinate system. The licensee must identify the spatial reference for the drawing (i.e., map projection, map datum, and units of measurement) on the drawing and label each reference point. In addition, a registered land surveyor must stamp each project boundary drawing. All digital images of the exhibit drawings must meet the following format specification:

IMAGERY:	black & white raster file
FILE TYPE:	Tagged Image File Format, (TIFF) CCITT Group 4 (also known as T.6 coding scheme)
RESOLUTION:	300 dots per inch (dpi) desired, (200 dpi minimum)
SIZE FORMAT:	22" x 34" (minimum), 24" x 36" (maximum)
FILE SIZE:	less than 1 megabyte desired

(c) The licensee must file a third set of exhibit drawings and a copy of Form FERC-587 with the Bureau of Land Management office at the following address:

Bureau of Land Management
Lands and Minerals Adjudication Section (OR-936.1)
PO BOX 2965
Portland, OR 97208-2965
ATTN: FERC Withdrawal Recordation

Form FERC-587 is available through the Commission's website at the following URL: https://www.ferc.gov/docs-filing/forms/form-587/form-587.pdf. A hard copy of the Form FERC-587 is available by mailing a request to the Secretary of the Commission in the event the form cannot be downloaded from the internet.

Article 203. *Revised Exhibit G Drawings*. Within 90 days of the issuance of the license, the licensee must file, for Commission approval, revised Exhibit G drawings enclosing within the project boundary all principal project works necessary for operation and maintenance of the project. The revised Exhibit G drawings must identify and enclose all project recreation sites and dispersed recreation areas being brought into the project boundary by this order.

Within two years of license issuance, the licensee must file, for Commission approval, revised Exhibit G drawings enclosing within the project boundary lands to be managed for wildlife habitat as set forth in the Wildlife Management Plan required by Forest Service 4(e) condition 3.

The Exhibit G drawings must comply with sections 4.39 and 4.41 of the Commission's regulations.

Article 204. *Headwater Benefits*. If the licensee's project was directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee must reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the same manner as for benefits

received during the term of this new license. The benefits will be assessed in accordance with Part 11, Subpart B, of the Commission's regulations.

Article 205. *As-built Drawings*. Within 90 days of completion of construction of the facilities authorized by this license, the licensee must file for Commission approval, revised exhibits A, F, and G, as applicable, to describe and show those project facilities as built.

Article 301. *Contract Plans and Specifications*. At least 60 days prior to the start of any construction, the licensee must submit one copy of its plans and specifications and any supporting design documents to the Commission's Division of Dam Safety and Inspections (D2SI)–Portland Regional Engineer, and two copies to the Commission (one of these must be a courtesy copy to the Director, D2SI). The submittal to the D2SI–Portland Regional Engineer must also include as part of preconstruction requirements: a Quality Control and Inspection Program, Temporary Construction Emergency Action Plan, and Soil Erosion and Sediment Control Plan. The licensee may not begin construction until the D2SI–Portland Regional Engineer has reviewed and commented on the plans and specifications, determined that all preconstruction requirements have been satisfied, and authorized start of construction.

Article 302. *Cofferdam and Deep Excavation Construction Drawings*. Should construction require cofferdams or deep excavations, the licensee must: (1) have a Professional Engineer who is independent from the construction contractor, review and approve the design of contractor-designed cofferdams and deep excavations prior to the start of construction; and (2) ensure that construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting construction of any cofferdams or deep excavations, the licensee must submit one copy to the Commission's Division of Dam Safety and Inspections (D2SI)-Portland Regional Engineer and two copies to the Commission (one of these copies shall be a courtesy copy to the Commission's Director, D2SI), of the approved cofferdam and deep excavation construction drawings and specifications, and the letters of approval.

Article 303. *Project Modification Resulting From Environmental Requirements*. If environmental requirements under this license require modifications that may affect the project works or operations, the licensee must consult with the Commission's Division of Dam Safety and Inspections–Portland Regional Engineer. Consultation must allow sufficient review time for the Commission to ensure that the proposed work does not adversely affect the project works, dam safety, or project operation.

Article 401. *Notifying and Reporting Deviations from Operating Requirements*. In the event of any deviations from the instream flow, ramping rate, seasonal reservoir elevation level, or reservoir level fluctuation rate requirements of Appendix A, condition 2 and Appendix B, condition 3, the licensee must:

(A) notify the U.S. Forest Service, Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, the National Marine Fisheries Service, and U.S. Fish and Wildlife Service within 24 hours, and the Commission within 10 days;

(B) take immediate reasonable action to remediate the deviation or incident; and

(C) prepare and file a report with the Commission within 30 days of the deviation or incident that describes: (i) the nature and chronology of the event, (ii) the circumstances that led up to the event, (iii) any observed or reported adverse environmental impacts resulting from the event, (iv) any corrective actions taken, and (v) any recommended measures to reduce the likelihood of similar events occurring in the future.

The Commission reserves the right to require changes to project operations or facilities based on the information contained in the reports and any other available information.

Article 402. *Notification of Unanticipated Events or Emergencies*. In the event of an unanticipated circumstance or emergency situation in which fish or wildlife are being endangered, harmed, or killed by the project or its operation, the licensee must: (A) implement the reporting provisions of Article 26 of the 2016 Amended and Restated Settlement Agreement and (B) notify the Commission within three days of the incident and prepare and file a report with the Secretary of the Commission within 30 days of the incident that describes: (i) the nature and chronology of the event, (ii) the circumstances that led up to the event, (iii) any observed or reported adverse environmental impacts resulting from the event, (iv) any corrective actions taken, and (v) any recommended measures to reduce the likelihood of similar events occurring in the future.

The Commission reserves the right to require changes to project operations or facilities based on the information contained in the reports and any other available information.

Article 403. *Reservation of Authority to Prescribe Fishways*. Authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or provide for the construction, operation, and maintenance of such fishways as may be prescribed by either the Secretary of the Interior or the Secretary of Commerce pursuant to section 18 of the Federal Power Act.

Article 404. *Water Quality Management Plan.* The Water Quality Management Plan required by condition 1 of the water quality certification (Appendix A) must be filed for Commission approval within 18 months of license issuance.

The licensee must develop the plan in consultation with the Oregon Department of Environmental Quality, Oregon Department of Fish and Wildlife, U.S. Forest Service, National Marine Fisheries Service, and the U.S. Fish and Wildlife Service. The licensee

must include with the plan copies of comments and recommendations made on the completed plan after it has been prepared and provided to the agencies, and specific descriptions of how the agencies' comments are accommodated by the plan. The licensee must allow a minimum of 30 days for the consulted agencies to comment and make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing must include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require further changes to the plan. Upon Commission approval, the licensee must implement the plan, including any changes required by the Commission.

Article 405. *Columbia River Basin Fish and Wildlife Program*. The Commission reserves the authority to order, upon its own motion or upon the recommendation of federal and state fish and wildlife agencies, affected Indian Tribes, or the Northwest Power and Conservation Council, alterations of project structures and operations to take into account to the fullest extent practicable the regional fish and wildlife program developed and amended pursuant to the Pacific Northwest Electric Power Planning and Conservation Act.

Article 406. *Use and Occupancy*. (a) In accordance with the provisions of this article, the licensee must have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee must also have continuing responsibility to supervise and control the use and occupancies, for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee must take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline;

and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee must require multiple use and occupancy of facilities for access to project lands or waters. The licensee must also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee must: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the impoundment shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone cables or major electric lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project impoundment. No later than January 31 of each year, the licensee must file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 water craft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved report on

recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must file a letter with the Commission, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Commission's authorized representative, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee must consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee must determine that the proposed use of the lands to be conveyed is not inconsistent with any approved report on recreational resources of an Exhibit E; or, if the project does not have an approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include the following covenants running with the land: (i) the use of the lands conveyed must not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee must take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee must not unduly restrict public access to project lands and waters.

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation,

public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project must be consolidated for consideration when revised Exhibit G drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article must not apply to any part of the public lands and reservations of the United States included within the project boundary.

(L) The licensee must serve copies of any Commission filing required by this order on any entity specified in the order to be consulted on matters relating to that filing. Proof of service on these entities must accompany the filing with the Commission.

(M) This order constitutes final agency action. Any party may file a request for rehearing of this order within 30 days from the date of its issuance, as provided in section 313(a) of the FPA, 16 U.S.C. § 825*l* (2012), and section 385.713 of the Commission's regulations, 18 C.F.R. § 385.713 (2018). The filing of a request for rehearing does not operate as a stay of the effective date of this license or of any other date specified in this order. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

Form L-1
(October, 1975)

FEDERAL ENERGY REGULATORY COMMISSION

TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED MAJOR PROJECT AFFECTING LANDS OF THE UNITED STATES

Article 1. The entire project, as described in this order of the Commission, must be subject to all of the provisions, terms, and conditions of the license.

Article 2. No substantial change must be made in the maps, plans, specifications, and statements described and designated as exhibits and approved by the Commission in its order as a part of the license until such change must have been approved by the Commission: Provided, however, that if the licensee or the Commission deems it necessary or desirable that said approved exhibits, or any of them, be changed, there must be submitted to the Commission for approval a revised, or additional exhibit or exhibits covering the proposed changes which, upon approval by the Commission, must become a part of the license and must supersede, in whole or in part, such exhibit or exhibits theretofore made a part of the license as may be specified by the Commission.

Article 3. The project area and project works must be in substantial conformity with the approved exhibits referred to in Article 2 herein or as changed in accordance with the provisions of said article. Except when emergency must require for the protection of navigation, life, health, or property, there must not be made without prior approval of the Commission any substantial alteration or addition not in conformity with the approved plans to any dam or other project works under the license or any substantial use of project lands and waters not authorized herein; and any emergency alteration, addition, or use so made must thereafter be subject to such modification and change as the Commission may direct. Minor changes in project works, or in uses of project lands and waters, or divergence from such approved exhibits may be made if such changes will not result in a decrease in efficiency, in a material increase in cost, in an adverse environmental impact, or in impairment of the general scheme of development; but any of such minor changes made without the prior approval of the Commission, which in its judgment have produced or will produce any of such results, must be subject to such alteration as the Commission may direct.

Article 4. The project, including its operation and maintenance and any work incidental to additions or alterations authorized by the Commission, whether or not

conducted upon lands of the United States, must be subject to the inspection and supervision of the Regional Engineer, Federal Energy Regulatory Commission, in the region wherein the project is located, or of such other officer or agent as the Commission may designate, who must be the authorized representative of the Commission for such purposes. The Licensee must cooperate fully with said representative and must furnish him such information as he may require concerning the operation and maintenance of the project, and any such alterations thereto, and must notify him of the date upon which work with respect to any alteration will begin, as far in advance thereof as said representative may reasonably specify, and must notify him promptly in writing of any suspension of work for a period of more than one week, and of its resumption and completion. The Licensee must submit to said representative a detailed program of inspection by the Licensee that will provide for an adequate and qualified inspection force for construction of any such alterations to the project. Construction of said alterations or any feature thereof must not be initiated until the program of inspection for the alterations or any feature thereof has been approved by said representative. The Licensee must allow said representative and other officers or employees of the United States, showing proper credentials, free and unrestricted access to, through, and across the project lands and project works in the performance of their official duties. The Licensee must comply with such rules and regulations of general or special applicability as the Commission may prescribe from time to time for the protection of life, health, or property.

Article 5. The Licensee, within five years from the date of issuance of the license, must acquire title in fee or the right to use in perpetuity all lands, other than lands of the United States, necessary or appropriate for the construction maintenance, and operation of the project. The Licensee or its successors and assigns must, during the period of the license, retain the possession of all project property covered by the license as issued or as later amended, including the project area, the project works, and all franchises, easements, water rights, and rights or occupancy and use; and none of such properties must be voluntarily sold, leased, transferred, abandoned, or otherwise disposed of without the prior written approval of the Commission, except that the Licensee may lease or otherwise dispose of interests in project lands or property without specific written approval of the Commission pursuant to the then current regulations of the Commission. The provisions of this article are not intended to prevent the abandonment or the retirement from service of structures, equipment, or other project works in connection with replacements thereof when they become obsolete, inadequate, or inefficient for further service due to wear and tear; and mortgage or trust deeds or judicial sales made thereunder, or tax sales, must not be deemed voluntary transfers within the meaning of this article.

Article 6. In the event the project is taken over by the United States upon the termination of the license as provided in Section 14 of the Federal Power Act, or is transferred to a new licensee or to a non-power licensee under the provisions of Section 15 of said Act, the Licensee, its successors and assigns must be responsible for, and must make good any defect of title to, or of right of occupancy and use in, any of such project property that is necessary or appropriate or valuable and serviceable in the maintenance and operation of the project, and must pay and discharge, or must assume responsibility for payment and discharge of, all liens or encumbrances upon the project or project property created by the Licensee or created or incurred after the issuance of the license: Provided, That the provisions of this article are not intended to require the Licensee, for the purpose of transferring the project to the United States or to a new licensee, to acquire any different title to, or right of occupancy and use in, any of such project property than was necessary to acquire for its own purposes as the Licensee.

Article 7. The actual legitimate original cost of the project, and of any addition thereto or betterment thereof, must be determined by the Commission in accordance with the Federal Power Act and the Commission's Rules and Regulations thereunder.

Article 8. The Licensee must install and thereafter maintain gages and stream-gaging stations for the purpose of determining the stage and flow of the stream or streams on which the project is located, the amount of water held in and withdrawn from storage, and the effective head on the turbines; must provide for the required reading of such gages and for the adequate rating of such stations; and must install and maintain standard meters adequate for the determination of the amount of electric energy generated by the project works. The number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, must at all times be satisfactory to the Commission or its authorized representative. The Commission reserves the right, after notice and opportunity for hearing, to require such alterations in the number, character, and location of gages, meters, or other measuring devices, and the method of operation thereof, as are necessary to secure adequate determinations. The installation of gages, the rating of said stream or streams, and the determination of the flow thereof, must be under the supervision of, or in cooperation with, the District Engineer of the United States Geological Survey having charge of stream-gaging operations in the region of the project, and the Licensee must advance to the United States Geological Survey the amount of funds estimated to be necessary for such supervision, or cooperation for such periods as may mutually agreed upon. The Licensee must keep accurate and sufficient records of the foregoing determinations to the satisfaction of the Commission, and must make return of such records annually at such time and in such form as the Commission may prescribe.

Article 9. The Licensee must, after notice and opportunity for hearing, install additional capacity or make other changes in the project as directed by the Commission, to the extent that it is economically sound and in the public interest to do so.

Article 10. The Licensee must, after notice and opportunity for hearing, coordinate the operation of the project, electrically and hydraulically, with such other projects or power systems and in such manner as the Commission any direct in the interest of power and other beneficial public uses of water resources, and on such conditions concerning the equitable sharing of benefits by the Licensee as the Commission may order.

Article 11. Whenever the Licensee is directly benefited by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement, the Licensee must reimburse the owner of the headwater improvement for such part of the annual charges for interest, maintenance, and depreciation thereof as the Commission must determine to be equitable, and must pay to the United States the cost of making such determination as fixed by the Commission. For benefits provided by a storage reservoir or other headwater improvement of the United States, the Licensee must pay to the Commission the amounts for which it is billed from time to time for such headwater benefits and for the cost of making the determinations pursuant to the then current regulations of the Commission under the Federal Power Act.

Article 12. The operations of the Licensee, so far as they affect the use, storage and discharge from storage of waters affected by the license, must at all times be controlled by such reasonable rules and regulations as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes, and the Licensee must release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Commission may prescribe for the purposes hereinbefore mentioned.

Article 13. On the application of any person, association, corporation, Federal agency, State or municipality, the Licensee must permit such reasonable use of its reservoir or other project properties, including works, lands and water rights, or parts thereof, as may be ordered by the Commission, after notice and opportunity for hearing, in the interests of comprehensive development of the waterway or waterways involved and the conservation and utilization of the water resources of the region for water supply or for the purposes of steam-electric, irrigation, industrial, municipal or similar uses. The Licensee must receive reasonable compensation for use of its reservoir or other project properties or parts thereof for such purposes, to include at least full

reimbursement for any damages or expenses which the joint use causes the Licensee to incur. Any such compensation must be fixed by the Commission either by approval of an agreement between the Licensee and the party or parties benefiting or after notice and opportunity for hearing. Applications must contain information in sufficient detail to afford a full understanding of the proposed use, including satisfactory evidence that the applicant possesses necessary water rights pursuant to applicable State law, or a showing of cause why such evidence cannot concurrently be submitted, and a statement as to the relationship of the proposed use to any State or municipal plans or orders which may have been adopted with respect to the use of such waters.

Article 14. In the construction or maintenance of the project works, the Licensee must place and maintain suitable structures and devices to reduce to a reasonable degree the liability of contact between its transmission lines and telegraph, telephone and other signal wires or power transmission lines constructed prior to its transmission lines and not owned by the Licensee, and must also place and maintain suitable structures and devices to reduce to a reasonable degree the liability of any structures or wires falling or obstructing traffic or endangering life. None of the provisions of this article are intended to relieve the Licensee from any responsibility or requirement which may be imposed by any other lawful authority for avoiding or eliminating inductive interference.

Article 15. The Licensee must, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities, and comply with such reasonable modifications of the project structures and operation, as may be ordered by the Commission upon its own motion or upon the recommendation of the Secretary of the Interior or the fish and wildlife agency or agencies of any State in which the project or a part thereof is located, after notice and opportunity for hearing.

Article 16. Whenever the United States must desire, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense, the Licensee must permit the United States or its designated agency to use, free of cost, such of the Licensee's lands and interests in lands, reservoirs, waterways and project works as may be reasonably required to complete such facilities or such improvements thereof. In addition, after notice and opportunity for hearing, the Licensee must modify the project operation as may be reasonably prescribed by the Commission in order to permit the maintenance and operation of the fish and wildlife facilities constructed or improved by the United States under the provisions of this article. This article must not be interpreted to place any obligation on the United States to construct or improve fish and wildlife facilities or to relieve the Licensee of any obligation under this license.

Article 17. The Licensee must construct, maintain, and operate, or must arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration to the needs of the physically handicapped, and must comply with such reasonable modifications of the project, as may be prescribed hereafter by the Commission during the term of this license upon its own motion or upon the recommendation of the Secretary of the Interior or other interested Federal or State agencies, after notice and opportunity for hearing.

Article 18. So far as is consistent with proper operation of the project, the Licensee must allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the Licensee for the purpose of full public utilization of such lands and waters for navigation and for outdoor recreational purposes, including fishing and hunting: Provided, That the Licensee may reserve from public access such portions of the project waters, adjacent lands, and project facilities as may be necessary for the protection of life, health, and property.

Article 19. In the construction, maintenance, or operation of the project, the Licensee must be responsible for, and must take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution. The Commission, upon request or upon its own motion, may order the Licensee to take such measures as the Commission finds to be necessary for these purposes, after notice and opportunity for hearing.

Article 20. The Licensee must clear and keep clear to an adequate width lands along open conduits and must dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which results from the clearing of lands or from the maintenance or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project must be removed. All clearing of the lands and disposal of the unnecessary material must be done with due diligence and to the satisfaction of the authorized representative of the Commission and in accordance with appropriate Federal, State, and local statutes and regulations.

Article 21. Timber on lands of the United State cut, used, or destroyed in the construction and maintenance of the project works, or in the clearing of said lands, must be paid for, and the resulting slash and debris disposed of, in accordance with the requirements of the agency of the United States having jurisdiction over said lands. Payment for merchantable timber must be at current stumpage rates, and payment for young growth timber below merchantable size must be at current damage appraisal values. However, the agency of the United States having jurisdiction may sell or

dispose of the merchantable timber to others than the Licensee: Provided, That timber so sold or disposed of must be cut and removed from the area prior to, or without undue interference with, clearing operations of the Licensee and in coordination with the Licensee's project construction schedules. Such sale or disposal to others must not relieve the Licensee of responsibility for the clearing and disposal of all slash and debris from project lands.

Article 22. The Licensee must do everything reasonably within its power, and must require its employees, contractors, and employees of contractors to do everything reasonably within their power, both independently and upon the request of officers of the agency concerned, to prevent, to make advance preparations for suppression of, and to suppress fires on the lands to be occupied or used under the license. The Licensee must be liable for and must pay the costs incurred by the United States in suppressing fires caused from the construction, operation, or maintenance of the project works or of the works appurtenant or accessory thereto under the license.

Article 23. The Licensee must interpose no objection to, and must in no way prevent, the use by the agency of the United States having jurisdiction over the lands of the United States affected, or by persons or corporations occupying lands of the United States under permit, of water for fire suppression from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license, or the use by said parties of water for sanitary and domestic purposes from any stream, conduit, or body of water, natural or artificial, used by the Licensee in the operation of the project works covered by the license.

Article 24. The Licensee must be liable for injury to, or destruction of, any buildings, bridges, roads, trails, lands, or other property of the United States, occasioned by the construction, maintenance, or operation of the project works or of the works appurtenant or accessory thereto under the license. Arrangements to meet such liability, either by compensation for such injury or destruction, or by reconstruction or repair of damaged property, or otherwise, must be made with the appropriate department or agency of the United States.

Article 25. The Licensee must allow any agency of the United States, without charge, to construct or permit to be constructed on, through, and across those project lands which are lands of the United States such conduits, chutes, ditches, railroads, roads, trails, telephone and power lines, and other routes or means of transportation and communication as are not inconsistent with the enjoyment of said lands by the Licensee for the purposes of the license. This license must not be construed as conferring upon the Licensee any right of use, occupancy, or enjoyment of the lands of the United States other than for the construction, operation, and maintenance of the project as stated in the license.

Article 26. In the construction and maintenance of the project, the location and standards of roads and trails on lands of the United States and other uses of lands of the United States, including the location and condition of quarries, borrow pits, and spoil disposal areas, must be subject to the approval of the department or agency of the United States having supervision over the lands involved.

Article 27. The Licensee must make provision, or must bear the reasonable cost, as determined by the agency of the United States affected, of making provision for avoiding inductive interference between any project transmission line or other project facility constructed, operated, or maintained under the license, and any radio installation, telephone line, or other communication facility installed or constructed before or after construction of such project transmission line or other project facility and owned, operated, or used by such agency of the United States in administering the lands under its jurisdiction.

Article 28. The Licensee must make use of the Commission's guidelines and other recognized guidelines for treatment of transmission line rights-of-way, and must clear such portions of transmission line rights-of-way across lands of the United States as are designated by the officer of the United States in charge of the lands; must keep the areas so designated clear of new growth, all refuse, and inflammable material to the satisfaction of such officer; must trim all branches of trees in contact with or liable to contact the transmission lines; must cut and remove all dead or leaning trees which might fall in contact with the transmission lines; and must take such other precautions against fire as may be required by such officer. No fires for the burning of waste material must be set except with the prior written consent of the officer of the United States in charge of the lands as to time and place.

Article 29. The Licensee must cooperate with the United States in the disposal by the United States, under the Act of July 3l, 1947, 61 Stat. 681, as amended (30 U.S.C. sec. 601, et seq.), of mineral and vegetative materials from lands of the United States occupied by the project or any part thereof: Provided, That such disposal has been authorized by the Commission and that it does not unreasonably interfere with the occupancy of such lands by the Licensee for the purposes of the license: Provided further, That in the event of disagreement, any question of unreasonable interference must be determined by the Commission after notice ad opportunity for hearing.

Article 30. If the Licensee must cause or suffer essential project property to be removed or destroyed or to become unfit for use, without adequate replacement, or must abandon or discontinue good faith operation of the project or refuse or neglect to comply with the terms of the license and the lawful orders of the Commission mailed to the record address of the Licensee or its agent, the Commission will deem it to be the intent of the Licensee to surrender the license. The Commission, after notice and

opportunity for hearing, may require the Licensee to remove any or all structures, equipment and power lines within the project boundary and to take any such other action necessary to restore the project waters, lands, and facilities remaining within the project boundary to a condition satisfactory to the United States agency having jurisdiction over its lands or the Commission's authorized representative, as appropriate, or to provide for the continued operation and maintenance of nonpower facilities and fulfill such other obligations under the license as the Commission may prescribe. In addition, the Commission in its discretion, after notice and opportunity for hearing, may also agree to the surrender of the license when the Commission, for the reasons recited herein, deems it to be the intent of the licensee to surrender the license.

Article 31. The right of the licensee and of its successors and assigns to use or occupy waters over which the United States has jurisdiction, or lands of the United States under the license, for the purpose of maintaining the project works or otherwise, must absolutely cease at the end of the license period, unless the licensee has obtained a new license pursuant to the then existing laws and regulations, or an annual license under the terms and conditions of this license.

Article 32. The terms and conditions expressly set forth in the license must not be construed as impairing any terms and conditions of the Federal Power Act which are not expressly set forth herein.

APPENDIX A

Water Quality Certification Conditions for the Carmen-Smith Hydroelectric Project Issued by the Oregon Department of Environmental Quality on August 16, 2018 and filed August 28, 2018.

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 FERG 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:

(1) 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 lnstream 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 in-stream flows as provided in Section 4.2 of the Aquatics Management Plan.

c) Flow Fluctuations and Ramping

(1) Trail Bridge Reservoir

EWEB 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
Twelve feet 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 3-inch 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 3.1 in accordance with Proposed License Article 31 and Section 4.1.4 of the Aquatics Management Plan.

(4) Upstream Passage at Spawning Channel

EWEB 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. EWEB 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 Project-related 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 section 404 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

EWEB shall measure temperature in the Upper Carmen Bypass Reach, Lower Carmen Bypass Reach, and Smith River Bypass Reach 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.

(2) McKenzie River Below Trail Bridge Dam

EWEB 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 ±0.2°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:

Upper Carmen Bypass
Measure TDG and flow for 72 hours

Smith Bypass
Measure 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 on- site 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

EWEB 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:

(1) 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:

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 ODEQ, 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.

APPENDIX B

Conditions filed by the U.S. Forest Service on July 24, 2017, pursuant to Section 4(e) of the Federal Power Act, for the new license for Project No. 2242

I. GENERAL (Standard Form L-1)

License articles contained in the Federal Energy Regulatory Commission's (Commission) Standard Form L-1 issued by Order No. 540, dated October 31, 1975, cover those general requirements that the Secretary of Agriculture, acting by and through the USDA Forest Service, considers necessary for adequate protection and utilization of the land and related resources of the Willamette National Forest. Under authority of section 4(e) of the Federal Power Act (16 U.S.C. 797(e)), the following terms and conditions are deemed necessary for adequate protection and utilization of National Forest System lands and resources. These terms and conditions are based on those resources enumerated in the Organic Administration Act of 1897 (30 Stat. 11), the Multiple-Use Sustained Yield Act of 1960 (74 Stat. 215), the National Forest Management Act of 1976 (90 Stat. 2949), and any other law specifically establishing a unit of the National Forest System or prescribing the management thereof (such as the Wilderness Act or Wild and Scenic Rivers Act), as such laws may be amended from time to time, and as implemented by regulations and approved Land and Resources Management Plans prepared in accordance with the National Forest Management Act. Therefore, pursuant to section 4(e) of the Federal Power Act, the following conditions covering specific requirements for protection and utilization of National Forest System lands shall also be included in any license issued for the Carmen-Smith Hydroelectric Project (Project).

The USDA Forest Service reserves the authority to add to, delete from, or modify the modified terms and conditions contained herein in the event that the licensee, the USDA Forest Service or other Parties withdraw from the November 30, 2016, Amended and Restated Settlement Agreement under the procedures identified in Section 7.5 of the Settlement Agreement prior to the Commission's issuance of a new license for the Project.

II. USDA FOREST SERVICE 4(e) CONDITIONS

Condition 1 – Compliance with the Settlement Agreement

The licensee shall completely and fully comply with all provisions of the November 30, 2016, Amended and Restated Settlement Agreement for the Relicensing of the Carmen-Smith Hydroelectric Project – FERC Project No. 2242 Linn and Lane Counties, Oregon (Settlement Agreement) relating to:

1. All protection, mitigation and enhancement measures and other obligations of

the licensee identified in the Settlement Agreement, Exhibits and Schedules which are on or affect National Forest System (NFS) lands and resources.

2. All commitments in each and every plan referenced in the Settlement Agreement, Exhibits and Schedules which implement activities which are on or affect NFS lands and resources.

Condition 2 – Reservation of Authority in the Event the Settlement Agreement is Materially Modified or not accepted by the Commission

USDA Forest Service preliminary terms and conditions are premised on two requirements:

1. The Commission's acceptance and incorporation of the Settlement Agreement, Exhibits and Schedules, without material modification into the new Project license.

2. The licensee's immediate and complete implementation of its obligations in accordance with the Settlement Agreement. In the event either of these requirements are not met, the USDA Forest Service reserves its authority to supplement or modify its terms and conditions at a later time.

Condition 3 – Implementation of Settlement Agreement License Articles

The licensee shall implement Settlement Agreement License Articles 1-13, 15-25, and 28-34.

Condition 4 – Implementation of the Intergovernmental Agreement

The licensee shall implement the requirements of the Amended Intergovernmental Agreement entered into by USDA Forest Service on October 16, 2008, and the licensee on October 21, 2008.

Condition 5 – Surveys, Land Corners

The licensee shall avoid disturbance to all public land survey monuments, private property corners, and forest boundary markers. In the event that any such land markers or monuments are destroyed by an act or omission of the licensee, in connection with the use and/or occupancy authorized by the license, depending on the type of monument destroyed, the licensee shall reestablish or reference same in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the County Surveyor, or (3) the specifications of the USDA Forest Service. Further, the licensee shall ensure that any such official survey records affected are amended as provided for by law.

APPENDIX C

U.S. Department of Interior, Fish and Wildlife Service Fishway Prescription for Carmen Smith Project No. 2242 as filed July 20, 2017.

SECTION 18 PRESCRIPTIONS FOR FISHWAYS

Article 28. Fish Passage

Consistent with these license articles, the Licensee shall implement Section 4.1 Fish Passage of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement.

Article 29. Trap and Haul Fish Passage at Trail Bridge Dam

(a) Upstream Fish Passage Facilities and Standards

The Licensee shall design, construct, operate, and maintain a trap and haul facility at Trail Bridge Dam to provide upstream fish passage, as described in Section 4.1.2, Sections 1) through 6) of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. The Licensee shall design the trap and haul facility in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service. The trap and haul facility shall be designed consistent with EWEB Technical Memorandum to NMFS: Trail Bridge Trap and Haul Design Criteria Summary dated June 28, 2016, and according to the NMFS criteria document titled Anadromous Salmonid Passage Facility Design Anadromous Salmonid Passage Facility Design developed by National Marine Fisheries Service, Northwest Region (NMFS 2011) or current versions thereof for the purpose of supporting safe, timely, and effective upstream passage of fish, and to achieve upstream fish passage standards described in Table 1:

Table 1. Numeric standard for upstream passage of adult Chinook salmon and adult bull trout, following construction of the Trail Bridge Trap and Haul facility.

Species	Standard
Chinook	<1% adult mortality per year, including delay induced mortality
Bull trout	No more than 2 adult fish per year or 1% (whichever is higher) mortality; 5% injury per year

(1) Within 6 months after License issuance, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service,

prepare and file with the Commission a plan and schedule for design and construction of the Trail Bridge Dam trap and haul facilities. Subject to Commission approval, within 3 years after the later of License issuance or final resolution of any administrative or judicial petition or appeals, or other formal agency adjudication relating to Section 4.1.2 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall complete construction of the Trail Bridge Dam trap and haul facilities.

(2) Within 6 months after License issuance, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule for the demolition of the existing tailrace barrier below Trail Bridge Dam, consistent with Section 4.1.2, Paragraph (6) of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. Subject to Commission approval, within 3 years after the later of License issuance or final resolution of any administrative or judicial petition or appeals, or other formal agency adjudication relating to this Section 4.1.2., the Licensee shall complete demolition of the existing tailrace barrier below Trail Bridge Dam, providing fish access to the trap and haul facility for upstream fish passage.

(b) Trail Bridge Upstream Passage Facilities Operations and Maintenance

No later than 6 months prior to planned completion of the trap and haul facilities, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, prepare and file with the Commission a Preliminary Operations and Maintenance Plan for Trap and Haul (POMPTH), consistent with Section 4.1.2, Paragraph 3) of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to provide an initial guide for the operation of the trap and haul facilities.

(c) Upstream Fish Passage Evaluation Program (UPEP)

The Licensee shall implement Section 4.1.6 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, which provides for three distinct plans to be implemented consecutively and that are designed to build upon one another in succession to provide monitoring of upstream fish migration through the Project for the duration of the License. The Licensee shall implement Section 4.1.6 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.1.6. The three stages of the Program are as follows:

Stage 1 - Upstream Passage Observation and Evaluation Plan (UPOEP)

(1) Six months prior to planned completion of the Trail Bridge Dam trap and haul

facilities, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission, the Upstream Passage Observation and Evaluation Plan (UPOEP), consistent with Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to conduct hydraulic and biological monitoring at the Project.

(2) Within 6 months after Licensee's completion of the implementation of the UPOEP, Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare a report documenting the results of the evaluation and the data collected. Licensee shall file the report with the Commission along with comments by members of the FWG and describing how EWEB addressed or responded to the comments.

(3) If Licensee's implementation of the UPOEP verifies that the Project facilities function as designed, where applicable, and injury and mortality at the Project facilities are within the passage standards provided in Section (a) of this License Article 29 and Sections 4.1.1.1 of the November 2016 Amended and Restated Settlement Agreement, then no further hydraulic or biological evaluation by EWEB is required, except as provided in the Upstream Passage Ongoing Monitoring Plan (UPOMP).

(4) Within 6 months of the Commission approval of the report documenting results of the Upstream Passage Observation and Evaluation Plan (UPOEP) provided in this License Article 29 and Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, prepare and file with the Commission a Revised Operations and Maintenance Plan for Trap and Haul (ROMPTH) for the Trail Bridge trap and haul facility. Upon Commission approval, the Licensee shall implement the ROMPTH.

(5) Five years after commissioning of the trap and haul facilities, EWEB may, in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, file an amendment to the ROMPTH with the Commission to modify frequency and/or timing of trap operations, if warranted.

Stage 2 - Upstream Passage Adaptive Management Plan (UPAMP)

(6) If the results of the UPOEP as described in the completion report submitted to the Commission indicate the trap and haul facility induced mortality rate of adult Chinook salmon or bull trout exceeds the fish passage standards of Table 1 of this License Article 29, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule, called the UPAMP, consistent with Section 4.1.6.2 of

the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to address causes of injury or mortality. Upon Commission approval, the Licensee shall implement the UPAMP to modify the trap and haul facilities. The design modifications will address the causes in the most expeditious way practicable.

(7) Upon completion of the modifications, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, implement a modified version of the UPOEP to evaluate that the modifications have achieved the fish passage standards in Table 1 of this License Article 29. The cycle of evaluation and modification will repeat for no more than 10 upstream migration seasons.

(8) At the end of 10 upstream migration seasons of evaluation and modifications, if facility induced mortality rates of adult Chinook salmon or bull trout continue to exceed the fish passage standards provided in Table 1 of this License Article 29, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule for the design and construction of a volitional fish ladder or other agreed upon remedy including Project decommissioning. Within 12 months after Commission approval, the Licensee shall, in consultation with and subject to the approval of Fish Agencies and USDA Forest Service, complete design of a volitional fish ladder, decommissioning, or other approved remedy, and shall begin construction (or deconstruction) as soon as possible after completion and approval of design. If a volitional fish ladder or other remedy is constructed, the Licensee shall operate and maintain the facility throughout the term of the License. In the interim, the Licensee will continue to operate the trap and haul facility or other approved fish passage measures. If construction of the volitional ladder or other remedy interferes with operation of fish passage, the Licensee will implement other temporary means of passage.

Stage 3 - Upstream Passage Ongoing Monitoring Plan (UPOMP)

(9) Within 6 months of the Commission approval of the report documenting the UPOEP results, the Licensee shall , in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission, the Upstream Passage Ongoing Monitoring Plan (UPOMP), consistent with Section 4.1.6.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to describe the Licensee's ongoing upstream passage monitoring efforts at the Project. Upon Commission approval, the Licensee shall implement the UPOMP.

(10) The UPOMP will describe how the Licensee shall monitor Project fish passage facilities, and report its findings to the FWG on an annual basis. The Licensee shall prepare the annual report in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service. The monitoring report is anticipated to

include summaries of video monitoring and visual observations, as well as documentation of the number of each species, dates fish were observed in the trap, numbers of fish transported and released upstream, and condition of all observed fish. The report will also include summaries of all analyses, if any, conducted on successful fish passage, delay, injury, and mortality in relation to upstream fish passage facility operations, project operations (e.g. shut downs), and environmental conditions (e.g., instream flow).

(11) If, in the course of annual monitoring of operations of the Trail Bridge trap and haul facilities, mortality or serious injury fish passage standards provided in this License Article 29 and Section 4.1.1.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement are exceeded, the Licensee will notify the FWG and in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, develop a plan to implement corrective measures similar to the UPAMP as described above.

(12) After 10 annual UPOMP reports, the Licensee, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, may consider changing the reporting interval to less frequently than annually.

Article 30. Upstream Passage at the Carmen-Smith Spawning Channel

(a) In consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, the Licensee shall design, construct, operate and maintain upstream fish passage with steps no higher than 6 inches at the Carmen-Smith Spawning Channel entrance consistent with AMP-90% Design Submittal Volume 3, dated December 2012 by CH2MHill and the Anadromous Salmonid Passage Facility Design developed by National Marine Fisheries Service, Northwest Region (NMFS 2011) or current version thereof at the time of design, and a facility for upstream passage out of the channel at the spawning channel water control structure for the purpose of supporting safe, timely and effective upstream passage of fish at the spawning channel. The Licensee shall design the upstream passage spawning channel modifications in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service. Within 1 year after New License issuance, the Licensee shall prepare, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, and file with the Commission, a plan and schedule for design and construction of the spawning channel fish passage facilities. Subject to Commission approval, within four years after New License issuance, the Licensee shall complete construction of the spawning channel fish passage facilities.

(b) Within 12 months after the Licensee's completion of the evaluation described in the Upstream Passage Evaluation Program (UPEP) provided in License Article 29 and Section 4.1.6 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall, in consultation with

the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a Spawning Channel Operations and Maintenance Plan (SCOMP) to provide for operation of the spawning channel fish passage facilities. The Licensee shall base the SCOMP on the Anadromous Salmonid Passage Facility Design developed by National Marine Fisheries Service, Northwest Region (NMFS 2011) or current version thereof at the time of design, and the results of the Licensee's implementation of the Upstream Passage Observation and Evaluation Plan (UPOEP) described in Section 4.1.6 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. Upon Commission approval, the Licensee shall implement the SCOMP.

Article 31. Upstream Passage at Sweetwater Creek

Except as otherwise provided in the Construction Management Plan implemented under Article 16, the Licensee shall maintain a minimum elevation of 2,083 feet in Trail Bridge Reservoir from 15 August through 31 October for the term of the New License, which is intended to aid upstream passage of bull trout into Sweetwater Creek by providing a minimum depth of one foot of water in the entrance to the Sweetwater Creek culvert.

The Licensee shall carry out a Sweetwater Creek Culvert biological evaluation, as described in Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement to evaluate the effectiveness of modifications to Trail Bridge Reservoir operations (Section 4.1.4 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement) to aid bull trout entry into Sweetwater Creek.

Article 32. Fish Protection at Carmen Power Plant

The Licensee, in consultation with the FWG and subject to the approval of the fish Agencies and USDA Forest Service, shall carry out a Carmen Power Plant biological evaluation, as described in Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. The evaluation will be used to construct, if needed, an adaptive approach for fish passage at the Carmen Power Plant tailrace by monitoring fish after adult spring Chinook salmon and bull trout are hauled from the Trail Bridge Dam trap and haul facilities and released in Trail Bridge Reservoir above Trail Bridge Dam, to determine if there is significant delay, substantial mortality, or serious injury to Chinook salmon and bull trout associated with upstream passage past the Carmen Power Plant tailrace as a result of its facilities or operations.

The standard for mortality and injury are considered to be exceeded if monitoring surveys document Carmen Power Plant facilities and operations result in three or more adult fish (any combination of bull trout or Chinook salmon) observed dead or seriously injured in a calendar year as provided in Section 4.1.1.3 of the Aquatics Management Plan, Exhibit

B to the November 2016 Amended and Restated Settlement Agreement.

If, based on the results from the Licensee's implementation of the Carmen Power Plant biological evaluation as described in Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the standard for significant delay or the standard for substantial mortality and serious injury is exceeded, the Licensee shall, in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a list of appropriate modifications or additions to Project facilities or operations designed to address identified substantial delay, significant mortality or serious injury. Upon Commission approval, Licensee shall implement the modifications or additions to Project facilities or operations.

Article 33. Downstream Passage at Trail Bridge Dam

(a) Downstream Fish Passage Facilities and Standards

The Licensee shall design, construct, operate, and maintain the Trail Bridge Dam spillway, gate and hoist system, and attraction water supply (AWS) for the purpose of supporting year-round safe, timely, and effective downstream passage of fish consistent with the NMFS criteria document titled Anadromous Salmonid Passage Facility Design developed by National Marine Fisheries Service, Northwest Region (NMFS 2011) or current version thereof at the time of design, in order to achieve downstream fish passage standards, regardless of passage route, described in Table 2. The Licensee shall design the spillway, gate and hoist system, and AWS in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service.

Table 2. Numeric standard for downstream passage for Chinook salmon and bull trout, following construction of the Trail Bridge Trap and Haul facility.

Species	Affected Life Stages	Standard
Chinook	fry and juveniles	2% mortality, 5% injury, per year
	Adult	No more than 2 fish per year or 2% mortality (whichever is higher); 5% injury, per year
Bull trout	fry and juveniles and subadults	2% mortality, 5% injury, per year
	Adult	No more than 2 fish per year or 2% mortality (whichever is higher); 5% injury, per year

(1) Within 6 months after License issuance, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service,

prepare and file with the Commission a plan, schedule, and design for construction of modifications to the spillway, gate and hoist system, and for ceasing operation of the Trail Bridge power plant for the purposes of power generation. Subject to Commission approval, within 3 years after the later of License issuance or final resolution of any administrative or judicial petition or appeals, or other formal agency adjudication relating to Section 4.1.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall complete modifications to the spillway, gate and hoist system.

Upon completion of the upstream and downstream fish passage facilities, Licensee shall cease operation of the Trail Bridge power plant, except for purposes of maintaining the Trail Bridge power plant in safe working order, as provided in Section 4.1.3.2. of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement.

(2) The Licensee shall include (but not be limited to) in the design of the spillway, and gate and hoist system facilities the following:

i. Modification of the spillway gate to allow a 12-inch minimum opening to accommodate adult bull trout and adult Chinook passage,

ii. Modifications of the "flip bucket" and other features to promote laminar flow and reduce turbulence;

iii. Modifications to eliminate, to the extent possible the need to salvage adult fish from the flip bucket;

iv. Installation of gate hoist mechanism to allow fine control of gate openings and spillway flows to meet ramping criteria; and

v. Modification to tailrace configuration, if needed to ensure safe landing and discharge conditions for fish as they exit the spillway.

(b) Trail Bridge Downstream Passage Facilities Operations and Maintenance

No later than 6 months prior to planned completion of modifications to the Trail Bridge Dam spillway, gate and hoist system, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, prepare and file with the Commission a Preliminary Operations and Maintenance Plan for Spillway (POMPS) for the modified spillway, and gate hoist system and Trail Bridge power plant. Upon Commission approval, the Licensee shall implement the POMPS.

(1) Within 12 months after completion of the evaluation described in the Downstream Passage Evaluation Program (DPEP) provided in this License Article 33 and Section 4.1.7 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, prepare and file with the Commission, a Revised Operations and Maintenance Plan for

Spillway (ROMPS). Upon Commission approval, the Licensee shall implement the ROMPS.

(2) To minimize fish entrainment, the Licensee will limit operation of the Trail Bridge power plant turbine as provided in Section 4.1.3.2 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, including the following situations:

i. during the Trail Bridge Spillway maintenance and construction periods after consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service;

ii. to minimize use of the existing energy dissipation valve; or

iii. as may be necessary to meet FERC requirements, after prompt notification to the Fish Agencies.

(c) Downstream Fish Passage Evaluation Plan (DPEP)

(1) No later than 6 months prior to the Licensee's planned completion of modifications to the spillway, gate and hoist system as provided in this License Article 33 and Section 4.1.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a Downstream Passage Evaluation Plan (DPEP), Section 4.1.7 of Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to conduct hydraulic and biological monitoring of the spillway and the trap and haul AWS intake. The DPEP shall include an implementation schedule. Subject to Commission approval, the Licensee shall implement the DPEP, after completion of the spillway, gate and hoist modifications.

(2) Within 6 months after completion of the DPEP, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a DPEP report documenting the results of the monitoring and describing any findings that require implementation of the next phase, the Downstream Adaptive Management Plan (DAMP). The cycle of DPEP to DAMP has the potential to repeat, as described in Section 4.1.7.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement.

(3) The DPEP will include the Downstream Adaptive Management Plan (DAMP), to evaluate and modify downstream fish passage at Trail Bridge Dam, as described in Section 4.1.7.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement.

(4) If the results of the DPEP, as determined by the Licensee in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, indicate that the spillway passage route does not exceed fish passage standards provided in Section 4.1.1.2 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee's obligation for continued evaluation of the spillway using the DPEP will be fulfilled. "Exceeding fish passage standards" will be defined as study result estimating greater than the 2% mortality standard. However, if the estimate of mortality is greater than the 2% mortality standard, but within the margin of error, the Licensee in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service may determine that the standard has been met. Alternatively, the Licensee, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service may determine that additional evaluations or modified spillway operations are needed to achieve the standard, or to improve study methods or effort to reduce error around the estimate.

(5) If fish passage standards are exceeded (as defined in this License Article 33, paragraph (c)(4) above), the Licensee shall prepare, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, and file with the Commission, a report describing the causes of injury and mortality, and a plan, designs, and schedule for implementing spillway measures to address the causes of injury or mortality from the spillway passage route. Upon Commission approval, the Licensee shall implement the plan to modify the spillway passage route. The design modifications will strive to remedy the causes in the most expeditious way practicable.

(6) The cycle of evaluation and modification described in the DPEP and in this License Article 33, paragraphs (c)(4) and (c)(5) above will continue until the standards in License Article 33 paragraphs (c)(4) and (c)(5) above are not exceeded, but will not repeat for more than 10 years, cumulatively from the completion of the initial modifications of the downstream fish passage facilities (spillway, gate and hoist system, and AWS).

(7) At the end of the 10 year evaluation period described in this License Article 33 paragraph (c)(6) above, if injury and mortality rates are within the fish passage standards as provided in this License Article 33, paragraphs (c)(4) and (c)(5), the passage standard will be considered to have been met. If the passage standard is not met, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule for implementation of one of the following actions: construction of a new outflow structure designed to efficiently and safely passage fish; dam removal; or other measures. Upon Commission approval, the Licensee shall implement the plan.

(8) The results of assessing potential entrainment at the trap and haul, and AWS intake described in this License Article 33 above will be considered in the DAMP.

i. If qualitative and quantitative assessments do not show a substantial risk of entrainment at the AWS intake as determined by the Licensee, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, the Licensee's obligation for continued evaluation of the AWS intake using the DPEP will be fulfilled.

ii. If qualitative assessments of fish behavior in the vicinity of the AWS intake indicate that entrainment is a substantial risk, or if quantitative assessments indicate that substantial (e.g., >1% of downstream migrants of either Chinook or bulltrout) numbers of fish are observed to be entrained in the AWS as determined by the Licensee in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, the Licensee will develop a plan and schedule to take corrective actions, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service. The Licensee shall file the plan with the Commission and, upon Commission approval, implement the plan.

(9) After meeting fish passage standards provided in this License Article 33 Table 2 and paragraphs (c)(4) and (c)(5) during the 10 year evaluation cycle described in paragraph (c)(6) above, the Licensee shall monitor Project fish passage facilities, and in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission an annual report. The annual monitoring report is anticipated to include summaries of visual observations of fish, copies of spillway and gate inspection reports, how inspection findings will be addressed if needed, and documentation of the number of each species, age classes, and condition of all observed fish. The report will also include summaries of all analysis, if any, conducted on downstream fish passage, injury and mortality, in relation to fish passage facility operations, project operations (e.g. shut downs), and environmental conditions (e.g., instream flow).

(10) If in the course of annual monitoring of operations of the Trail Bridge spillway, gate and hoist system facilities after the initial 10 year evaluation period described in this License Article 33 paragraph (c)(6) above, and implementation of an action implemented pursuant to paragraph (c)(7) above, mortality or serious injury exceeds the standards provided in this License Article 33 Table 2 and paragraphs (c)(4) and (c)(5), the Licensee in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, will develop and file with the Commission a plan to implement corrective measures consistent with the then existing facilities.

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APPENDIX D

U.S. Department of Commerce, National Marine Fisheries Service Fishway Prescription for Carmen Smith Project No. 2242 as filed July 20, 2017

SECTION 18 PRESCRIPTIONS FOR FISHWAYS

B. Article 28. Fish Passage

Consistent with these license articles, the Licensee shall implement Section 4.1 Fish Passage of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. All of the provisions within this prescription have been agreed to by the Licensee as documented in the Amended and Restated Settlement Agreement (EWEB 2016a).

C. Article 29. Trap and Haul Fish Passage at Trail Bridge Dam

(a) Upstream Fish Passage Facilities and Standards

The Licensee shall design, construct, operate, and maintain a trap and haul facility at Trail Bridge Dam to provide upstream fish passage, as described in Section 4.1.2, Sections 1) through 6) of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. The Licensee shall design the trap and haul facility in consultation with the FWG and subject to approval by NMFS. The trap and haul facility shall be designed consistent with EWEB Technical Memorandum to NMFS: Trail Bridge Trap and Haul Design Criteria Summary dated June 28, 2016, and according to the NMFS criteria document entitled Anadromous Salmonid Passage Facility Design developed by National Marine Fisheries Service, Northwest Region (NMFS 2011) or current versions thereof for the purpose of supporting safe, timely, and effective upstream passage of fish, and to achieve upstream fish passage standards described in Table 1:

Table 1. Numeric standard for upstream passage of adult Chinook salmon and adult bull trout, following construction of the Trail Bridge Trap and Haul facility.

Species	Standard
Chinook	<1% adult mortality per year, including delay induced mortality
Bull trout	No more than 2 adult fish per year or 1% (whichever is higher) mortality; 5% injury per year

(1) Design and construct upstream trap and haul facilities at Trail Bridge dam: Within 6 months after License issuance, the Licensee shall, in consultation with

the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule for design and construction of the Trail Bridge Dam trap and haul facilities. Subject to Commission approval, within 3 years after the later of License issuance or final resolution of any administrative or judicial petition or appeals, or other formal agency adjudication relating to Section 4.1.2 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall complete construction of the Trail Bridge Dam trap and haul facilities**.**

(2) Demolish existing tailrace barrier below Trail Bridge Dam to provide access to new upstream passage facilities: Within 6 months after License issuance, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule for thedemolition of the existing tailrace barrier below Trail Bridge Dam, consistent with Section 4.1.2, Paragraph 6) of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. Subject to Commission approval, within 3 years after the later of License issuance or final resolution of any administrative or judicial petition or appeals, or other formal agency adjudication relating to this Section 4.1.2., the Licensee shall complete demolition of the existing tailrace barrier below Trail Bridge Dam, providing fish access to the trap and haul facility for upstream fish passage.

(b) Trail Bridge Upstream Passage Facilities Operations and Maintenance

No later than 6 months prior to planned completion of the trap and haul facilities, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, prepare and file with the Commission a Preliminary Operations and Maintenance Plan for Trap and Haul (POMPTH), consistent with Section 4.1.2, Paragraph 3) of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to provide an initial guide for the operation of the trap and haul facilities.

(c) Upstream Fish Passage Evaluation Program (UPEP)

The Licensee shall implement Section 4.1.6 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, which provides for three distinct plans to be implemented consecutively and that are designed to build upon one another in succession to provide monitoring of upstream fish migration through the Project for the duration of the License. The Licensee shall implement Section 4.1.6 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.1.6. The three stages of the Program are as follows:

Stage 1 - Upstream Passage Observation and Evaluation Plan (UPOEP)

(1) Six months prior to planned completion of the Trail Bridge Dam trap and haul facilities, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission, the Upstream Passage Observation and Evaluation Plan (UPOEP), consistent with Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to conduct hydraulic and biological monitoring at the Project.

(2) Within 6 months after Licensee's completion of the implementation of the UPOEP, Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare a report documenting the results of the evaluation and the data collected. Licensee shall file the report with the Commission along with comments by members of the FWG and describing how EWEB addressed or responded to the comments.

(3) If Licensee's implementation of the UPOEP verifies that the Project facilities function as designed, where applicable, and injury and mortality at the Project facilities are within the passage standards provided in Section (a) of this License Article 29 and Sections 4.1.1.1 of the November 2016 Amended and Restated Settlement Agreement, then no further hydraulic or biological evaluation by EWEB is required, except as provided in the Upstream Passage Ongoing Monitoring Plan (UPOMP).

(4) Within 6 months of the Commission approval of the report documenting results of the Upstream Passage Observation and Evaluation Plan (UPOEP) provided in this License Article 29 and Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, prepare and file with the Commission a Revised Operations and Maintenance Plan for Trap and Haul (ROMPTH) for the Trail Bridge trap and haul facility. Upon Commission approval, the Licensee shall implement the ROMPTH.

(5) Five years after commissioning of the trap and haul facilities, EWEB may, in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, file an amendment to the ROMPTH with the Commission to modify frequency and/or timing of trap operations, if warranted.

Stage 2 - Upstream Passage Adaptive Management Plan (UPAMP)

(6) If the results of the UPOEP as described in the completion report submitted to the Commission indicate the trap and haul facility induced mortality rate of adult Chinook salmon or bull trout exceeds the fish passage standards of Table 1 of this

License Article 29, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule, called the UPAMP, consistent with Section 4.1.6.2 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to address causes of injury or mortality. Upon Commission approval, the Licensee shall implement the UPAMP to modify the trap and haul facilities. The design modifications will address the causes in the most expeditious way practicable.

(7) Upon completion of the modifications, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, implement a modified version of the UPOEP to evaluate that the modifications have achieved the fish passage standards in Table 1 of this License Article 29. The cycle of evaluation and modification will repeat for no more than 10 upstream migration seasons.

(8) At the end of 10 upstream migration seasons of evaluation and modifications, if facility induced mortality rates of adult Chinook salmon or bull trout continue to exceed the fish passage standards provided in Table 1 of this License Article 29, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule for the design and construction of a volitional fish ladder or other agreed upon remedy including Project decommissioning. Within 12 months after Commission approval, the Licensee shall, in consultation with and subject to the approval of Fish Agencies and USDA Forest Service, complete design of a volitional fish ladder, decommissioning, or other approved remedy, and shall begin construction (or deconstruction) as soon as possible after completion and approval of design. If a volitional fish ladder or other remedy is constructed, the Licensee shall operate and maintain the facility throughout the term of the License. In the interim, the Licensee will continue to operate the trap and haul facility or other approved fish passage measures. If construction of the volitional ladder or other remedy interferes with operation of fish passage, the Licensee will implement other temporary means of passage.

Stage 3 - Upstream Passage Ongoing Monitoring Plan (UPOMP)

(9) Within 6 months of the Commission approval of the report documenting the UPOEP results, the Licensee shall , in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission, the Upstream Passage Ongoing Monitoring Plan (UPOMP), consistent with Section 4.1.6.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to describe the Licensee's ongoing upstream passage monitoring efforts at the Project. Upon Commission approval, the Licensee shall implement the UPOMP.

(10) The UPOMP will describe how the Licensee shall monitor Project fish

passage facilities, and report its findings to the FWG on an annual basis. The Licensee shall prepare the annual report in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service. The monitoring report is anticipated to include summaries of video monitoring and visual observations, as well as documentation of the number of each species, dates fish were observed in the trap, numbers of fish transported and released upstream, and condition of all observed fish. The report will also include summaries of all analyses, if any, conducted on successful fish passage, delay, injury, and mortality in relation to upstream fish passage facility operations, project operations (e.g. shut downs), and environmental conditions (e.g., instream flow).

(11) If, in the course of annual monitoring of operations of the Trail Bridge trap and haul facilities, mortality or serious injury fish passage standards provided in this License Article 29 and Section 4.1.1.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement are exceeded, the Licensee will notify the FWG and in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, develop a plan to implement corrective measures similar to the UPAMP as described above.

(12) After 10 annual UPOMP reports, the Licensee, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, may consider changing the reporting interval to less frequently than annually.

D. Article 30. Upstream Passage at the Carmen-Smith Spawning Channel

(a) In consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, the Licensee shall design, construct, operate and maintain upstream fish passage with steps no higher than 6 inches at the Carmen-Smith Spawning Channel entrance consistent with AMP-90% Design Submittal Volume 3, dated December 2012 (CH2MHill 2012) and the Anadromous Salmonid Passage Facility Design developed by National Marine Fisheries Service, Northwest Region (NMFS 2011) or current version thereof at the time of design, and a facility for upstream passage out of the channel at the spawning channel water control structure for the purpose of supporting safe, timely and effective upstream passage of fish at the spawning channel. The Licensee shall design the upstream passage spawning channel modifications in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service. Within one year after New License issuance, the Licensee shall prepare, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, and file with the Commission, a plan and schedule for design and construction of the spawning channel fish passage facilities. Subject to Commission approval, within four years after New License issuance, the Licensee shall complete construction of the spawning channel fish passage facilities.

(b) Within 12 months after the Licensee's completion of the evaluation described in the Upstream Passage Evaluation Program (UPEP) provided in License Article 29 and Section 4.1.6of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a Spawning Channel Operations and Maintenance Plan (SCOMP) to provide for operation of the spawning channel fish passage facilities. The Licensee shall base the SCOMP on the Anadromous Salmonid Passage Facility Design developed by National Marine Fisheries Service, Northwest Region (NMFS 2011) or current version thereof at the time of design, and the results of the Licensee's implementation of the Upstream Passage Observation and Evaluation Plan (UPOEP) described in Section 4.1.6 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. Upon Commission approval, the Licensee shall implement the SCOMP.

E. Article 32. Fish Protection at Carmen Power Plant

The Licensee, in consultation with the FWG and subject to the approval of the fish Agencies and USDA Forest Service, shall carry out a Carmen Power Plant biological evaluation, as described in Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. The evaluation will be used to construct, if needed, an adaptive approach for fish passage at the Carmen Power Plant tailrace by monitoring fish after adult spring Chinook salmon and bull trout are hauled from the Trail Bridge Dam trap and haul facilities and released in Trail Bridge Reservoir above Trail Bridge Dam, to determine if there is significant delay, substantial mortality, or serious injury to Chinook salmon and bull trout associated with upstream passage past the Carmen Power Plant tailrace as a result of its facilities or operations.

The standard for mortality and injury are considered to be exceeded if monitoring surveys document Carmen Power Plant facilities and operations result in three or more adult fish (any combination of bull trout or Chinook salmon) observed dead or seriously injured in a calendar year as provided in Section 4.1.1.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. If, based on the results from the Licensee's implementation of the Carmen Power Plant biological evaluation as described in Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the standard for significant delay or the standard for substantial mortality and serious injury is exceeded, the Licensee shall, in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a list of appropriate modifications or additions to Project facilities or operations designed to address identified substantial delay, significant mortality or serious injury. Upon Commission approval, Licensee shall implement the modifications or additions to Project facilities or operations.

F. Article 33. Downstream Passage at Trail Bridge Dam

(a) Downstream Fish Passage Facilities and Standards

The Licensee shall design, construct, operate, and maintain the Trail Bridge Dam spillway, gate and hoist system, and attraction water supply (AWS) for the purpose of supporting year round safe, timely, and effective downstream passage of fish consistent with the NMFS criteria document entitled Anadromous Salmonid Passage Facility Design developed by National Marine Fisheries Service, Northwest Region (NMFS 2011) or current version thereof at the time of design, in order to achieve downstream fish passage standards, regardless of passage route, described in Table 2. The Licensee shall design the spillway, gate and hoist system, and AWS in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service.

Table 2. Numeric standard for downstream passage for Chinook salmon and bull trout, following construction of the Trail Bridge Trap and Haul facility.

Species	Affected Life Stages	Standard
Chinook	fry and juveniles	2% mortality, 5% injury, per year
	Adult	No more than 2 fish per year or 2% mortality (whichever is higher); 5% injury, per year
Bull trout	fry and juveniles and subadults	2% mortality, 5% injury, per year
	Adult	No more than 2 fish per year or 2% mortality (whichever is higher); 5% injury, per year

(1) Within 6 months after License issuance, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan, schedule, and design for construction of modifications to the spillway, gate and hoist system, and for ceasing operation of the Trail Bridge power plant for the purposes of power generation. Subject to Commission approval, within 3 years after the later of License issuance or final resolution of any administrative or judicial petition or appeals, or other formal agency adjudication relating to Section 4.1.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall complete modifications to the spillway, gate and hoist system.

Upon completion of the upstream and downstream fish passage facilities, Licensee shall cease operation of the Trail Bridge power plant, except for purposes of maintaining the Trail Bridge power plant in safe working order, as provided in Section 4.1.3.2. of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement.

(2) The Licensee shall include (but not be limited to) in the design of the spillway, and gate and hoist system facilities the following:

i. Modification of the spillway gate to allow a 12-inch minimum opening to accommodate adult bull trout and adult Chinook passage,

ii. Modifications of the "flip bucket" and other features to promote laminar flow and reduce turbulence;

iii. Modifications to eliminate, to the extent possible the need to salvage adult fish from the flip bucket;

iv. Installation of gate hoist mechanism to allow fine control of gate openings and spillway flows to meet ramping criteria; and

v. Modification to tailrace configuration, if needed to ensure safe landing and discharge conditions for fish as they exit the spillway

(b) Trail Bridge Downstream Passage Facilities Operations and Maintenance

No later than 6 months prior to planned completion of modifications to the Trail Bridge Dam spillway, gate and hoist system, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, prepare and file with the Commission a Preliminary Operations and Maintenance Plan for Spillway (POMPS) for the modified spillway, and gate hoist system and Trail Bridge power plant. Upon Commission approval, the Licensee shall implement the POMPS.

(1) Within 12 months after completion of the evaluation described in the Downstream Passage Evaluation Program (DPEP) provided in this License Article 33 and Section 4.1.7 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, prepare and file with the Commission, a Revised Operations and Maintenance Plan for Spillway (ROMPS). Upon Commission approval, the Licensee shall implement the ROMPS.

(2) To minimize fish entrainment, the Licensee will limit operation of the Trail Bridge power plant turbine as provided in Section 4.1.3.2 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, including the following situations:

i. during the Trail Bridge Spillway maintenance and construction periods after consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service;

ii. to minimize use of the existing energy dissipation valve; or

iii. as may be necessary to meet FERC requirements, after prompt notification to the Fish Agencies.

(c) Downstream Fish Passage Evaluation Plan (DPEP)

(1) No later than 6 months prior to the Licensee's planned completion of modifications to the spillway, gate and hoist system as provided in this License Article 33 and Section 4.1.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a Downstream Passage Evaluation Plan (DPEP), Section 4.1.7 of Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to conduct hydraulic and biological monitoring of the spillway and the trap and haul AWS intake. The DPEP shall include an implementation schedule. Subject to Commission approval, the Licensee shall implement the DPEP, after completion of the spillway, gate and hoist modifications.

(2) Within 6 months after completion of the DPEP, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a DPEP report documenting the results of the monitoring and describing any findings that require implementation of the next phase, the Downstream Adaptive Management Plan (DAMP). The cycle of DPEP to DAMP has the potential to repeat, as described in Section 4.1.7.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement.

(3) The DPEP will include the Downstream Adaptive Management Plan (DAMP), to evaluate and modify downstream fish passage at Trail Bridge Dam, as described in Section 4.1.7.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement.

(4) If the results of the DPEP, as determined by the Licensee in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, indicate that the spillway passage route does not exceed fish passage standards provided in Section 4.1.1.2 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee's obligation for continued evaluation of the spillway using the DPEP will be fulfilled. "Exceeding fish passage standards" will be defined as study result estimating greater than the 2% mortality standard. However, if the estimate of mortality is greater than the 2% mortality standard, but within the margin of error, the Licensee in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service may determine that the standard has been met. Alternatively, the Licensee, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service may determine that additional evaluations or modified spillway operations are needed to achieve the standard, or to improve study methods or effort to reduce error around the estimate.

(5) If fish passage standards are exceeded (as defined in this License Article 33, paragraph (c)(4) above), the Licensee shall prepare, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, and file with the Commission, a report describing the causes of injury and mortality, and a plan, designs, and schedule for implementing spillway measures to address the causes of injury or mortality from the spillway passage route. Upon Commission approval, the Licensee shall implement the plan to modify the spillway passage route. The design modifications will strive to remedy the causes in the most expeditious way practicable.

(6) The cycle of evaluation and modification described in the DPEP and in this License Article 33, paragraphs (c)(4) and (c)(5) above will continue until the standards in License Article 33 paragraphs (c)(4) and (c)(5) above are not exceeded, but will not repeat for more than 10 years, cumulatively from the completion of the initial modifications of the downstream fish passage facilities (spillway, gate and hoist system, and AWS).

(7) At the end of the 10 year evaluation period described in this License Article 33 paragraph (c)(6) above, if injury and mortality rates are within the fish passage standards as provided in this License Article 33, paragraphs (c)(4) and (c)(5), the passage standard will be considered to have been met. If the passage standard is not met, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule for implementation of one of the following actions: construction of a new outflow structure designed to efficiently and safely passage fish; dam removal; or other measures. Upon Commission approval, the Licensee shall implement the plan.

(8) The results of assessing potential entrainment at the trap and haul, and AWS intake described in this License Article 33 above will be considered in the DAMP.

i. If qualitative and quantitative assessments do not show a substantial risk of entrainment at the AWS intake as determined by the Licensee, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, the Licensee's obligation for continued evaluation of the AWS intake using the DPEP will be fulfilled.

ii. If qualitative assessments of fish behavior in the vicinity of the AWS intake indicate that entrainment is a substantial risk, or if quantitative assessments indicate that substantial (e.g., >1% of downstream migrants of either Chinook or bull trout) numbers of fish are observed to be entrained in the AWS as determined by the Licensee in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, the Licensee will develop a plan and schedule to take corrective actions, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service. The Licensee shall file the plan with the Commission and, upon Commission approval, implement the plan.

(9) After meeting fish passage standards provided in this License Article 33 Table 2 and paragraphs (c)(4) and (c)(5) during the 10 year evaluation cycle described in paragraph (c)(6) above, the Licensee shall monitor Project fish passage facilities, and in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission an annual report. The annual monitoring report is anticipated to include summaries of visual observations of fish, copies of spillway and gate inspection reports, how inspection findings will be addressed if needed, and documentation of the number of each species, age classes, and condition of all observed fish. The report will also include summaries of all analysis, if any, conducted on downstream fish passage, injury and mortality, in relation to fish passage facility operations, project operations (e.g. shut downs), and environmental conditions (e.g., instream flow).

(10) If in the course of annual monitoring of operations of the Trail Bridge spillway, gate and hoist system facilities after the initial 10 year evaluation period described in this License Article 33 paragraph (c)(6) above, and implementation of an action implemented pursuant to paragraph (c)(7) above, mortality or serious injury exceeds the standards provided in this License Article 33 Table 2 and paragraphs (c)(4) and (c)(5), the Licensee in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, will develop and file with the Commission a plan to implement corrective measures consistent with the then existing facilities.

APPENDIX E

Reasonable and Prudent Measures and Terms and Conditions included in the U.S. Fish and Wildlife Service's Biological Opinion for the Relicensing of the Carmen Smith Project P-2242 as filed for the northern spotted owl on December 14, 2010 and for bull trout on August 3, 2018.

Bull Trout - Reasonable and Prudent Measures

1. Report on progress of implementing the proposed action and incidental take of bull trout through annual reporting of project activities.

2. In order to minimize potential harm and injury to bull trout during all activities (e.g. salvage, monitoring and evaluation, trap and haul activities) in which bull trout are handled, the Action Agencies and their permittee shall use best management practices for handling fish.

Bull Trout - Terms and Conditions for Bull Trout

1. The following term and condition is necessary for the implementation of RPM 1: Consistent with 50 CFR 402.14(i)3, which states that "...the Federal agency or any applicant must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement", the Action Agencies and EWEB will provide an annual report on the extent of management and monitoring efforts implemented for each year of the license in which take of bull trout occurs as well as the extent of take which occurred. The report for the previous year should be submitted to the Service's Oregon Fish and Wildlife Office no later than 120 days after the end of each calendar year. This information could be combined into the annual reporting to be completed per the Aquatics Management Plan (Stillwater Sciences 2016; Exhibit B (p. 89) to the Settlement Agreement). The report should be submitted to:

> Paul Henson, State Supervisor
> Oregon Fish and Wildlife Office
> 2600 SE 98th Avenue, Suite 100
> Portland, Oregon 97266

If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the nearest Service Law Enforcement Office, located at 9025 SW Hillman Court, Suite 3134, Wilsonville, Oregon 97070; phone: 503-682-6131. Care should be taken in handling sick or injured specimens to ensure effective treatment or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead

animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

2. The following terms and conditions are necessary for the implementation of RPM 2:

a. Monitoring and evaluation activities must be conducted in accordance with the final study plans as approved by the Service.

b. Bull trout may be captured by adult upstream migrant traps, seines, rotary screw traps, nets, and electrofishing. The Action Agencies and their permittee are authorized to capture, handle, and release bull trout in the quantities specified in Table 10.7.

c. All capture, retention, handling, and observation methods must be implemented at times that will avoid temperature stress to fish being sampled. At locations that have the potential to contain bull trout, sampling must not be done if the water temperature exceeds 59 °F. On hot summer days it may be necessary to conduct the activity in the morning or evening to avoid temperature stress to captured fish.

d. All netting used for capturing, handling, and holding of fish, including the unintentional capture of bull trout, must be composed of a fine mesh, knot-free material that will minimize injury to the fish.

e. All nets and sampling gear must be cleaned and disinfected prior to use, and prior to use for sampling in a different watershed.

f. Active traps must be monitored at least once daily, unless otherwise approved by the Service. Traps must be checked more frequently when crowding produced by an increasing catch rate or high debris loading results in a higher probability of injury or mortality to bull trout being held in a trap.

g. Authorized personnel must ensure that their hands are free of sunscreen, lotion, or insect repellent prior to conducting activities that may involve handling bull trout.

h. A healthy environment must be provided for bull trout held in a holding tank, and the holding time must be minimized. Water-to-water transfers, the use of shaded or dark containers, and supplemental oxygen must all be considered in designing fish handling operations.

i. Bull trout must be closely monitored in holding tanks if the ambient water temperature in these tanks is greater than 59 °F. All operations must cease if fish show signs of stress.

j. Holding tanks must be non-toxic plastic, aluminum, or stainless steel containers. Do not use metal containers that have lead or zinc coatings.

k. The Action Agencies and their permittee may collect fish statistics (e.g., length, weight, sex, ripeness, scale sample, mark, condition/health, angling injury, etc.) from captured bull trout. Handling and measurement of captured fish must follow commonly accepted techniques for salmonid field sampling. If stream temperatures are greater than 59 °F, the collection of fish statistics must be limited to fish length to avoid over-stressing captured fish.

l. Bull trout may be marked via a non-lethal fin clip during mark-recapture

population surveys. This fin clip may be used as a bio-sample.

m. To reduce stress on captured bull trout, handling of the same individual multiple times during permitted activities must be avoided, to the extent possible.

n. All direct handling and tagging activities must cease when stream water temperature exceeds 63 °F.

o. All juvenile and larger bull trout must be scanned for the presence of an existing functional PIT tag. If an existing PIT tag is detected in the fish, the fish must not be tagged with an additional PIT tag.

p. Any captured bull trout showing signs of injury or considerable stress prior to tagging must not be tagged. The fish must be placed in a holding tank and released upon showing signs of adequate recovery.

q. If electrofishing is used for salvage, electrofishing must be conducted using the methods outlined in the National Marine Fisheries Service's guidelines to minimize impacts to listed salmonids available at: http://www.westcoast.fisheries.noaa.gov/publications/reference_documents/esa_refs/section4d/electro2000.pdf.

r. Electrofishing equipment must be operated at the lowest possible effective settings to minimize injury or mortality to bull trout. Bull trout may be held for up to 1 hour during electrofishing operations. To avoid intra-species predation, numerous bull trout should not be held in the same live-well.

s. Electrofishing in known bull trout spawning areas shall only occur from May to mid-July.

t. Electrofishing activities must be minimized where larger, fluvial bull trout might be collected.

u. All sampling and observation methods must be implemented at times that will minimize disturbance of spawning fish. Any purposeful take of bull trout that are actively spawning or are near bull trout spawning sites is prohibited. Surveyors must minimize collection, survey, and sampling activities near spawning areas. The permittee must not physically disturb bull trout redds during these activities.

v. Disturbance of or impacts to bull trout habitat must be minimized during project activities. Surveyors must take precautions to avoid stepping in areas that may be potential redd locations (i.e., small gravel deposits behind boulders; under overhanging vegetation; near wood debris or logs; or areas of hydraulic influence such as confluences of tributaries, springs, seeps, pool tail crests, or edges of pools), since redds of resident and small fluvial bull trout may be difficult to see due to their small size.

Northern Spotted Owls - Reasonable and Prudent Measures

1. Prior to and during construction activities, implement a monitoring program using the ITS methodology to ensure the levels of incidental take set forth in this ITS are not exceeded.

2. Provide yearly progress reports, which are to be submitted to the Service documenting

effects until the construction activities are completed.

3. Reduce harassment to two spotted owls occupying spotted owl site, 0822, that are actively producing fledglings and contributing to the recovery of this species.

Northern Spotted Owl - Terms and Conditions

To implement RPM number 1, the Commission or its licensee shall undertake the following activities:

1.1 The proposed action include measures to monitor effects of the Project against current spotted owl data and yearly reporting of impacts to spotted owls. Monitoring will comply with the ITS Methodology for Estimating the Number of Northern Spotted Owls Affected by Proposed Federal Actions (USFWS et al. 2008).

1.2 EWEB will update the spotted owl analysis prior to implementation of construction using the most recent GIS data layers for activity centers and for habitat. Any update to construction designs and refinement to the construction activity will be included. EWEB will include current spotted owl survey and habitat data collected from OCWRU and USFS. Monitoring will ensure that actual levels of effect do not exceed effects anticipated, and do not exceed incidental take anticipated by this assessment.

1.3 If the effects to spotted owls is greater than anticipated within this Opinion, then construction plans will be changed to ensure that EWEB's activities comply with the level of take stated in this Opinion or they will seek re-initiation.

To implement RPM number 2, the Commission or its licensee shall undertake the following activities:

2.1 Annual reporting regarding the implementation of the wildlife management plan will include a yearly report of adverse effects to spotted owls and all impacts to spotted owl habitat (both dispersal only and suitable habitat by land use allocation) associated with construction activities at the Project (see 14.0 Reporting Requirements). Such reports may be incorporated into the annual reporting requirements of Wildlife Management Plan (Exhibit D of the Settlement Agreement), provided that the information required by this Opinion is clearly identified.

To implement RPM number 3, the Commission or its licensee shall undertake the following activities:

3.1 No blasting within the disruption distance of site 0822 during the critical breeding season unless the site has been documented to be non-nesting. Mitigation efforts such as smaller charges and blasting mats may be used to reduce noise levels so

that the disruption distance will no longer overlap the nest location. Additionally, topographic features may be used to estimate the potential for disruption overlap with the nest site.

3.2 Delay blasting as late into the year as possible when within the disruption distance of site 0822 during the late breeding season unless the site has been documented to be non-nesting.

APPENDIX F

Reasonable and Prudent Measures and Terms and Conditions included in the National Marine Fisheries Service's Biological Opinion for the Relicensing of the Carmen Smith Project P-2242 filed August 16, 2018

Reasonable and Prudent Measures

The following RPMs are necessary and appropriate to minimize the effect of anticipated incidental take of UWR Chinook salmon.

1. Minimize incidental take from the operation of the Project by requiring that EWEB follow all of the measures in the SA relating to Chinook salmon, including Proposed License Articles listed in Section 1.3 (Proposed Federal Action). (2016 Settlement Agreement, Exhibit A).

2. Minimize incidental take from the unanticipated release of hazardous substances, toxics, excessive sediment, debris, and other materials into the McKenzie River and its tributaries, the spawning channel, and Trail Bridge fish passage facilities by following the terms and conditions of the ODEQ 401 Water Quality Certification for FERC licensing, ODEQ 401 Water Quality Certification for construction, Water Quality Management Plan, 404 permit, NPDES permit and by following the Erosion and Sediment Control Plan required by NPDES permit.

3. Minimize incidental take from in-water and near-water construction activities by carrying out the CMP as described in the SA, Exhibit A, Article 16, which will include BMPs for the proposed action designed to avoid or minimize adverse effects to water quality and aquatic resources.

4. Minimize incidental take from Chinook salmon salvage operations by carrying out license conditions that avoid or minimize adverse effects.

5. Minimize Smith Dam spill events, in terms of frequency, magnitude and duration, as described in the SA, Exhibit B, Section 4.2.4, which includes measures to protect future habitat restoration activities, and Chinook salmon using those habitat restorations, in the Smith Bypass Reach.

6. Develop and carry out the WQMP, as required and described by ODEQ in the 401 Water Quality Certification anticipated to be issued pursuant to the proposed license.

7. Carry out the Aquatics Management Plan included in the SA, Exhibit B, and Recreation and Aesthetics Management Plan included in the SA,

Exhibit C, which includes measures to reduce illegal and unintended harvest and harassment of UWR Chinook salmon.

8. Ensure completion of an annual monitoring and reporting program to confirm that the measures FERC requires for the purpose of avoiding and minimizing incidental take are effective as required and described in Article 15 of the SA, Exhibit A, and that all project-related observations of dead or injured salmon adults or juveniles are reported to NMFS as required and described in Article 26 of the SA, Exhibit A.[106] Conduct required biological monitoring to evaluate post-construction conditions and operational changes, as required by Exhibit B of the SA.

Terms and Conditions

1. The following terms and conditions implement reasonable and prudent measure 1:
    a. Follow all of the SA provisions that relate to Chinook salmon (including, but not limited to fish passage, aquatic habitat conditions, instream flows, flow fluctuations, habitat enhancement, recreation, and construction and monitoring) for this Project.
2. The following terms and conditions implement reasonable and prudent measure 2:
    a. Follow all terms and conditions and requirements in any ODEQ 401 Water Quality Certification, ODEQ 401 Water Quality Certification for construction, WQMP, 404 permit, and National Pollutant Discharge Elimination System (NPDES) permit issued for this Project.
    b. Complete and carry out the WQMP as required and described by ODEQ in the 401 Water Quality Certification, which will include BMPs for oil and hazardous materials spill prevention, disaster response, and ongoing operations and maintenance to avoid, minimize, and reduce potential detrimental effects to listed Chinook salmon and critical habitat.
    c. Maintain and carry out the Spill Prevention, Control, and Countermeasure Plan and any other applicable contingency plan as required and described by ODEQ in Section 10 of the 401 Water Quality Certification.

[106] The terms and conditions incorrectly referenced Article 27 of the Settlement Agreement, which is the reservation of authority to prescribe fishways. Therefore, staff modified NMFS's terms and conditions to reference Article 26 (reporting of harm to fish and listed wildlife).

d. Maintain and carry out the Erosion and Sediment Control Plan as required and described in NPDES permits 1200-C & 1200-CA, as applicable, issued by ODEQ.

3. The following terms and conditions implement reasonable and prudent measure 3:
    a. Follow all terms and conditions and requirements in the ODEQ 401 Water Quality Certification, the ODEQ 401 Water Quality Certification for construction, WQMP, 404 permit, and NPDES permit for construction activities.
    b. Maintain and carry out the Erosion and Sediment Control Plan as required and described in NPDES permits 1200-C & 1200-CA, as applicable, issued by ODEQ.
    c. Develop the CMP and schedule as required and described in the SA, Exhibit A, Article 16, in consultation with and subject to approval by NMFS. File the CMP with FERC within 6 months of license issuance. Following FERC approval of the CMP, carry out the CMP for all construction activities that may impact aquatic habitat, including fish passage facilities and habitat enhancement projects for Chinook salmon. Include in the CMP all necessary BMPs to minimize detrimental effects to Chinook salmon and their critical habitat from turbidity and sedimentation, interim operations, and handling effects associated with salvage and temporary passage.
        i. CMP Contents. The CMP will contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations. Construction activities carried out in the area of the Carmen Diversion Reservoir, Carmen Diversion Dam and upper Carmen Bypass Reach will be included in the CMP but are not required to meet all the conditions of this incidental take statement, because they are so distant from Chinook salmon habitat that take as a result of these activities would be undetectable and insignificant.
            1. The name and address of the party(s) responsible for accomplishment of the CMP.
            2. Practices to prevent erosion and sedimentation associated with access roads, decommissioned roads, stream crossings, drilling sites, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations, and staging areas.
            3. Practices to confine, remove, and dispose of excess concrete, cement, and other mortars or bonding agents, including measures for washout facilities.
            4. A description of any regulated or hazardous products

or materials that will be used for the construction activity, including procedures for inventory, storage, handling, and monitoring.

5. A spill containment and control plan for the construction activity (either a single plan for all construction or individual plans for each construction activity) with notification procedures, specific cleanup and disposal instructions for different products, quick response containment and cleanup measures that will be available on the site, proposed methods for disposal of spilled materials, and employee training for spill containment.
6. Practices to prevent construction debris from dropping into any stream or water body, and to remove any material as soon as reasonably practicable that does drop with a minimum disturbance to the streambed and water quality.
7. Erosion control materials (e.g., silt fence, straw bales, and aggregate) in excess of those installed must be available on site for immediate use during emergency erosion control needs.
8. Temporary erosion and sediment controls will be used on all exposed slopes during any hiatus in work exceeding 7 days.

ii. Inspection of erosion controls. During construction, the operator must monitor instream turbidity and inspect all erosion controls daily during the rainy season (October through May) and weekly during the dry season (June through September), or more often as necessary, to ensure the erosion controls are working adequately.[107]

1. If monitoring or inspection shows that the erosion controls are ineffective, mobilize work crews immediately to make repairs, install replacements, or install additional controls as necessary.
2. Remove sediment from erosion controls once it has

[107] "Working adequately" means that project activities do not increase ambient stream turbidity by more than 10% above background 100 feet below the discharge, when measured relative to a control point immediately upstream of the turbidity-causing activity. The Licensee may request that this standard be adjusted by NMFS based on review of the ODEQ 401 Water Quality Certification for construction, and in coordination with ODEQ.

reached one-third of the exposed height or capacity of the control.

iii. Construction discharge water. Treat all discharge water created by construction (e.g., concrete washout, pumping for work area isolation, vehicle wash water, drilling fluids) as follows:

1. Water quality. Design, build, and maintain facilities to collect and treat all construction discharge water, including any contaminated water produced by drilling, using the best available technology applicable to site conditions. Provide treatment to remove debris, nutrients, sediment, petroleum hydrocarbons, metals, and other pollutants likely to be present.
2. Discharge velocity. If construction discharge water is released using an outfall or diffuser port, velocities will not exceed 4 fps, and the maximum size of any aperture will not exceed one inch.
3. Spawning areas. Do not release construction discharge water within 300 ft upstream of spawning areas unless it is clean construction discharge water.
4. Pollutants. Do not allow pollutants, including green concrete, contaminated water, silt, welding slag, sandblasting abrasive, or grout cured less than 24 hours to contact any wetland or the 2-year floodplain, except cement or grout when abandoning a drill boring or installing instrumentation in the boring.
5. Drilling discharge. All drilling equipment, drill recovery and recycling pits, and any waste or spoil produced, will be completely isolated to prevent drilling fluids or other wastes from entering the stream.
    a. All drilling fluids and waste will be completely recovered and then recycled or disposed to prevent entry into flowing water.
    b. Drilling fluids will be recycled using a tank instead of drill recovery/recycling pits, whenever feasible.
    c. When drilling is completed, attempts will be made to remove the remaining drilling fluid from the sleeve (e.g., by pumping) to reduce turbidity when the sleeve is removed.

iv. Piling installation: Install temporary and permanent pilings as depicted on NMFS-approved design drawings. Sound attenuation measures, including vibration dampeners, and

unconfined or confined bubble curtains, will be used when impact driving steel pilings. Approval by NMFS of the measures to be used for piling installation is required before construction.

v. Piling removal: If a temporary or permanent piling will be removed from water containing Chinook salmon, the following conditions apply.
    1. Dislodge the piling with a vibratory hammer.
    2. Once loose, place the piling onto the construction barge or other appropriate dry storage site.
    3. If a treated wood piling breaks during removal, either remove the stump by breaking or cutting 3 feet below the sediment surface or push the stump in to that depth, and then cover it with a cap of clean substrate appropriate for the site.

vi. During completion of habitat enhancement activities, no pollutants of any kind (sewage, waste spoils, petroleum products, etc.) should come in contact with the water body or wetlands nor their substrate below the mean high-high water elevation or 10-year flood elevation, whichever is greater.

vii. Treated wood.
    1. Construction or habitat enhancement activities will not use treated wood if it may come in contact with flowing water or if it will be placed over water, except for pilings installed following NMFS' guidelines.
    2. Visually inspect treated wood before final placement to detect and replace wood with surface residues or bleeding of preservative.
    3. Construction or habitat enhancement activities that require removal of treated wood will use the following precautions:
        a. Treated wood debris. Take steps designed to insure that no treated wood debris falls into the water. If treated wood debris does fall into the water, remove it immediately.
        b. Disposal of treated wood debris. Dispose of all treated wood debris removed during a project, including treated wood pilings, at an upland facility approved for hazardous materials of this classification or recycle or reuse the treated wood outside of aquatic and riparian habitat. Do not leave treated wood pilings in the water or stacked on the streambank.

viii. Preconstruction activity. Complete the following actions before significant alteration of the construction area:
    1. Marking. Flag the boundaries of clearing limits associated with site access and construction to prevent ground disturbance of critical riparian vegetation, wetlands, and other sensitive sites beyond the flagged boundary. Construction activity or movement of equipment into existing vegetated areas must not begin until clearing limits are marked.
    2. Minimize areas impacted by construction. Construction impacts will be confined to the minimum area necessary to complete the construction.
    3. Emergency erosion controls. Ensure that the following materials for emergency erosion control are on site:
        a. A supply of sediment control materials (e.g., silt fence, straw bales).
        b. An oil-absorbing, floating boom whenever surface water is present.
    4. Temporary erosion controls. All temporary erosion controls will be in place and appropriately installed downslope of construction activity within the riparian buffer area until site rehabilitation is complete.

ix. Temporary access roads.
    1. Steep slopes. Do not build temporary roads mid-slope or on slopes steeper than 30 percent.
    2. Minimizing soil disturbance and compaction. Low-impact, tracked drills will be walked to a survey site without the need for an access road. Minimize soil disturbance and compaction for other types of access whenever a new temporary road is necessary within 150 ft of a stream, water body, or wetland by clearing vegetation to ground level and placing clean gravel over geotextile fabric, unless otherwise approved in writing by NMFS.
    3. Temporary stream crossings.
        a. Do not allow equipment in the flowing water portion of the stream channel where equipment activity could release sediment downstream, except at designated stream crossings unless otherwise approved by NMFS.
        b. Minimize the number of temporary stream crossings.
        c. Design new temporary stream crossings as

follows:

i. Survey and map any potential spawning habitat within 300 ft downstream of a proposed crossing.
ii. Do not place stream crossings at known or suspected spawning areas or within 300 ft upstream of such areas if spawning areas may be affected.
iii. Design the crossing to provide for foreseeable risks (e.g., flooding and associated bedload and debris) to prevent the diversion of stream flow out of the channel and down the road if the crossing fails.

d. Vehicles and machinery will cross-riparian buffer areas and streams at right angles to the main channel wherever reasonably possible.

x. Obliteration. When the project is completed, obliterate all temporary access roads, stabilize the soil, and revegetate the site. Abandon and restore temporary roads in wet or flooded areas by the end of the in-water work period.

xi. Vehicles and heavy equipment. Restrict use of heavy equipment as follows:

1. Choice of equipment. When heavy equipment will be used, the equipment selected will have the least adverse effects on the environment (e.g., minimally sized, low ground pressure equipment).
2. Vehicle and material staging. Store construction materials and fuel, and operate, maintain, and store vehicles as follows:
   a. To reduce the staging area and potential for contamination, ensure that only enough supplies and equipment to complete a specific job will be stored on-site.
   b. Complete vehicle staging, cleaning, maintenance, refueling, and fuel storage, except for that needed to service boats, in a vehicle staging area placed 150 ft or more from any stream, water body, or wetland, unless otherwise approved in writing by NMFS.
   c. Inspect all vehicles operated within 150 ft of any stream, water body, or wetland daily for fluid leaks before leaving the vehicle staging

area. Repair any leaks detected in the vehicle staging area before the vehicle resumes operation. Document inspections in a record that is available for review on request by NMFS.

d. Before activities begin and as often as necessary during construction activities, steam clean all equipment that will be used below the bankfull elevation until all visible external oil, grease, mud, and other visible contaminates are removed. Any washing of equipment must be conducted in a location that will not contribute untreated wastewater to any flowing stream or area that drains to a stream.

e. Diaper all stationary power equipment (e.g., generators, cranes, stationary drilling equipment) operated within 150 ft of any stream, waterbody, or wetland to prevent leaks, unless suitable containment is provided to prevent potential spills from entering any stream or water body.

3. At the end of each work shift, vehicles must not be stored within or over the waterway.

xii. Site preparation. Conserve native materials for site rehabilitation.

1. Minimize alteration or disturbance of the streambanks and existing riparian vegetation to the greatest extent reasonably possible.
2. Except within the exact footprint of the construction zone, all existing native vegetation within 150 ft of the edge of bank should be retained, to the greatest extent reasonably possible.
3. If possible, leave native materials where they are found.
4. If native materials are moved, damaged, or destroyed, replace them with a functional equivalent during site rehabilitation.
5. Stockpile any large wood, native vegetation, weed-free topsoil, and native channel material displaced by construction for use during site rehabilitation. (6) Mechanical removal of undesired vegetation and root nodes is permitted, but herbicides may be used as part of habitat restoration work, provided no herbicide will

be applied within 100 ft of the edge of the bank.

xiii. Isolation of in-water work area. If adult or juvenile Chinook salmon are reasonably certain to be present, or if the work area is less than 300 ft upstream of Chinook salmon spawning habitats, completely isolate the work area from the active flowing stream using inflatable bags, sandbags, sheet pilings, or similar materials, unless otherwise approved in writing by NMFS.

xiv. Earthwork. Complete earthwork (including drilling, excavation, dredging, filling, and compacting) as quickly as reasonably possible.

xv. Excavation. Material removed during excavation will only be placed in locations where it cannot enter sensitive aquatic resources. Whenever topsoil is removed, it must be stored in an upland location and secured to prevent sediment-laden runoff from reentering streams or wetlands. Topsoil must be reused on site to the greatest extent reasonably possible. If riprap is used for protecting a culvert inlet or outlet, it will be class 350 metric or larger, and topsoil will be placed over the rock and planted with native woody vegetation.

1. Drilling and sampling. If drilling, boring, or jacking is used, the following conditions apply.
    a. Isolate drilling operations from stream channels using a steel pile, sleeve, or other appropriate isolation method to prevent drilling fluids from contacting water.
    b. If it is necessary to drill through a bridge deck, use containment measures to prevent drilling debris from entering the stream channel.
    c. If directional drilling is used, the drill, bore, or jack hole will span the channel migration zone and any associated wetland or wetted stream channel.
    d. Sampling and directional drill recovery/recycling pits, and any associated waste or spoils, will be completely isolated from surface waters, off-channel habitats, and wetlands. All drilling fluids and waste will be recovered and recycled or disposed of to prevent future entry into flowing water.
    e. If a drill boring conductor breaks and drilling fluid or waste is visible in water or a wetland, all drilling activity will cease, pending written

approval from NMFS to resume drilling.

2. Site stabilization. Stabilize all disturbed areas, including obliteration of temporary roads, following any break in work, unless construction will resume within 4 days.
3. Source of materials. Obtain boulders, rock, woody materials, and other natural construction materials used for the project outside the riparian buffer area. Spawning gravel for augmentation of spawning habitats must be washed (i.e. cleaned, rinsed rock) river rock, of suitable size for UWR Chinook spawning (as appropriate by location), and if possible, from a source within the local watershed.

xvi. Stormwater management: Prepare and carry out stormwater management practices for construction of any new or refurbished Project-related facility or habitat enhancement project that will produce a new impervious surface or a land cover conversion that slows the entry of water into the soil.

1. The goal is to avoid and minimize adverse effects due to the quantity and quality of stormwater runoff for initial construction, and throughout the life of the newly completed facility (e.g., fish ladder, new road, culvert or habitat enhancement project that requires extensive land clearing) by maintaining or restoring natural runoff conditions. The following criteria and pertinent elements listed in this section "n" must be met to achieve the following functions:
    a. Minimize, disperse and infiltrate stormwater runoff onsite using sheet flow across permeable vegetated areas to the maximum extent reasonably possible without causing flooding, erosion impacts, or long-term adverse effects to groundwater.
    b. Pretreat stormwater from pollution generating surfaces, including bridge decks, to the extent reasonably possible, before infiltration or discharge into a freshwater system, as necessary to minimize any nonpoint source pollutant (e.g., debris, sediment, nutrients, petroleum hydrocarbons, metals) likely to be present in the volume of runoff predicted from a 6-month, 24-hour storm.
2. Runoffs/discharge into a freshwater system. When

stormwater runoff will be discharged directly into fresh surface water or a wetland, or indirectly through a conveyance system, the following requirements apply.

a. Maintain natural drainage patterns and, whenever reasonably possible, ensure that discharges from the work site occur at the natural location.
b. Use a conveyance system comprised entirely of manufactured elements (e.g., pipes, ditches, outfall protection) that extends to the ordinary high water line of the receiving water.
c. Stabilize any erodible elements of this conveyance system as necessary to prevent erosion.
d. Do not divert surface water from, or increase discharge to, an existing wetland if that will cause a significant adverse effect to wetland hydrology, soils or vegetation.
e. The velocity of discharge water released from an outfall or diffuser port may not exceed 4 feet per second.
f. Waste anesthetic-laden water must be disposed of in accordance with applicable laws.

xvii. Minimize the frequency and magnitude of drawdown in Trail Bridge Reservoir to the extent reasonably possible for construction of fish passage facilities at Trail Bridge Dam and improvements to the Carmen Powerhouse, including the powerhouse bypass valve, and address this condition in the CMP required and described in the SA Article 16, Exhibit A.

xviii. In-water work in the spawning channel must not occur when Chinook salmon are spawning and eggs are incubating there, unless approved by NMFS.

xix. Gravel augmentation in the Lower Carmen Bypass Reach must occur outside of the Chinook salmon spawning and incubation periods, unless approved by NMFS.

xx. In-water work. Work below the bankfull elevation[108] will be completed during the proposed in-water work period from

[108] 'Bankfull elevation' means the bank height inundated by a 1.5 to 2-year average recurrence interval and may be estimated by morphological features such as average bank height, scour lines and vegetation limits.

July 1 to August 15, unless otherwise approved in writing by NMFS. Most of the large construction activities in the proposed action will likely require some in-water work outside of this period, and EWEB must obtain NMFS approval prior to initiating such work. EWEB must notify NMFS 1 week before in-water work begins and again 1 day prior to the anticipated start, and within 1 week after in-water work is completed. Once the area behind a cofferdam is dewatered, work in that area is not "in-water work."

xxi. Cessation of work. Construction activities will cease under high flow conditions that may result in inundation of the construction area, except for efforts to avoid or minimize resource damage. Construction sites must be stabilized in advance of expected severe weather events. All materials, equipment, and fuel must be removed if flooding of the area is expected to occur within 24 hours.

xxii. Fish screens. All temporary water intakes used for a construction project, including pumps used to isolate an in-water work area, will have a fish screen installed, operated, and maintained according to NMFS' fish screen criteria. This clause does not authorize screens for any permanent use.

xxiii. Construction activities associated with habitat enhancement and erosion control measures must meet or exceed BMPs and other performance standards contained in the applicable state and Federal permits.

xxiv. Construction monitoring and reporting. FERC will ensure that the Applicant submits an annual report to NMFS describing the status of construction activities required by the SA and License and, if completed, the success in meeting the RPMs and associated terms and conditions of this incidental take statement. The report will include the following:

1. Construction activities identification.
2. Name of Applicant staff person responsible for construction activities, construction activities names, and detailed description of the activities.
3. Construction activities' location by 5th or 6th field HUC and by latitude and longitude a s determined from the appropriate USGS 7-minute quadrangle map
4. .Starting and ending dates for the work completed, or expected completion date for ongoing construction activities.

xxv. Photo documentation. Photo documentation of habitat conditions at the construction site before, during, and after

completion.

1. Include general views and close-ups showing details of the construction activities and affected site, including pre- and post-construction.
2. Label each photo with date, time, construction activity name, photographer's name, and documentation of the subject activity.

xxvi. Project data:

1. Work cessation. Dates work ceased because of high flows, if any.
2. Pollution and erosion control. A summary of pollution and erosion control inspections, including any erosion control failures, contaminant releases, and correction efforts.
3. Description of site preparation.
4. Isolation of in-water work area, capture, and release of Chinook salmon.
    a. Supervisory fish biologist's name and address.
    b. Methods of work area isolation and take minimization.
    c. Stream conditions before, during, and within 1 week after completion of work area isolation.
    d. Means of fish capture.
    e. Number of Chinook salmon captured.
    f. Location and condition of all Chinook salmon released.
    g. Any incidence of observed injury or mortality of Chinook salmon.
5. Streambank protection.
    a. Type and amount of materials used.
    b. Project size - one bank or two, width, and linear feet.
6. Site rehabilitation. Photo or other documentation that site rehabilitation performance standards were met.

d. NMFS will be reviewing the detailed construction plans submitted to advise FERC regarding whether or not those plans are likely to meet the BMPs articulated in this incidental take statement's terms and conditions, or such additional BMPs that NMFS deems appropriate.

4. The following terms and conditions implement reasonable and prudent measure 4:
    a. Before and intermittently during pumping to isolate an in-water work area or during any other event where listed Chinook salmon are trapped in a water quality limited or dewatering area, attempt to

capture these fish from the isolated area using trapping, seining, electrofishing, or other methods as are prudent to minimize risk of injury, and then release them at a safe and suitable release site.

b. The entire capture and release operation will be conducted or supervised by a fishery biologist experienced with work area isolation and competent to ensure the safe handling of all ESA-listed fish.
c. If backpack electrofishing methods are used, workers must comply with NMFS' Guidelines for Electrofishing (NMFS 2000), or as amended, and summarized below. These measures can be modified based on agreement between the Applicant and NMFS.
    i. Do not electrofish near adult listed Chinook salmon in spawning condition or near redds containing eggs.
    ii. Keep equipment in good working condition. Complete manufacturers' preseason checks, follow all provisions, and record major maintenance work in a log.
    iii. Train the crew by a crew leader with at least 100 hours of electrofishing experience in the field using similar equipment. Document the crew leader's experience in a logbook. Complete training in waters that do not contain listed fish before an inexperienced crew begins any electrofishing.
    iv. Measure conductivity and set voltage as follows:

Conductivity (µS/cm)	**Voltage**
Less than 100	900 to 1100
100 to 300	500 to 800
Greater than 300	150 to 400

    v. Use direct current (DC) at all times.
    vi. Begin each session with pulse width and rate set to the minimum needed to capture fish. These settings should be gradually increased only to the point where fish are immobilized and captured. Start with a pulse width of 500µs and do not exceed 5 milliseconds. Pulse rate should start at 30Hz and work carefully upward. In general, pulse rate should not exceed 40 Hz, to avoid unnecessary injury to the fish.
    vii. The zone of potential fish injury is 0.5 meters from the anode. Care should be taken in shallow waters, undercut banks, or where fish can be concentrated, because in such areas the fish are more likely to come into close contact with the anode.
    viii. Work the monitoring area systematically, moving the anode continuously in a herringbone pattern through the water. Do not electrofish one area for an extended period.

ix. Have crew members carefully observe the condition of the sampled fish. Dark bands on the body and longer recovery times are signs of injury or handling stress. When such signs are noted, the settings for the electrofishing unit may need adjusting. End sampling if injuries occur or abnormally long recovery times persist.
x. Whenever possible, place a block net below the area being sampled to capture stunned fish that may drift downstream.
xi. Record the electrofishing settings in a logbook along with conductivity, temperature, and other variables affecting efficiency. These notes, with observations on fish condition, will improve technique and form the basis for training new operators.

d. Do not use seining or electrofishing if water temperatures exceed 18°C unless no other more suitable and effective method of capture is reasonably available.
e. Handle ESA-listed fish with extreme care, keeping fish in water to the maximum extent possible during seining and transfer procedures, to prevent the added stress of out-of-water handling.
f. Transport fish by providing circulation of clean cold water in aerated buckets, tanks, or in sanctuary nets that hold water during transfer. Minimize holding times.
g. Release fish into a safe and appropriate release site as quickly as possible, and as near as possible to the original capture sites
h. .Do not transfer ESA-listed Chinook salmon to anyone except NMFS personnel, unless otherwise approved in writing in advance of the transfer.
i. Obtain all other Federal, state, and local permits necessary to conduct the capture and release activity.
j. Allow NMFS or its designated representative to accompany the capture team during the capture and release activity, and to inspect the team's capture and release records and facilities.
k. Submit an electronic copy of the Salvage Report Form to NMFS within 10 calendar days of completion of the salvage operations, noting the quantities and species of fish salvaged.
l. Fish salvage operations must be re-conducted should the isolated construction areas be temporarily hydraulically re-connected to the adjacent waterway, such as after a high-water event or cofferdam failure.

5. The following terms and conditions implement reasonable and prudent measure 5:
    a. Develop and complete, in consultation with and subject to approval by NMFS, and carry out operating guidelines to minimize spill at

Smith Dam spillway as required by the SA, Exhibit B, Section 4.2.4.

b. Determine, in consultation with and subject to approval by NMFS, the appropriate sizing of the Carmen Power Plant bypass valve (800 to 1,000 cfs) to minimize spill events at the Smith Dam spillway.

6. The following terms and conditions implement reasonable and prudent measure 6:
    a. Develop and carry out the Water Quality Management Plan as described in the SA, Exhibit A, Article 25, and in consultation with NMFS.
    b. To ensure Project modifications and operations comply with standards for total dissolved gas, the WQMP must include monitoring of TDG as required and described by ODEQ in the 401 Water Quality Certification, Section 8.
    c. To ensure compliance with proposed instream flows in the Smith and Lower Carmen Bypass Reaches, install and operate gauges at the locations and provide an annual report in accordance with Section 4.2 of the Aquatics Management Plan, Exhibit B of the SA. Beginning with the first year in which scheduled water releases from Project dams are required, prepare and submit to NMFS an annual report of average hourly flows, or other summary metrics as reviewed by the FWG and agreed to by EWEB and NMFS, at all monitored locations. The report must include flow data, reservoir elevations, and records of spill events. In the event the gages are installed and operational prior to scheduled water releases into the bypass reaches, collect baseline data, and prepare and submit to NMFS an annual report of average hourly flows, or other summary metrics, to inform NMFS about instream flows from Bunchgrass Creek into Smith Bypass Reach, and spring flows in the Lower Carmen Bypass Reach.
7. The following terms and conditions implement reasonable and prudent measure 7:
    a. Provide funding for a. Forest Service Forest Protection officer (half-time) to enforce and provide information about Oregon fishing regulations in the Project reservoirs and bypassed reaches as provided in the SA, Exhibit B, Section 4.3.6. 5.
    b. Carry out Section 4.21 of the Recreation and Aesthetics Management Plan, Exhibit C of the SA, which includes developing and carrying out, in consultation with NMFS, an interpretation and education program, including sign postings to educate the fishing public about ESA-listed Chinook salmon in the Action Area.
8. The following terms and conditions implement reasonable and prudent measure 8:
    a. Prepare, in consultation with NMFS and consistent with the SA and

NMFS' Federal Power Act Section 18s/10j fishway prescription terms and conditions and recommendations (NMFS 2017), all design, monitoring and evaluation plans required by FERC or by this opinion to protect ESA-listed Chinook salmon and their critical habitat. All Chinook salmon fish handling and marking must be conducted by a qualified biologist, and all staff participating in fish and aquatic studies must have the necessary knowledge, skills, and abilities to ensure safe handling of Chinook salmon.

b. Prepare an annual report as required by SA Proposed License Article 15 that summarizes actions carried out during the previous calendar year. These reports will fulfill FERC's requirements for notifying NMFS when the amount or extent of incidental take is approached or exceeded (50 CFR §402.14(i)(1)(iv) and (i)(3)). Draft annual reports must be submitted to the appropriate management plan work groups by March 30th of the following calendar year, unless an alternative date is agreed to by the Fisheries Work Group or individual management plan work groups.
c. Carry out each study using best management practices for the collection, handling, and transfer of UWR Chinook salmon, as appropriate.
d. Take all appropriate steps to minimize the amount and duration of handling during Chinook salmon capture, marking, and release operations. The operations must maintain captured fish in water to the maximum extent possible during seining/netting, handling, and transfer for release to prevent and minimize stress
e. .Water quality conditions in the buckets or tanks used to hold, mark, and transport captured fish must be adequate to safely hold Chinook salmon. Aerators should be used to ensure circulation of clean, cold, well-oxygenated water.
f. As required by Article 27, Exhibit A, of the SA, within 2 days of observance, the applicant must report all observations of dead or injured salmon adults or juveniles coincident with carrying out the terms and conditions of the above measures (noting whenever possible the species of these individuals) to NMFS within 2 days of their observance, and include a concise description of the causative event (if known), and a description of any resultant corrective actions taken (if any) to reduce the likelihood of future mortalities or injuries. Reports of dead or injured salmon or steelhead should be sent to:

   Carmen Smith Hydro Project Staff Lead
   Oregon and Washington Coastal Office, Willamette Branch
   National Marine Fisheries Service

1201 NE Lloyd Blvd., Suite 1100
Portland, Oregon 97232
(503) 736-4466

APPENDIX G

License articles from the November 30, 2016 Amended and Restated Offer of Settlement, for the new license for Carmen-Smith Project No. 2242

Article 1. Consultation and Approval Process

This license, the license articles, the management plans required to be implemented under this license, and the management plans required to be developed and implemented under this license require the licensee to consult with certain parties and to obtain approval from various agencies before taking specific actions. In each such instance where the license or management plan calls for consultation or agency approval, the licensee shall follow the appropriate consultation process, the agency approval process, and the expedited consultation and agency approval process in paragraphs (a), (b) and (c) below. Where this license requires approval by Fish Agencies, Fish Agencies include the National Marine Fisheries Service, the United States Fish and Wildlife Service and the Oregon Department of Fish and Wildlife to the extent of each of their legal authorities.

(a) Consultation Process

The licensee shall, where this license or a management plan requires consultation before the licensee files with the Commission any study, operating or implementation plan, report, or facility design: (i) where specified in a management plan, consult with the work group during the development of the draft study, operating or implementation plan, report, or facility design, (ii) provide the required parties or work group members with a copy of the draft study, operating or implementation plan, report, or facility design and all data supporting that draft study, operating or implementation plan, report, or facility design, and (iii) allow a minimum of 30 days (which the licensee may reasonably extend upon request of a party or work group member if needed to facilitate consultation) for comment and recommendations, unless a different time period is established under the license or the management plan, or is directed by the Commission. During the consultation period, the licensee shall convene at least one meeting of the parties or work group members to discuss the draft study, operating or implementation plan, report, or facility design and reach consensus and if consensus cannot be reached proceed as described below. “Consensus” means that any decision must be acceptable to, or not opposed by, all of the parties or work group members. The licensee shall provide to the parties or work group members a final version of the study, operating or implementation plan, report, or facility design at the time that the licensee provides the final version of the document for approval pursuant to paragraph (b) below.

If a party or work group member does not respond to a request for consultation within 30 days, or as such period may have been extended, that party or work group member is not considered for purposes of obtaining consensus. If no party or work group member responds to the request for consultation within 30 days, or as such period may have been extended, the licensee may file the study, operating or implementation plan, report, or facility design with the Commission.

When consultation is required under this license or a management plan and consensus is not reached prior to the date the licensee is required to make a submission to the Commission, the licensee shall make the submission to the Commission according to the schedule provided in this license or the management plan, or as directed by Commission, and shall describe to the Commission how the licensee's submission accommodates any comments and recommendations of the parties or work group members. If the licensee's submission does not adopt a recommendation, the submission will include the licensee's reasons based on Project-specific information. The licensee shall provide the Commission with a copy of any comments and recommendations provided by the parties or work group members during the consultation. Any party or work group member may seek to resolve the consultation disagreement in accordance with the dispute resolution process in Section 7 of the Settlement Agreement. The parties or work group members may submit their own comments to the Commission. If applicable, once the dispute resolution process is completed, the licensee shall file the study, operating or implementation plan, report or facility design with the Commission.

(b) Agency Approval Process

Where this license or a management plan requires consultation with required parties or work group members and approval by one or more agencies, the licensee's submission of a study, operating or implementation plan, report, or facility design to the parties or work group members will also constitute submission for approval to such agency, if a party or work group member. When approval of an agency is required, the licensee shall provide to the agency a final version of the study, operating or implementation plan, report, or facility design on which approval is sought. Unless a different time period is established in this license or in a management plan or is directed by the Commission, the licensee shall, where approval by an agency is required, allow a minimum of 30 days for the agency to provide its approval before the licensee files any study, operating or implementation plan, report, or facility design with the Commission. If consensus is achieved by the parties or work group members pursuant to paragraph (a) above, such approval shall be deemed to have been obtained. Each agency who is a party or work group member with approval authority will document its approval in

writing to the licensee, which approval or approvals the licensee shall include in any filing with the Commission. Unless otherwise required by this license or a management plan or directed by the Commission, the licensee shall, if requested by an agency with approval authority, grant a 30-day extension for completion of consultation. Any agency or agencies will endeavor to make approval decisions during consultation whenever possible.

If an agency does not respond to a request for approval within 30 days, or as such period may have been extended, the obligation for obtaining approval from that agency will be deemed to have been satisfied for purposes of meeting the requirements of the license and the Settlement Agreement. If no agencies with approval authority respond to the request for approval within 30 days, or as such period may have been extended, the licensee may file the study, operating or implementation plan, report or facility design with the Commission.

When approval of an agency is required under this license or a management plan and approval has not been provided, the licensee or the agency may seek to resolve the lack of approval in accordance with the dispute resolution process in Section 7 of the Settlement Agreement. If the dispute has not been resolved after the dispute resolution process outlined in Sections 7.1, 7.1.1 and 7.1.2 of the Settlement Agreement or approval has not been provided prior to the date that the licensee is required to make a submission to the Commission, the licensee shall make the submission to the Commission according to the schedule provided in this license or the management plan, or as directed by the Commission, and shall describe to the Commission why approval was not provided. In such instance, the agency whose approval was required may submit its own explanation as to why approval was not provided. The licensee or the agency may seek to resolve the lack of approval in accordance with the dispute resolution process in Section 7 of the Settlement Agreement. If applicable, once the dispute resolution process is completed, the licensee shall file the study, operating or implementation plan, report or facility design with the Commission. If resolution was not achieved through dispute resolution, then the agency may submit its own explanation as to why resolution was not achieved.

(c) Expedited Consultation and Agency Approval Process

When consultation under paragraph (a) above or agency approval under paragraph (b) above is required and the time provided for consultation in paragraph (a) or approval in paragraph (b) is not reasonably available because the licensee must implement an action under this license or a management plan within a shorter period of time due to extraordinary circumstances beyond EWEB's reasonable control, the licensee shall provide notice to the required parties or work group members and the agencies with approval authority, as applicable, that: (1) an

expedited consultation and approval process will occur within the time available, (2) the location, date and time for the process, (3) the subject for the process, and (4) why the licensee must take action within the shorter period of time. The licensee shall complete as much of the consultation and approval process as can occur in the time reasonably available before the licensee must implement the action. If consultation is not completed or an approval is not obtained within the time available, the licensee may implement the action to the extent allowed by law after Commission approval if applicable, but the parties or work group members may still require that the consultation process in paragraph (a) above and the agency approval process in paragraph (b) above, as applicable, be completed after the licensee has implemented the action.

Article 2. Management Plan Work Groups

The licensee shall convene and administer the following work groups for implementation of applicable management plans required by this license: the Fisheries Work Group, Vegetation Management Plan Work Group, Wildlife Management Plan Work Group, Historic Properties Management Plan Work Group, Recreation and Aesthetics Management Plan Work Group, Roads, Waste Areas and Staging Areas Management Plan Work Group, Water Quality Management Plan Work Group, Transmission Line Management Plan Work Group, and Fire Response and Suppression Coordination Plan Work Group. Each work group will be established as provided in the applicable management plan or license article. The licensee may, with consensus (as defined in Article 1 above) of the applicable work group members, combine for a period of time one or more work groups into a larger work group. The licensee shall coordinate the work groups in cooperation with the applicable work group members.

Article 3. Instream Flows

The licensee shall implement Section 4.2 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. The licensee shall implement Section 4.2 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.2.

Article 4. Habitat Protection, Mitigation, and Enhancement- Upper Carmen Bypass Reach and Carmen Diversion Dam Fish Passage

The Licensee shall implement Section 4.3.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, with the exception of gravel augmentation in the vicinity of Transect No. 7 in the Upper Carmen Bypass Reach. The licensee shall implement Section 4.3.1 in

consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.3.1. The licensee shall initiate the upper Carmen Bypass Reach Protection, Mitigation and Enhancement Plan described in Section 4.3.1 no later than the first year after the Carmen Diversion Dam instream flow releases (required in Article 3) commence, unless a different timeframe is otherwise agreed to by the Fish Agencies and USDA Forest Service.

Article 5. Habitat Protection, Mitigation, and Enhancement- Carmen Diversion Reservoir

The Licensee shall implement Section 4.3.3 Carmen Diversion Reservoir Habitat Protection, Mitigation and Enhancement of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, within 3 years after license issuance. The Licensee shall implement Section 4.3.3 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.3.3.

Article 6. Habitat Protection, Mitigation, and Enhancement- Smith Reservoir

The Licensee shall implement Section 4.3.4 Smith Reservoir Habitat Protection, Mitigation and Enhancement of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, within 5 years after license issuance. The Licensee shall implement Section 4.3.4 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.3.4..

Article 7. Habitat Protection, Mitigation, and Enhancement- Smith Bypass Reach

The Licensee shall implement Section 4.3.5 Smith Bypass Reach of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, within 4 years after license issuance. The Licensee shall implement Section 4.3.5 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.3.5. The schedule will provide that the Licensee shall complete “Step 2” (Section 4.3.5.2) within 9 years after license issuance unless the Licensee implements any of the adaptive management provisions of Section 4.3.5 (e.g., Section 4.3.5.3).

Article 8. Habitat Protection, Mitigation, and Enhancement- Trail Bridge Reservoir

The Licensee shall implement Section 4.3.6 Trail Bridge Reservoir Habitat of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, within 5 years after license issuance. The Licensee shall implement Section 4.3.6 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.3.6.

Article 9. Habitat Protection, Mitigation, and Enhancement- Carmen-Smith Spawning Channel

The Licensee shall implement Section 4.3.7 Spawning Channel of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, within 5 years after license issuance. The Licensee shall implement Section 4.3.7 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.3.7.

Article 10. Trail Bridge Reservoir Fluctuations

The Licensee shall implement Section 4.4.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. The Licensee shall implement Section 4.4.1 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.4.1.

Article 11. Trail Bridge Reservoir Stranding Management

The Licensee shall implement Section 4.4.2 Trail Bridge Reservoir Stranding Management of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. The Licensee shall implement Section 4.4.2 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.4.2.

Article 12. Ramping- McKenzie River

The Licensee shall implement Section 4.4.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. The Licensee shall implement Section 4.4.3 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.4.3

Article 13. Large Woody Debris Management

The Licensee shall initiate implementation of Section 4.5 Large Woody Debris Management of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, within 6 months after license issuance. The Licensee shall implement Section 4.5 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.5.

Article 14. Water Quality Management

Within 12 months after issuance of the license, the Licensee shall submit a Water Quality Management Plan (WQMP) to the State of Oregon Department of Environmental Quality (ODEQ) for approval. The WQMP shall comply with the conditions presented in the Clean Water Act Section 401 Water Quality Certification for the Project. The Licensee shall include in the WQMP objectives, plan elements, performance standards, monitoring protocols, reporting schedules and procedures, adaptive management strategies, and an implementation schedule. Upon approval of the WQMP by ODEQ, the Licensee shall file the WQMP with the Commission for approval. The Licensee shall implement the WQMP upon Commission approval..

Article 15. Reporting Requirements

The licensee shall prepare an annual report regarding the licensee's implementation of each of the following resource management plans: Aquatics Management Plan, Vegetation Management Plan, Wildlife Management Plan, Historic Properties Management Plan, Recreation and Aesthetics Management Plan, Roads, Waste Areas, and Staging Areas Management Plan, Water Quality Management Plan, Transmission Line Management Plan, and Fire Response and Suppression Coordination Plan.

The licensee shall provide a draft of the annual report to the work group formed under each resource management plan for a 30-day comment period. At the request of a work group member, the licensee shall extend the comment period for an additional 30 days. The licensee shall submit a final report and response to comments on the draft report to the Commission within 90 days after the end of the comment period. The licensee shall include, at a minimum, the following information in the annual report for each resource management plan identified above:

(a) A summary of the actions implemented during the previous calendar year.
(b) A discussion of any substantial differences between the actions provided in

each resource management plan above and the actions that the licensee implemented, including explanations and any necessary agency approvals for any substantial differences.
(c) A summary of the actions the licensee plans to implement for the current calendar year.
(d) A discussion of any significant differences between the implementation schedule in each resource management plan and the schedule for the actions the licensee plans to implement in the current calendar year, including an explanation for any significant differences.
(e) Documentation of consultation with the respective resource management plan work group and approval by the agencies with approval authority regarding actions the licensee implemented under each resource management plan in the previous calendar year.
(f) Results of any monitoring that occurred during the previous calendar year, conclusions that the licensee draws from the monitoring results, and any changes to each resource management plan the licensee proposes based on the monitoring results. Prior to formally proposing any changes to the Commission, the licensee will consult with the appropriate work group and obtain the appropriate agency approval as required by that work plan.

Article 16. Construction Management Plan

Within 6 months after license issuance, the licensee, in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies, USDA Forest Service and Oregon Department of Environmental Quality in accordance with their statutory authorities, shall develop and file with the Commission for approval a construction management plan for construction activities at the Project pursuant to the new license. Following Commission approval, the licensee shall implement the plan.

The plan shall address the following:

a) Measures designed to minimize adverse impacts in turbidity and other water quality parameters in the reservoir and downstream of Trail Bridge Dam during reservoir drawdown and construction periods.
b) Maximum allowable increases and decreases in water surface levels in the McKenzie River downstream of Trail Bridge Dam during reservoir drawdown and construction periods.
c) Fish salvage, including relocation or deposit of salvaged fish, during reservoir drawdown and construction periods.
d) Interim fish passage measures for up and downstream native migrant fish at Trail Bridge Dam during reservoir drawdown and construction periods.
e) Interim fish passage measures for up and downstream native migrant fish at

Sweetwater Creek Culvert during reservoir drawdown and construction periods.
f) Routing of water for the entire Project during reservoir drawdown and construction periods, including bypass reaches.
g) Maximum allowable increases and decreases in water surface levels in Trail Bridge Reservoir during reservoir drawdown and construction periods.
h) Contingency actions to maintain adult native fish access to bypass reaches from Trail Bridge Reservoir if reservoir drawdown restricts access.
i) Contingency actions to address loss of native fish production during reservoir refill, if warranted.
j) Provision of interim flows of at least 30 cfs from Carmen Diversion Dam into upper Carmen Bypass Reach when reasonably practicable (e.g., not restricted by activities in the Carmen Reservoir and Upper Carmen Bypass Reach) prior to implementation of flows of 30 cubic feet per second under Section 4.2.1.1 of the Aquatics Management Plan.
k) Public or other authorized uses in and around construction sites and Project areas affected by construction, and related public safety and associated risks.
l) Authorization for use and occupancy of National Forest System lands outside of the Project Boundary needed during construction activities.
m) Public education and outreach regarding construction activities and alternative recreation access sites in coordination with the USDA Forest Service.

Article 17. Vegetation Management Plan

Upon License issuance, the Licensee shall implement the Vegetation Management Plan ("VMP"), Exhibit E to the November 2016 Amended and Restated Settlement Agreement. The Licensee shall implement the VMP in consultation with the Vegetation Work Group and subject to approval by the Governmental Parties and Tribes as provided in the VMP..

Article 18. Wildlife Management Plan

Upon License issuance, the Licensee shall implement the Wildlife Management Plan ("WMP"), Exhibit D to the November 2016 Amended and Restated Settlement Agreement. The Licensee shall implement the WMP in consultation with the Wildlife Work Group and subject to approval by the Governmental Parties and Tribes as provided in the WMP.

Article 19. Historic Properties Management Plan

The Licensee shall implement the "Programmatic Agreement (PA) between the Federal Energy Regulatory Commission and the State of Oregon, State Historic Preservation Officer for Managing Historic Properties That May Be Affected By A License Issuing to Eugene Water & Electric Board for the Continued Operation

of the Carmen-Smith Hydropower Project in Lane and Linn Counties Oregon," executed on May 5, 2010, including but not limited to the final Historic Properties Management Plan (HPMP) for the Project, Exhibit F of the Settlement Agreement. In the event the Programmatic Agreement is terminated, the Licensee shall implement the provisions of the final HPMP. The Commission reserves the authority to require changes to the HPMP at any time during the term of the license. If the Programmatic Agreement is terminated prior to Commission approval of the HPMP, the Licensee shall obtain approval from the Commission and the Oregon State Historic Preservation Officer before engaging in any ground-disturbing activities or taking any other action that may affect any historic properties within the Project's area of potential effect.

Article 20. Recreation and Aesthetics Management Plan

Upon License issuance, the Licensee shall implement the Recreation and Aesthetics Management Plan ("RAMP"), Exhibit C to the November 2016 Amended and Restated Settlement Agreement, except Sections 4.1 (Ice Cap Creek Campground) and 4.18.2 (Dispersed sites in Lower Carmen Bypass). The Licensee shall implement the RAMP in consultation with the Recreation and Aesthetics Work Group and subject to approval by the Governmental Parties and Tribes as provided in the RAMP.

Article 21. Roads, Waste Areas, and Staging Areas Management Plan

Upon License issuance, the Licensee shall implement the Roads, Waste Areas, and Staging Areas Management Plan ("RWMP"), Exhibit G to the November 2016 Amended and Restated Settlement Agreement**.** The licensee shall implement the RWMP in consultation with the Roads, Waste Areas, and Staging Areas Management Plan Work Group and subject to approval by the Governmental Parties and Tribes as provided in the RWMP.

Article 22. Transmission Lines

Within one year after License issuance, the licensee shall develop a Transmission Line Management Plan (Plan) in consultation with the Parties to the settlement, and subject to approval by the USDA Forest Service. The plan shall incorporate and be consistent with land management requirements for National Forest System lands described in the Vegetation Management Plan and Wildlife Management Plan required by License Article 17 and 18 respectively. Within one year after issuance of the License, the licensee shall file the Plan with the Commission for approval. Following Commission approval, the licensee shall implement the Plan. The licensee shall describe in the Plan the licensee's responsibilities for the management of the Project's 115 kV transmission line for the term of the License.

The Plan shall also provide for the relocation of the Deer Creek valley portion of the 115 kV transmission line out of the Deer Creek riparian area and towards the southwest, adjacent to the existing Deer Creek road, Forest Road Number 2654000, by no later than three years after License issuance.

Article 23. Fire Response and Suppression Coordination Plan

(a) The licensee shall develop a Fire Response and Suppression Coordination Plan (Plan) that identifies the licensee's responsibilities for the prevention, response and suppression of fires within the Project boundary, in consultation with the USDA Forest Service and appropriate State of Oregon and local fire agencies, and subject to approval by the USDA Forest Service. Within one year after issuance of the license, the licensee shall file the Plan with the Commission for approval. Following Commission approval, the licensee shall implement the Plan.

(b) The licensee shall include and implement the following elements in the Plan:

(1) The periodic assessment and management of fuels associated with the Project in order to reduce fire risk within the Project boundary and area of potential effect. The periodic assessment and management will include the following components:

(i) a defensible space plan for Project structures, including standards for Project structures, and a description of the licensee's responsibilities under the Community Wildfire Protection Plan for Lane County. Annually, the licensee, in consultation with the USDA Forest Service, will review and revise the defensible space plan to correct any identified discrepancies.

(ii) a fuels assessment for Project recreation sites and the transmission line. Annually, the licensee, in consultation with the USDA Forest Service, shall review and revise the fuels assessment to correct any identified discrepancies. The licensee shall comply with USDA Forest Service Standards and Guides (FW-212) on fuel loading and updated burn pile management requirements.

(iii) a description of fuels management techniques to be applied to the waste areas identified in Section 1.2.2 of the Roads, Waste Areas, and Staging Areas Management Plan, Exhibit G to the November 2016 Amended and Restated Settlement Agreement.

(2) Develop measures the licensee shall implement to prevent fire starts from Project operation and maintenance. The licensee shall comply with the requirements identified in the Oregon Department of Forestry (ODF) Industrial Fire Precaution Levels (IFPL), USDA Forest Service fire season requirements (from April 1 through October 31), and ORS Chapter 477 on fire tools and equipment. Describe fire adjective classes and public use restrictions.

(3) Identify the fire equipment and infrastructure that the licensee shall possess and maintain to assess, respond to, and suppress fires consistent with ODF and National Forest Protection Act requirements, including:

(i) where ODF requirements are in effect as well as National Forest Protection Act requirements are in effect in the power plants, shops and structures;

(ii) schedules for obtaining and installing needed equipment, and maintaining, testing and servicing such equipment; and

(iii) fire equipment and infrastructure responsibility lists that the licensee shall review on an annual basis, and make upgrades or adjustments as necessary.

(4) Describe the proper notification and response by the licensee when a fire start occurs within the Project boundary or from Project-associated activities, including development, maintenance and implementation of a "Fire Response Action Plan" for the Project, which will

(i) identify and implement communication and coordination protocols for license Project staff, including the licensee dispatch, in the event of a fire start or on going fire response and suppression activities in the Project area.

(ii) identify first responder responsibilities and protocols associated with a fire, and describe a first responder training program and schedule for implementing the training program for licensee Project employees; and

(iii) describe protocols for the licensee's participation in the annual McKenzie River Ranger District Wildfire Situation Analysis (WFSA) exercise when Project facilities are included within the WFSA area.

(iv) The licensee shall describe in the Fire Response Action Plan required in subsection (b)(4) above the specific tasks, monitoring, contingency actions, and maintenance activities the licensee shall undertake to meet Plan objectives, including:

(1') Annual compliance inspection of licensee equipment used within the Project boundary by the USDA Forest Service and the corrective actions and timelines needed to correct deficiencies noted in the annual inspection.

(2') Inspection of licensee contractors by the USDA Forest Service prior to beginning Project-related work on NFS lands. Deficiencies must be corrected before Project work can begin.

(3') Inspection by the licensee for compliance with NFPA requirements at least every five years.

(4') Review of the Fire Response Action Plan annually and updating the Plan as necessary, including acquisition of new equipment, changes to the IFPL requirements, ORS Chapter 477 requirements and USDA Forest Service fire season requirements.

Changes to the Plan should be made as soon as reasonably possible. EWEB shall continue to implement the existing agreed-to fire prevention measures until the new Plan is approved and/or subsequently revised.(5') Annually review communication and coordination protocols focusing on points of contact and contact information in coordination with the USDA Forest Service. Correct or update communication and coordination protocols within 14 days of a noted error or deficiency and within 30 days of any change of personnel affecting communication and coordination protocols. The licensee, in coordination with the USDA Forest Service, will notify the other parties within the communication and coordination protocols within 30 days of any change of personnel that may require modification of communication and coordination protocols.

(c) The licensee shall provide a brief annual report on implementation, monitoring and any maintenance or contingency actions performed during the previous year. The licensee shall meet annually with the USDA Forest Service to discuss activity occurring under this Plan during the previous year and to discuss the upcoming fire season. The annual meeting will be timed to coincide with the annual fire inspections of Project facilities and equipment. The licensee shall provide updated copies of the Fire Response Action Plan to the USDA Forest Service, as necessary or upon request by the USDA Forest Service.

Article 24. Implementation on NFS Lands

(a) **Authorization for Occupation and Use of NFS Lands.** Within one year after license issuance and before initiating any habitat or ground-disturbing activities on National Forest System (NFS) lands, the Licensee shall obtain from the USDA Forest Service and file with the Commission an intergovernmental agreement (IGA) for the occupancy and use of NFS lands that are within the Project Boundary established by the license.

If long term occupancy and use of NFS lands are required for Project-related purposes and such occupancy and use are not authorized by such lands being included within the Project Boundary established by the license, the Licensee shall obtain a special-use authorization for occupancy and use of such NFS lands from the USDA Forest Service. Before conducting any habitat or ground-disturbing activities on such NFS lands, the Licensee shall obtain from the USDA Forest Service and file with the Commission a special-use authorization for occupancy and use of such NFS lands. If required by the USDA Forest Service, the Licensee shall amend the IGA to include such NFS lands.

The Licensee shall comply with the terms and conditions of any USDA Forest

Service special-use authorization, and with the terms and conditions of the IGA.

The Licensee shall apply for and obtain special use authorization from the USDA Forest Service to occupy and use any additional NFS lands necessary for the Project and not covered under the IGA and special-use authorization.

(b) **Approval of Changes on NFS Lands after License Issuance**. The licensee shall consult with and receive written approval from the USDA Forest Service to the extent required by and as provided in this license, and any exhibits approved under the license prior to making changes in the Project features or facilities on NFS lands, or in the uses of Project land and waters on NFS lands, or any departure from the requirements of any approved exhibits for Project facilities located on NFS lands filed by the licensee with the Commission. The licensee shall also consult with and receive written approval from the USDA Forest Service consistent with the consultation process in Article 1 for any application to amend the license to authorize a change in the Project features or facilities on NFS lands.

Following receipt of such approval from the USDA Forest Service for a proposed license amendment authorizing a change in a Project feature or facility on NFS lands, and at least 60 days prior to initiating any such changes, the licensee shall include in the license amendment application a description of the changes, the reasons for the changes, and documentation of the approval of the USDA Forest Service for such changes. The licensee shall file an exact copy of the license amendment application with the USDA Forest Service at the time it is filed with the Commission.

(c) **Site-Specific Plans for Unanticipated Project Operations and Maintenance**. The licensee shall not commence implementation of habitat or ground-disturbing activities on NFS lands not otherwise required or authorized under this license, any exhibits approved under the license, the IGA or any special use authorization until the licensee has submitted, and the USDA Forest Service has approved, a site-specific project plan and issued a notice to proceed.

The licensee shall include in a site-specific plan:

(1) A map depicting the location of the proposed activity and GPS coordinates.

(2) A description of the USDA Forest Service land management area designation for the location of the proposed activity and applicable standards and guidelines.

(3) A description of alternative locations, designs and mitigation measures considered, including erosion control and implementation and effectiveness monitoring designed to meet applicable standards and guidelines.

(4) Draft biological evaluations or assessments including survey data as

required by regulations applicable to ground or habitat-disturbing activities on NFS lands in existence at the time the plan is prepared.

(5) An environmental analysis of the proposed action consistent with USDA Forest Service National Environmental Policy Act (NEPA) requirements in existence at the time the plan is prepared for Commission-licensed projects on NFS lands.

Article 25. Inspection of Project

The licensee shall permit the Parties to the settlement, at any reasonable time, access to, through, and across Project lands and works for the purpose of inspecting Project facilities and Project records pertaining to the operation of the Project and implementation of the Settlement Agreement and the License. The licensee shall allow such inspections only after the Party requesting the inspection provides the licensee reasonable notice of such inspections and agrees to follow the licensee's applicable safety and security procedures when engaged in such inspections.

Article 26. Emergency or Special Conditions

(a) The licensee shall notify the local District Office of the Oregon Department of Fish and Wildlife of any unanticipated or emergency situation resulting from Project operations where fish, bald eagle, northern spotted owl, peregrine falcon, or harlequin duck are killed or injured as soon as reasonably possible but not later than 24 hours after becoming aware of such death or injury. Within 2 days after becoming aware of such death or injury, the licensee shall send a report of dead or injured fish, bald eagle, northern spotted owl, peregrine falcon, or harlequin duck to the local District Office of the Oregon Department of Fish and Wildlife.

(b) Within 2 days of observance, the licensee shall send reports of dead or injured Chinook salmon to: Carmen-Smith Hydro Project Staff Lead, Hydro Power Division, National Marine Fisheries Service, 1201 NE Lloyd Blvd., Suite 1100, Portland, Oregon 97232. The licensee shall include in each report a concise description of the causative event (if known), and a description of any resultant corrective actions taken (if any) to reduce the likelihood of future mortalities or injuries.

(c) The licensee shall notify the FWS within 3 working days upon locating a dead, injured, or sick endangered or threatened species specimen. They must make initial notification at the nearest FWS Law Enforcement Office, and/or to the Energy Coordinator at the FWS Oregon Fish and Wildlife Office at (503) 231-6179. Notification must include the date, time, precise location of the injured animal or carcass, and any other pertinent information. Care should be taken in the handling of sick or injured specimens to preserve biological materials in the

best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered or threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to ensure that evidence associated with the specimen is not unnecessarily disturbed. Reports of incidental injury or killing must include the date, time, precise location of the injured animal or carcass, and any other pertinent information such as cause of death or injury. In regards to bull trout, all incidental mortalities shall be preserved in a fashion to best provide maximum scientific information (otoliths, scales, genetic samples, general fisheries statistics, etc.). Any specimen killed shall be kept whole and put on ice or frozen, and a small sample of tissue (fin clip approximately 1 square centimeter) shall be preserved in a vial of 95 percent ethanol for genetic analysis.

Article 27. Reservation of Authority: Fishways

Pursuant to Section 18 of the Federal Power Act, authority is reserved to the Commission to require the licensee to construct, operate, and maintain, or provide for the construction, operation, and maintenance of such fishways as may be prescribed by either the Secretary of the Interior or the Secretary of Commerce.

Article 28. Fish Passage

Consistent with these license articles, the Licensee shall implement Section 4.1 Fish Passage of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement.

Article 29. Trap and Haul Fish Passage At Trail Bridge Dam

(a) Upstream Fish Passage Facilities and Standards

The Licensee shall design, construct, operate, and maintain a trap and haul facility at Trail Bridge Dam to provide upstream fish passage, as described in Section 4.1.2, Sections 1) through 6) of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. The Licensee shall design the trap and haul facility in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service. The trap and haul facility shall be designed consistent with EWEB Technical Memorandum to NMFS: Trail Bridge Trap and Haul Design Criteria Summary dated June 28, 2016, and according to the NMFS criteria document entitled Anadromous Salmonid Passage Facility Design Anadromous Salmonid Passage Facility Design developed by National Marine Fisheries Service, Northwest Region (NMFS 2011) or current versions thereof for the purpose of supporting safe, timely, and effective upstream passage of fish, and to achieve upstream fish passage standards described in Table

1:

Table 1. Numeric standard for upstream passage of adult Chinook salmon and adult bull trout, following construction of the Trail Bridge Trap and Haul facility.

Species	Standard
Chinook	<1% adult mortality per year, including delay induced mortality
Bull trout	No more than 2 adult fish per year or 1% (whichever is higher) mortality; 5% injury per year

(1) Within 6 months after License issuance, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule for design and construction of the Trail Bridge Dam trap and haul facilities. Subject to Commission approval, within 3 years after the later of License issuance or final resolution of any administrative or judicial petition or appeals, or other formal agency adjudication relating to Section 4.1.2 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall complete construction of the Trail Bridge Dam trap and haul facilities**.**

(2) Within 6 months after License issuance, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule for the demolition of the existing tailrace barrier below Trail Bridge Dam, consistent with Section 4.1.2, Paragraph 6) of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. Subject to Commission approval, within 3 years after the later of License issuance or final resolution of any administrative or judicial petition or appeals, or other formal agency adjudication relating to this Section 4.1.2., the Licensee shall complete demolition of the existing tailrace barrier below Trail Bridge Dam, providing fish access to the trap and haul facility for upstream fish passage.

(b) Trail Bridge Upstream Passage Facilities Operations and Maintenance

No later than 6 months prior to planned completion of the trap and haul facilities, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, prepare and file with the Commission a Preliminary Operations and Maintenance Plan for Trap and Haul (POMPTH), consistent with Section 4.1.2, Paragraph 3) of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to provide an initial guide for the operation of the trap and

haul facilities.

(c) Upstream Fish Passage Evaluation Program (UPEP)

The Licensee shall implement Section 4.1.6 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, which provides for three distinct plans to be implemented consecutively and that are designed to build upon one another in succession to provide monitoring of upstream fish migration through the Project for the duration of the License. The Licensee shall implement Section 4.1.6 in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service as provided in Section 4.1.6. The three stages of the Program are as follows:

Stage 1 - Upstream Passage Observation and Evaluation Plan (UPOEP)

(1) Six months prior to planned completion of the Trail Bridge Dam trap and haul facilities, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission, the Upstream Passage Observation and Evaluation Plan (UPOEP), consistent with Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to conduct hydraulic and biological monitoring at the Project.

(2) Within 6 months after Licensee's completion of the implementation of the UPOEP, Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare a report documenting the results of the evaluation and the data collected. Licensee shall file the report with the Commission along with comments by members of the FWG and describing how EWEB addressed or responded to the comments.

(3) If Licensee's implementation of the UPOEP verifies that the Project facilities function as designed, where applicable, and injury and mortality at the Project facilities are within the passage standards provided in Section (a) of this License Article 29 and Sections 4.1.1.1 of the November 2016 Amended and Restated Settlement Agreement, then no further hydraulic or biological evaluation by EWEB is required, except as provided in the Upstream Passage Ongoing Monitoring Plan (UPOMP).

(4) Within 6 months of the Commission approval of the report documenting results of the Upstream Passage Observation and Evaluation Plan (UPOEP) provided in this License Article 29 and Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall, in consultation with the FWG and

subject to approval by the Fish Agencies and the USDA Forest Service, prepare and file with the Commission a Revised Operations and Maintenance Plan for Trap and Haul (ROMPTH) for the Trail Bridge trap and haul facility. Upon Commission approval, the Licensee shall implement the ROMPTH.

(5) Five years after commissioning of the trap and haul facilities, EWEB may, in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, file an amendment to the ROMPTH with the Commission to modify frequency and/or timing of trap operations, if warranted.

Stage 2 - Upstream Passage Adaptive Management Plan (UPAMP)

(6) If the results of the UPOEP as described in the completion report submitted to the Commission indicate the trap and haul facility induced mortality rate of adult Chinook salmon or bull trout exceeds the fish passage standards of Table 1 of this License Article 29, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule, called the UPAMP, consistent with Section 4.1.6.2 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to address causes of injury or mortality. Upon Commission approval, the Licensee shall implement the UPAMP to modify the trap and haul facilities. The design modifications will address the causes in the most expeditious way practicable.

(7) Upon completion of the modifications, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, implement a modified version of the UPOEP to evaluate that the modifications have achieved the fish passage standards in Table 1 of this License Article 29. The cycle of evaluation and modification will repeat for no more than 10 upstream migration seasons.

(8) At the end of 10 upstream migration seasons of evaluation and modifications, if facility induced mortality rates of adult Chinook salmon or bull trout continue to exceed the fish passage standards provided in Table 1 of this License Article 29, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule for the design and construction of a volitional fish ladder or other agreed upon remedy including Project decommissioning. Within 12 months after Commission approval, the Licensee shall, in consultation with and subject to the approval of Fish Agencies and USDA Forest Service, complete design of a volitional fish ladder, decommissioning, or other approved remedy, and shall begin construction (or deconstruction) as soon as possible after completion and approval of design. If a volitional fish ladder or other remedy is

constructed, the Licensee shall operate and maintain the facility throughout the term of the License. In the interim, the Licensee will continue to operate the trap and haul facility or other approved fish passage measures. If construction of the volitional ladder or other remedy interferes with operation of fish passage, the Licensee will implement other temporary means of passage.

Stage 3 - Upstream Passage Ongoing Monitoring Plan (UPOMP)

(9) Within 6 months of the Commission approval of the report documenting the UPOEP results, the Licensee shall , in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission, the Upstream Passage Ongoing Monitoring Plan (UPOMP), consistent with Section 4.1.6.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to describe the Licensee's ongoing upstream passage monitoring efforts at the Project. Upon Commission approval, the Licensee shall implement the UPOMP.

(10) The UPOMP will describe how the Licensee shall monitor Project fish passage facilities, and report its findings to the FWG on an annual basis. The Licensee shall prepare the annual report in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service. The monitoring report is anticipated to include summaries of video monitoring and visual observations, as well as documentation of the number of each species, dates fish were observed in the trap, numbers of fish transported and released upstream, and condition of all observed fish. The report will also include summaries of all analyses, if any, conducted on successful fish passage, delay, injury, and mortality in relation to upstream fish passage facility operations, project operations (e.g. shut downs), and environmental conditions (e.g., instream flow).

(11) If, in the course of annual monitoring of operations of the Trail Bridge trap and haul facilities, mortality or serious injury fish passage standards provided in this License Article 29 and Section 4.1.1.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement are exceeded, the Licensee will notify the FWG and in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, develop a plan to implement corrective measures similar to the UPAMP as described above.

(12) After 10 annual UPOMP reports, the Licensee, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, may consider changing the reporting interval to less frequently than annually.

Article 30. Upstream Passage at the Carmen-Smith Spawning Channel

(a) In consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, the Licensee shall design, construct, operate and maintain upstream fish passage with steps no higher than 6 inches at the Carmen-Smith Spawning Channel entrance consistent with AMP-90% Design Submittal Volume 3, dated December 2012 (CH2MHill 2012) and the Anadromous Salmonid Passage Facility Design developed by National Marine Fisheries Service, Northwest Region (NMFS 2011) or current version thereof at the time of design, and a facility for upstream passage out of the channel at the spawning channel water control structure for the purpose of supporting safe, timely and effective upstream passage of fish at the spawning channel. The Licensee shall design the upstream passage spawning channel modifications in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service. Within one year after New License issuance, the Licensee shall prepare, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, and file with the Commission, a plan and schedule for design and construction of the spawning channel fish passage facilities. Subject to Commission approval, within four years after New License issuance, the Licensee shall complete construction of the spawning channel fish passage facilities.

(b) Within 12 months after the Licensee's completion of the evaluation described in the Upstream Passage Evaluation Program (UPEP) provided in License Article 29 and Section 4.1.6of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a Spawning Channel Operations and Maintenance Plan (SCOMP) to provide for operation of the spawning channel fish passage facilities. The Licensee shall base the SCOMP on the Anadromous Salmonid Passage Facility Design developed by National Marine Fisheries Service, Northwest Region (NMFS 2011) or current version thereof at the time of design, and the results of the Licensee's implementation of the Upstream Passage Observation and Evaluation Plan (UPOEP) described in Section 4.1.6 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. Upon Commission approval, the Licensee shall implement the SCOMP.

Article 32. Fish Protection at Carmen Power Plant

The Licensee, in consultation with the FWG and subject to the approval of the fish Agencies and USDA Forest Service, shall carry out a Carmen Power Plant biological evaluation, as described in Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement. The evaluation will be used to construct, if needed, an adaptive

approach for fish passage at the Carmen Power Plant tailrace by monitoring fish after adult spring Chinook salmon and bull trout are hauled from the Trail Bridge Dam trap and haul facilities and released in Trail Bridge Reservoir above Trail Bridge Dam, to determine if there is significant delay, substantial mortality, or serious injury to Chinook salmon and bull trout associated with upstream passage past the Carmen Power Plant tailrace as a result of its facilities or operations.

The standard for mortality and injury are considered to be exceeded if monitoring surveys document Carmen Power Plant facilities and operations result in three or more adult fish (any combination of bull trout or Chinook salmon) observed dead or seriously injured in a calendar year as provided in Section 4.1.1.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement.

If, based on the results from the Licensee's implementation of the Carmen Power Plant biological evaluation as described in Section 4.1.6.1 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the standard for significant delay or the standard for substantial mortality and serious injury is exceeded, the Licensee shall, in consultation with the Fisheries Work Group and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a list of appropriate modifications or additions to Project facilities or operations designed to address identified substantial delay, significant mortality or serious injury. Upon Commission approval, Licensee shall implement the modifications or additions to Project facilities or operations.

Article 33. Downstream Passage at Trail Bridge Dam

(a) Downstream Fish Passage Facilities and Standards

The Licensee shall design, construct, operate, and maintain the Trail Bridge Dam spillway, gate and hoist system, and attraction water supply (AWS) for the purpose of supporting year round safe, timely, and effective downstream passage of fish consistent with the NMFS criteria document entitled Anadromous Salmonid Passage Facility Design developed by National Marine Fisheries Service, Northwest Region (NMFS 2011) or current version thereof at the time of design, in order to achieve downstream fish passage standards, regardless of passage route, described in Table 2. The Licensee shall design the spillway, gate and hoist system, and AWS in consultation with the FWG and subject to approval by the Fish Agencies and USDA ForestService.

Table 2. Numeric standard for downstream passage for Chinook salmon and bull trout, following construction of the Trail Bridge Trap and Haul facility.

Species	Affected Life Stages	Standard
Chinook	fry and juveniles	2% mortality, 5% injury, per year
	Adult	No more than 2 fish per year or 2% mortality (whichever is higher); 5% injury, per year
Bull trout	fry and juveniles and subadults	2% mortality, 5% injury, per year
	Adult	No more than 2 fish per year or 2% mortality (whichever is higher); 5% injury, per year

(1) Within 6 months after License issuance, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan, schedule, and design for construction of modifications to the spillway, gate and hoist system, and for ceasing operation of the Trail Bridge power plant for the purposes of power generation. Subject to Commission approval, within 3 years after the later of License issuance or final resolution of any administrative or judicial petition or appeals, or other formal agency adjudication relating to Section 4.1.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall complete modifications to the spillway, gate and hoist system.

Upon completion of the upstream and downstream fish passage facilities, Licensee shall cease operation of the Trail Bridge power plant, except for purposes of maintaining the Trail Bridge power plant in safe working order, as provided in Section 4.1.3.2. of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement.

(2) The Licensee shall include (but not be limited to) in the design of the spillway, and gate and hoist system facilities the following:

i. Modification of the spillway gate to allow a 12-inch minimum opening to accommodate adult bull trout and adult Chinook passage,

ii. Modifications of the “flip bucket” and other features to promote laminar flow and reduce turbulence;

iii. Modifications to eliminate, to the extent possible the need to salvage adult fish from the flip bucket;

iv. Installation of gate hoist mechanism to allow fine control of gate openings and spillway flows to meet ramping criteria; and

v. Modification to tailrace configuration, if needed to ensure safe landing and discharge conditions for fish as they exit the spillway

(b) Trail Bridge Downstream Passage Facilities Operations and Maintenance

No later than 6 months prior to planned completion of modifications to the Trail Bridge Dam spillway, gate and hoist system, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, prepare and file with the Commission a Preliminary Operations and Maintenance Plan for Spillway (POMPS) for the modified spillway, and gate hoist system and Trail Bridge power plant. Upon Commission approval, the Licensee shall implement the POMPS.

(1) Within 12 months after completion of the evaluation described in the Downstream Passage Evaluation Program (DPEP) provided in this License Article 33 and Section 4.1.7 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service, prepare and file with the Commission, a Revised Operations and Maintenance Plan for Spillway (ROMPS). Upon Commission approval, the Licensee shall implement the ROMPS.

(2) To minimize fish entrainment, the Licensee will limit operation of the Trail Bridge power plant turbine as provided in Section 4.1.3.2 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, including the following situations:

i. during the Trail Bridge Spillway maintenance and construction periods after consultation with the FWG and subject to approval by the Fish Agencies and the USDA Forest Service;

ii. to minimize use of the existing energy dissipation valve; or

iii. as may be necessary to meet FERC requirements, after prompt notification to the Fish Agencies.

(c) Downstream Fish Passage Evaluation Plan (DPEP)

(1) No later than 6 months prior to the Licensee's planned completion of modifications to the spillway, gate and hoist system as provided in this License Article 33 and Section 4.1.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a Downstream Passage Evaluation Plan (DPEP), Section 4.1.7 of Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, to conduct hydraulic and biological monitoring of the spillway and the trap and haul AWS intake. The DPEP shall include an implementation schedule. Subject to

Commission approval, the Licensee shall implement the DPEP, after completion of the spillway, gate and hoist modifications.

(2) Within 6 months after completion of the DPEP, the Licensee shall in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a DPEP report documenting the results of the monitoring and describing any findings that require implementation of the next phase, the Downstream Adaptive Management Plan (DAMP). The cycle of DPEP to DAMP has the potential to repeat, as described in Section 4.1.7.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement.

(3) The DPEP will include the Downstream Adaptive Management Plan (DAMP), to evaluate and modify downstream fish passage at Trail Bridge Dam, as described in Section 4.1.7.3 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement.

(4) If the results of the DPEP, as determined by the Licensee in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, indicate that the spillway passage route does not exceed fish passage standards provided in Section 4.1.1.2 of the Aquatics Management Plan, Exhibit B to the November 2016 Amended and Restated Settlement Agreement, the Licensee's obligation for continued evaluation of the spillway using the DPEP will be fulfilled. "Exceeding fish passage standards" will be defined as study result estimating greater than the 2% mortality standard. However, if the estimate of mortality is greater than the 2% mortality standard, but within the margin of error, the Licensee in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service may determine that the standard has been met. Alternatively, the Licensee, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service may determine that additional evaluations or modified spillway operations are needed to achieve the standard, or to improve study methods or effort to reduce error around the estimate.

(5) If fish passage standards are exceeded (as defined in this License Article 33, paragraph (c)(4) above), the Licensee shall prepare, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, and file with the Commission, a report describing the causes of injury and mortality, and a plan, designs, and schedule for implementing spillway measures to address the causes of injury or mortality from the spillway passage route. Upon Commission approval, the Licensee shall implement the plan to modify the spillway passage route. The design modifications will strive to remedy the causes in the most expeditious way practicable.

(6) The cycle of evaluation and modification described in the DPEP and in this License Article 33, paragraphs (c)(4) and (c)(5) above will continue until the standards in License Article 33 paragraphs (c)(4) and (c)(5) above are not exceeded, but will not repeat for more than 10 years, cumulatively from the completion of the initial modifications of the downstream fish passage facilities (spillway, gate and hoist system, and AWS).

(7) At the end of the 10 year evaluation period described in this License Article 33 paragraph (c)(6) above, if injury and mortality rates are within the fish passage standards as provided in this License Article 33, paragraphs (c)(4) and (c)(5), the passage standard will be considered to have been met. If the passage standard is not met, the Licensee shall, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission a plan and schedule for implementation of one of the following actions: construction of a new outflow structure designed to efficiently and safely passage fish; dam removal; or other measures. Upon Commission approval, the Licensee shall implement the plan.

(8) The results of assessing potential entrainment at the trap and haul, and AWS intake described in this License Article 33 above will be considered in the DAMP.

i. If qualitative and quantitative assessments do not show a substantial risk of entrainment at the AWS intake as determined by the Licensee, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, the Licensee's obligation for continued evaluation of the AWS intake using the DPEP will be fulfilled.

ii. If qualitative assessments of fish behavior in the vicinity of the AWS intake indicate that entrainment is a substantial risk, or if quantitative assessments indicate that substantial (e.g., >1% of downstream migrants of either Chinook or bulltrout) numbers of fish are observed to be entrained in the AWS as determined by the Licensee in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, the Licensee will develop a plan and schedule to take corrective actions, in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service. The Licensee shall file the plan with the Commission and, upon Commission approval, implement the plan.

(9) After meeting fish passage standards provided in this License Article 33 Table 2 and paragraphs (c)(4) and (c)(5) during the 10 year evaluation cycle described in paragraph (c)(6) above, the Licensee shall monitor Project fish passage facilities, and in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, prepare and file with the Commission an

annual report. The annual monitoring report is anticipated to include summaries of visual observations of fish, copies of spillway and gate inspection reports, how inspection findings will be addressed if needed, and documentation of the number of each species, age classes, and condition of all observed fish. The report will also include summaries of all analysis, if any, conducted on downstream fish passage, injury and mortality, in relation to fish passage facility operations, project operations (e.g. shut downs), and environmental conditions (e.g., instream flow).

(10) If in the course of annual monitoring of operations of the Trail Bridge spillway, gate and hoist system facilities after the initial 10 year evaluation period described in this License Article 33 paragraph (c)(6) above, and implementation of an action implemented pursuant to paragraph (c)(7) above, mortality or serious injury exceeds the standards provided in this License Article 33 Table 2 and paragraphs (c)(4) and (c)(5), the Licensee in consultation with the FWG and subject to approval by the Fish Agencies and USDA Forest Service, will develop and file with the Commission a plan to implement corrective measures consistent with the then existing facilities

Article 34. Reservation of Authority

The licensee shall implement, upon order of the Commission, such additional conditions as may be identified by the Secretary of Agriculture, pursuant to the authority provided in Section 4(e) of the Federal Power Act, as necessary for the adequate protection and utilization of the public land reservations under the authority of the USDA Forest Service.