TACOMA POWER
TACOMA PUBLIC UTILITIES

3628 South 35th Street
Tacoma, Washington 98409-3192

TACOMA PUBLIC UTILITIES

July 27, 2018 **VIA EMAIL**

Shannon Ames
329 Massachusetts Avenue, Suite 2
Lexington, MA 02420

SUBJECT: Nisqually Hydroelectric Project LIHI Certificate No. 8
Application for Recertification

Dear Ms. Ames:

Thank you for the opportunity to recertify the Nisqually Hydroelectric Project as a low impact hydropower facility.

Our Stage 1 review fee has already been submitted and processed. We have enclosed the following application materials necessary for recertification:

- Application
- Sworn statement

We look forward to hearing of the outcome of your Stage 1 review of our application. Please contact Mr. Bret Forrester, Wildlife and Lands Manager, at (253) 502-8782 or via e-mail at bret.forrester@cityoftacoma.org if you have further questions or comments regarding this application.

Sincerely,

Keith Underwood
Natural Resources Manager

PH:mcp Nisqually Hydroelectric Project Recertification Application 072718

Enclosure

City of Tacoma
Department of Public Utilities

Light Division

Nisqually Hydroelectric Project
LIHI Certificate No. 8
FERC No. 1862

Low Impact Hydropower Institute
Recertification Application

July 2018

TACOMA POWER
TACOMA PUBLIC UTILITIES

Contents

1.0 Facility Description

The key features of the Nisqually Hydroelectric Project (Project) (LIHI #8) are described in Section 1. As the Project is currently certified by Low Impact Hydropower Institute (LIHI) and seeking recertification, a description of the Project can be found on the LIHI website: https://lowimpacthydro.org/lihi-certificate-8-nisqually-project-washington-ferc-1862/
The Federal Energy Regulatory (FERC) description of the Project can be found at: https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14529131

Table 1.0. Facility Description Information for the Nisqually Hydroelectric Project.

Information Type	***Description***	***Response***
Name of the Facility	Facility name	Nisqually Hydroelectric Project, FERC No. 1862
Location	USGS river name	Nisqually River
	River basin name	Nisqually River Basin
	Nearest town, county, and state	Eatonville, Pierce County, Washington State
	River mile of dam Geographic latitude and longitude	LaGrande Dam: River mile 42.5 N 46.822778; W -122.302222 Alder Dam: River mile 44.2 N 46.801667; W -122.309167
Facility Owner	Application contact names	Chris Mattson, Generation Manager Keith Underwood, Natural Resources Manager Bret Forrester, Wildlife and Lands Manager
	Owner/Operator	City of Tacoma, Department of Public Utilities, Light Division, dba Tacoma Power
	Representative in LIHI certification	Keith Underwood, Natural Resources Manager
Regulatory Status	FERC Project Number, issuance and expiration dates	FERC No. 1862 Issuance date: March 7, 1997 Expiration date: March 1, 2037 Comprised of two facilities operated in conjunction: Alder Dam (upstream) and LaGrande Dam (downstream)
	FERC license type	Major Project
	Water Quality Certificate	401 Water Quality Certification issued for the Nisqually Hydroelectric Project on April 30, 1992 by Washington State Department of Ecology

	Hyperlinks to key electronic records on FERC e-library website (e.g., most recent Commission Orders, WQC, ESA documents, etc.)	Nisqually License https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=10775137 Rehearing order modifying certain license articles https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=10819629 Order approving amendment of license https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14414097 401 Water Quality Certification https://www.ezview.wa.gov/Portals/_1962/images/FERC%20401s/nisqually.pdf
Power Plant Character-istics	Dates of initial operation	LaGrande diversion dam and LaGrande Powerhouse: 1912 LaGrande Dam, LaGrande powerhouse upgrade, and Alder Dam: 1945
	Total name-plate capacity (MW)	115MW
	Average annual generation (MWh)	576,191 Mwh
	Number, type, and size of turbines, including maximum and minimum hydraulic capacity of each unit	(4) - 8,000 HP / Francis – LaGrande powerhouse (1) - 55,000 HP / Francis – LaGrande powerhouse (1) - 437 HP / Francis – LaGrande powerhouse (2) - 34,500 HP / Francis – Alder powerhouse
	Modes of operation	Alder Dam: Peaking LaGrande: Run-of-river
	Dates and types of major equipment upgrades	LaGrande powerhouse – Added 55,000 HP turbine in 1945 LaGrande Dam – Added a small turbine to generate from required minimum flow releases
	Dates, purpose, and type of any recent operational changes	No recent operational changes.
	Plans, authorization, and regulatory activities for any facility upgrades	No upgrades planned.
Character-istics of Dam, Diversion, or Conduit	Date of construction	LaGrande diversion dam and LaGrande Powerhouse: 1912 LaGrande Dam, LaGrande powerhouse upgrade, and Alder Dam: 1945
	Dam height	Alder Dam height: 285 feet

		LaGrande Dam height: 192 feet
	Spillway elevation and hydraulic capacity	Spillway Elevation Above Riverbed — Capacity Alder 1177 feet 2400 cfs LaGrande 912 feet 2300 cfs
	Tailwater elevation	Tailrace Elevation Above Sea Level Alder 932 feet LaGrande 516 feet
	Length and type of all penstocks and water conveyance structures between reservoir and powerhouse	LaGrande – 120-foot penstocks: (4) – 4-foot steel (1) – 11.5-foot steel (1) – 20-inch steel Alder – 160 foot penstocks: (2) – 10-foot steel
	Dates and types of major, generation-related infrastructure improvements	LaGrande powerhouse – Added 55,000 HP turbine in 1945 LaGrande Dam – Added a small turbine to generate from required minimum flow releases
	Designated facility purpose	Power generation
	Water source	Nisqually River
	Water discharge facilities	Alder powerhouse Alder spillway LaGrande spillway and small generating unit LaGrande powerhouse
Characte-ristics of Reservoir and Watershed	Maximum usable storage Surface area at full pool	Alder impoundment: 161,457 acre feet and maximum pool 3,065 acres LaGrande impoundment: 2,700 acre feet and maximum pool 450 acres
	Maximum water surface elevation (ft. MSL)	Alder impoundment: 1207 feet LaGrande impoundment: 935 feet
	Maximum and minimum volume and water surface elevations for designated power pool, if available	Alder impoundment: Maximum pool 3,065 acres LaGrande impoundment: Maximum pool 450 acres
	Any upstream dam(s)	No upstream dam
	Any downstream dam(s)	Yelm Project, City of Centralia, WA, FERC No. 10703, River Mile 26.2
	Operating agreements with upstream or downstream reservoirs that affect water availability, if any, and facility operation	Initial Decision Terminating Docket dated March 25, 1993 (see section 3.A.1)

	Area inside FERC project boundary, where appropriate	7623 acres
Hydrologic Setting	Average annual flow at the dam	1418 cfs
	Average monthly flows – cubic feet per second (cfs)	Month / Average Monthly Flows (cfs) Oct 743 Nov 1763 Dec 2196 Jan 2115 Feb 1874 Mar 1653 Apr 1638 May 1645 Jun 1377 Jul 907 Aug 618 Sep 513
	Location and name of relevant stream gauging stations above and below the facility	Upstream Gauge: 12082500 Nisqually River Near National, WA Downstream Gauge: 12089500 Nisqually River at McKenna, WA
	Watershed area at the dam	Nisqually River Watershed
Designated Zones of Effect	Number of zones of effect	4 Zones of effect: Zone 1 – Nisqually River Zone 2 – Bypassed Reach Zone 3 – LaGrande Impoundment Zone 4 – Alder Impoundment
	Upstream and downstream locations by river miles	Upper limit of Zone 1: LaGrande Powerhouse (River mile 40.6) Upper limit of Zone 2: LaGrande Dam (River mile 42.5) Upper limit of Zone 3: Alder Dam (River mile 44.2)

		Lower limit of Zone 4: Alder Dam (River mile 44.2)
	Type of waterbody (river, impoundment, by-passed reach, etc.)	Alder Impoundment LaGrande Impoundment LaGrande Bypassed Reach Nisqually River downstream of LaGrande powerhouse
	Delimiting structures	Lower limit of Zone 3: LaGrande Dam Lower limit of Zone 4: Alder Dam
	Designated uses by state water quality agency	Zones 1-3: Water quality classifications designated by Ecology are as follows: Aquatic Life Uses - core summer habitat; Recreational Uses - primary contact; Water Supply Uses – all (stock, agricultural, industrial and domestic water); Miscellaneous Uses – all (aesthetic, boating, commerce/navigation, harvesting and wildlife habitat). Zone 4: Water quality classifications designated by Ecology are as follows: Aquatic Life Uses - core summer habitat; Recreational Uses – extraordinary primary contact; Water Supply Uses – all (stock, agricultural, industrial and domestic water); Miscellaneous Uses – all (aesthetic, boating, commerce/navigation, harvesting and wildlife habitat).
Additional Contact Information	Names, addresses, phone numbers, and e-mail for local state and federal resource agencies	See Section 3.0 – Contacts
	Names, addresses, phone numbers, and e-mail for local non-governmental stakeholders	See Section 3.0 – Contacts
Photographs and Maps	Maps, aerial photos, and/or plan view diagrams of facility area and river basin	See Figures 1-5 and Photos 1-4 below
	Photographs of key features of the facility and each of the designated zones of effect	See Figures 1-5 and Photos 1- 4 below

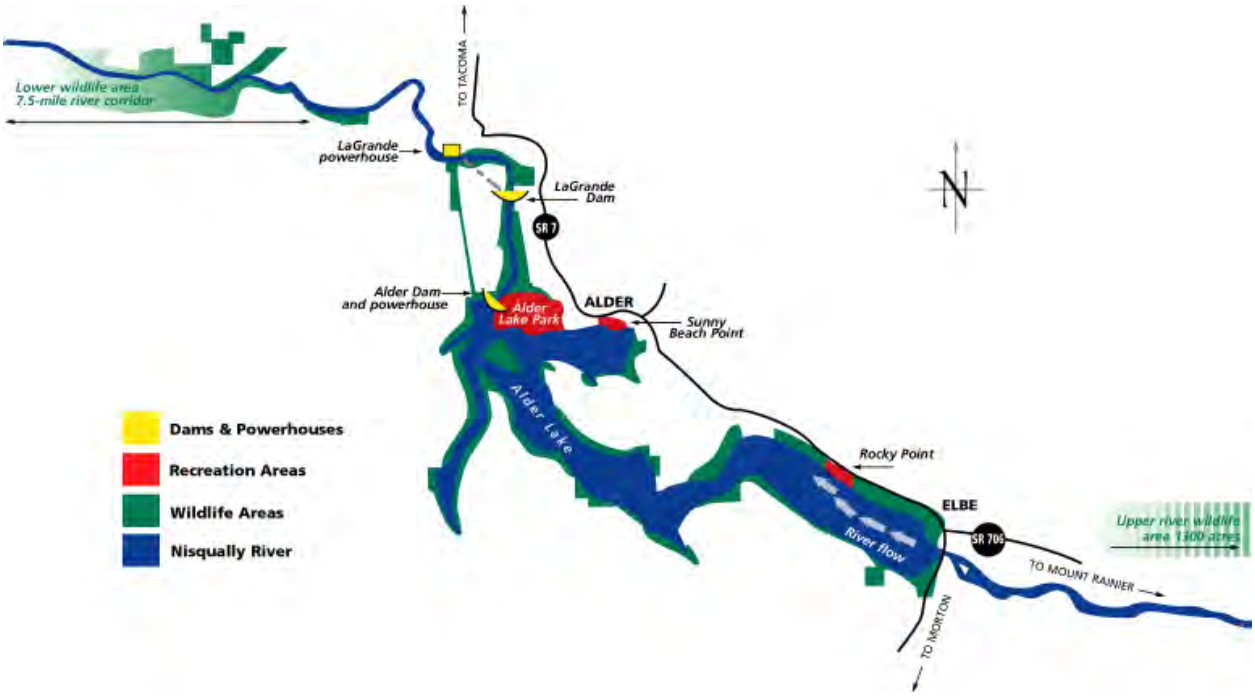

Figure 1. Nisqually Hydroelectric Project Map

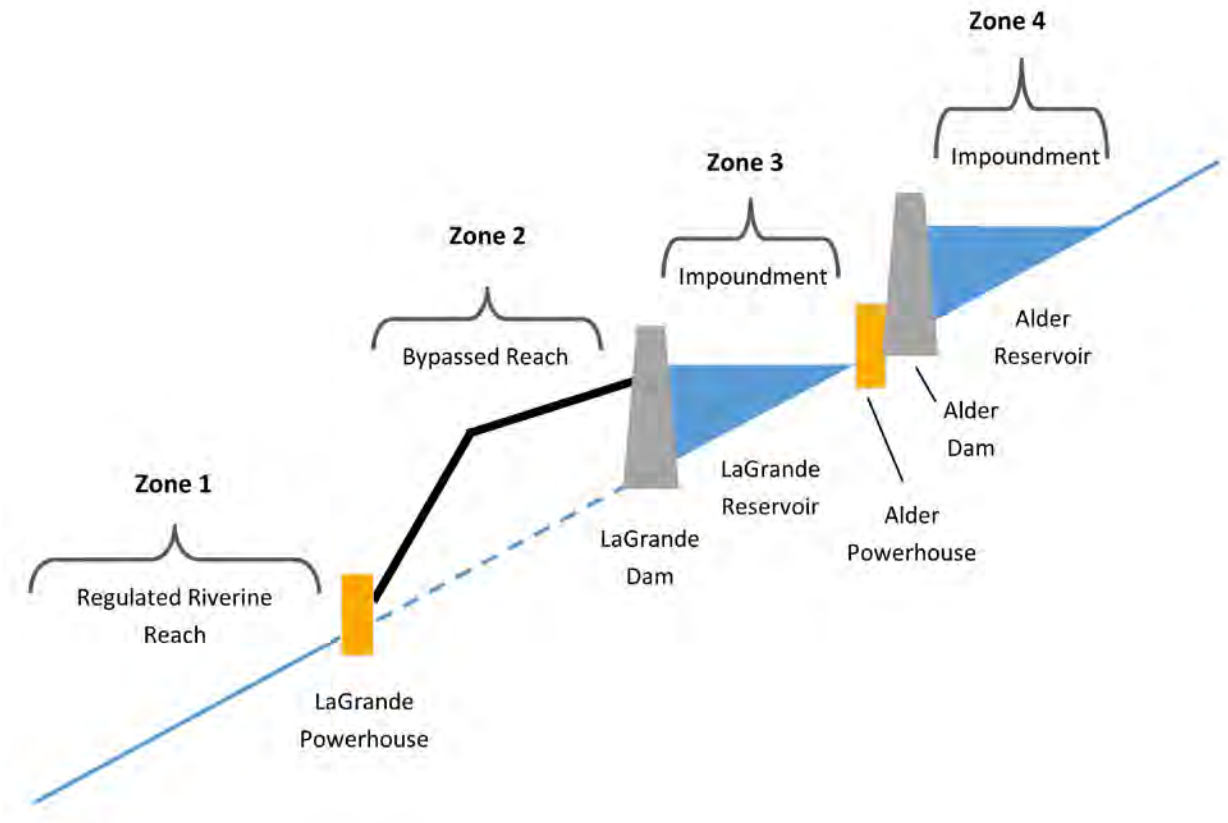

Figure 2. Zones of Effect Schematic for Nisqually Hydroelectric Project

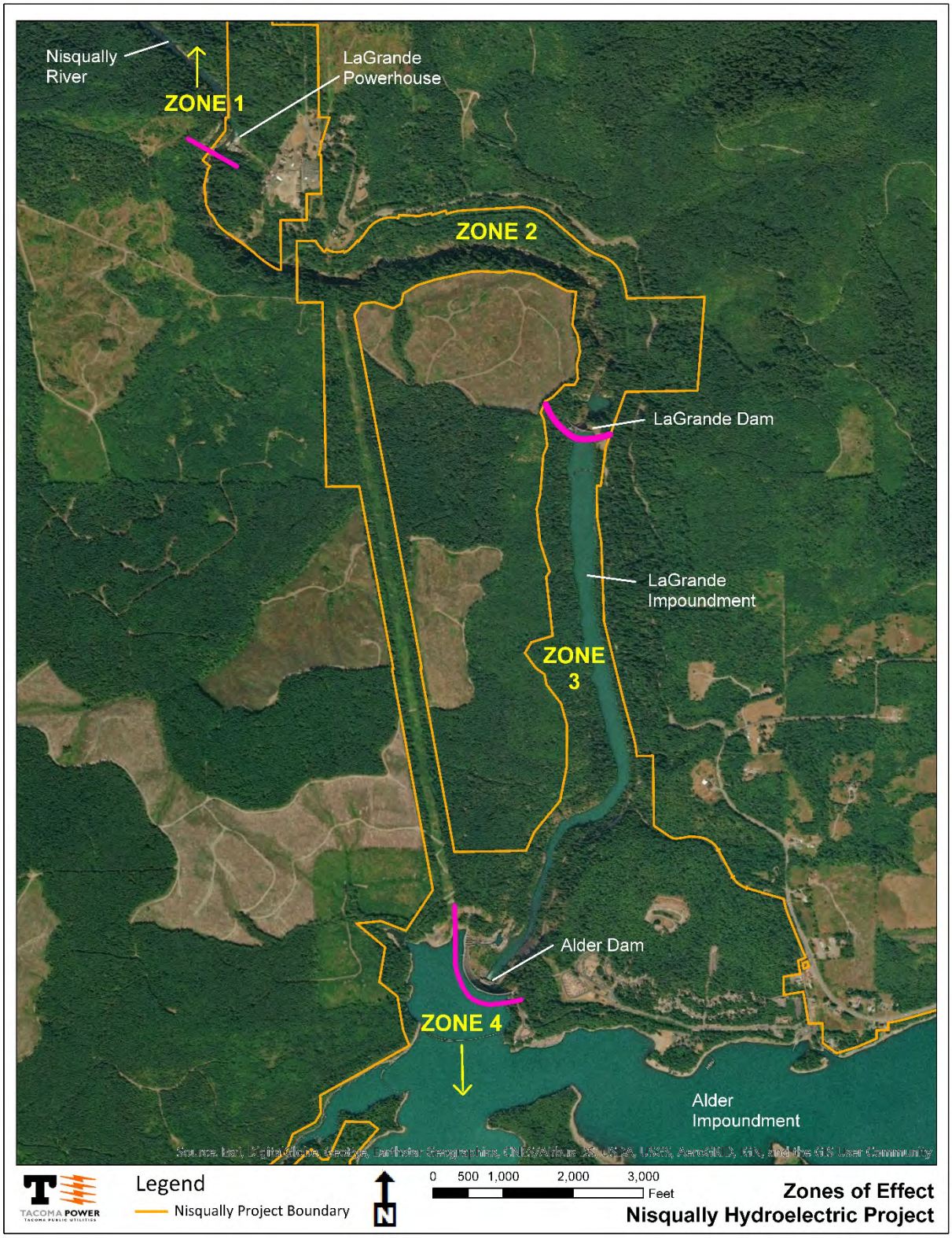

Figure 3. Zones of Effect of Nisqually Hydroelectric Project

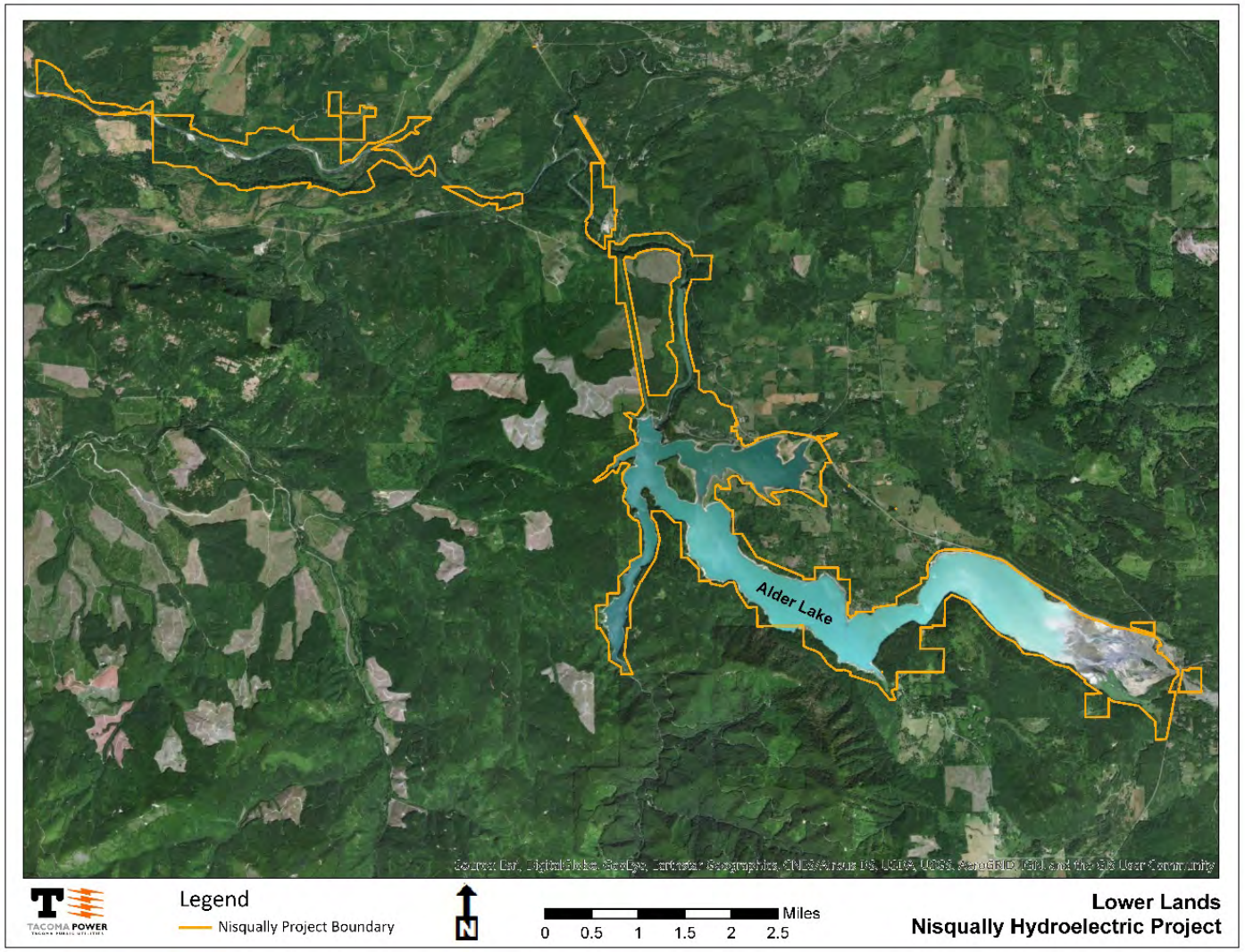

Figure 4. Alder and LaGrande Impoundments and Lower Lands of the Nisqually Hydroelectric Project

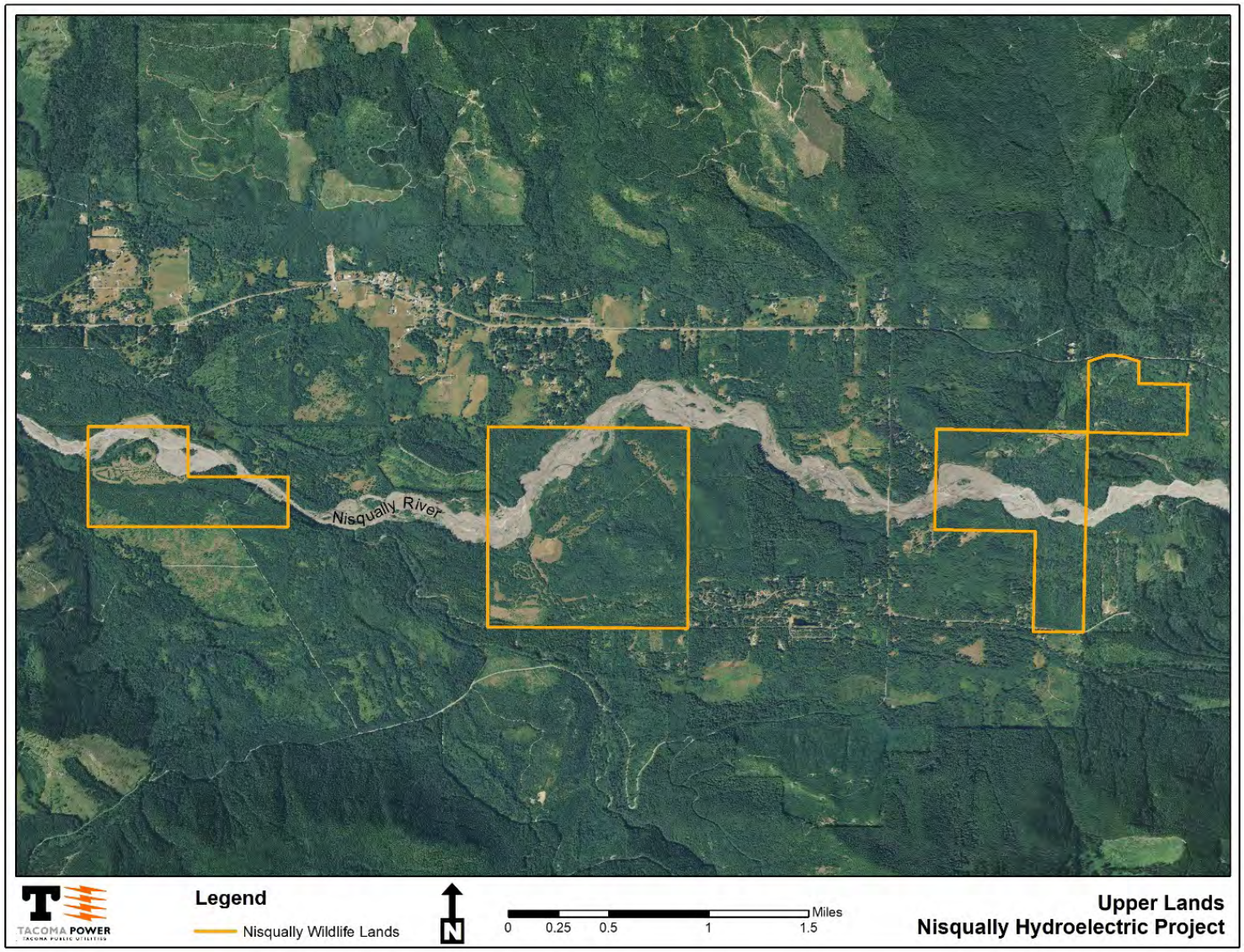

Figure 5. Upper Lands of Nisqually Hydroelectric Project

Photo 1. Alder Dam

Photo 2. Alder Powerhouse

Photo 3. LaGrande Dam

Photo 4. LaGrande Powerhouse

2.0 Standards Matrices

Table 2.1 Standards Matrix for Zone 1 – Nisqually River.

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

Table 2.2 Standards Matrix for Zone 2 – Bypassed Reach.

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

Table 2.3 Matrix of Alternative Standards for Zone 3 – LaGrande Impoundment.

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

Table 2.4 Matrix of Alternative Standards for Zone 4 - Bypassed Reach.

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

3.0 Supporting Information

This section contains information that explains and justifies the standards selected to pass the LIHI certification criteria.

3.A Ecological Flow Standards

3.A.1 Ecological Flows Standard for Zone 1 – Nisqually River

The Nisqually Hydroelectric Project satisfies Standard A.2, Agency Recommendation, in Zone 1 – Nisqually River.

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent).

Instream flows in the Nisqually River below LaGrande powerhouse (Zone 1) are managed according to License Article 402 of the 1997 FERC license (as amended in November 27, 1998 Order on Rehearing). This incorporates instream minimum flow requirements as well as additional flow for downstream uses as specified in the 1993 Initial Decision Terminating Document ("1993 Docket"). Minimum flow requirements are shown below in an excerpt from License Article 402 (additional detail in 2 through 6 not shown).

Excerpt from Nisqually FERC License Article 402:

"The licensee shall operate the project such that discharges into the Nisqually River downstream from the LaGrande powerhouse, as calculated at the Yelm diversion dam, and in the Yelm bypassed reach meet or exceed those minimum instream flows specified in the 1993 Initial Decision Terminating Docket. These flows are as follows:

(1) The flow in the bypass section and in the mainstem of the Nisqually River from LaGrande to the Yelm Project Diversion of the Nisqually River shall at all times equal or exceed:

	Bypass	***Mainstem***
October1 to December 15	*550 cfs*	*700 cfs*
December 16 to May 31	*600 cfs*	*900 cfs*
June 1 to July 31	*500 cfs*	*750 cfs*
August 1 to September 30	*370 cfs*	*575 cfs"*

Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.

The Nisqually River Coordinating Committee (NRCC, comprised of Tacoma Power, City of Centralia, the Nisqually Tribe, the Washington Department of Fish and Wildlife, the National Marine Fisheries Services, and the U.S. Fish and Wildlife Service) has been working cooperatively on issues of instream flow since 1978, and is responsible for negotiating the minimum instream flows for Zone 1. Instream flow requirements are based on habitat needs for a number of salmonid species across multiple life history stages. The Environmental Report submitted as Exhibit E (Section 3.1.2.3) to the 1991 License Application (Tacoma 1991) describes the body of work and the administrative record leading to the minimum flows defined in the license application. The primary study of instream flow needs was based on a transect analysis approach and evaluated physical stream attributes along transects (representing similar habitat types within the river) at a range of flows (Easterbrooks 1980).

The 1993 Docket incorporated requirements for upward adjustments of the minimum flow requirements to ensure needed flow for the Yelm Hydroelectric Project, located downstream from the Nisqually Project. These requirements are included in License Article 402.

River flows in Zone 1 are continually monitored by USGS gages 12086500 (Nisqually River at LaGrande, Washington), 12089208 (central Power Canal new McKenna, Washington), and 12089500 (Nisqually River at McKenna, Washington). Annual compliance reporting for minimum flows is included as part of the Annual Natural Resources Report to FERC as required by License Article 410.

Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.

Minimum flows were established by the NRCC in response to concerns about the impact of the Project and the downstream Yelm Hydroelectric Project on anadromous fish in the lower reaches of the river. The NRCC was created in 1978 with the initial task of studying flow requirements in Zone 1 (mainstem and bypass) based on selected Nisqually River fish life history stages and species: spawning (Chinook, chum, steelhead), incubation (steelhead), and juvenile rearing (all species). Between 1978 and 1985, the NRCC (including the Washington Department of Ecology (Ecology)) evaluated fishery instream flow needs in the river and negotiated minimum flow requirements among all parties. The NRCC agreed upon the current

minimum flow requirements in 1985, and recommended them to FERC in 1986. They were incorporated in License Article 402 during relicensing.

Flows were set to benefit Nisqually River salmon and aquatic community by increasing summer flows in contrast to upstream or historical flows. Summer flows in Zone 1 are augmented with deep-drawn water from the LaGrande Impoundment (Zone 3), which increases overall flow volume and decreases instream temperatures during the summer months.

Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

Downramping rules for Zones 1 and 2 are established in License Article 405 (as amended). These rules are consistent with regional standards and based on science specific to Pacific Northwest salmonids (Hunter 1992). In Zone 1, downramping rules apply at all river flows less than 5,000 cfs. Downramping rules are as follows:

February 15 through June 15: No downramping during daylight hours, and two inches per hour at night.

June 16 through October 31: One inch per hour day and night.

November 1 through February 15: Two inches per hour day and night.

Subsequent to relicensing, the LaGrande powerhouse was modified by the installation of a flow continuation valve to ensure that minimum flow requirements are released when flows through the generation units are reduced or stopped. In that scenario, the flow continuation valve is opened to maintain flow directly into Zone 1. This was planned for under License Article 412 and implemented in 2000.

3.A.2 Ecological Flows Standard for Zone 2 – Bypassed Reach

The Nisqually Hydroelectric Project satisfies Standard A.2, Agency Recommendation, in Zone 2 – Bypassed Reach.

Criterion	*Standard*	*Instructions*
A	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Explain how the recommendation relates to agency management goals and objectives for fish and wildlife. • Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent).

Instream flows in the Bypassed Reach (Zone 2) are according to License Article 403 of the 1997 FERC license (as amended by FERC Orders in August 31, 2001 and March 9, 2005). This is consistent with the Project's Washington Department of Ecology 401 Water Quality Certification. Minimum flow requirements are shown below in an excerpt from License Article 403 (additional detail regarding temperature and dissolved oxygen not shown).

Excerpt from Nisqually FERC License Article 403:

"The licensee shall release from LaGrande dam into the Nisqually River a minimum flow of 30 cfs, as measured at the spillway plunge pool, or inflow to Alder Lake, whichever is less, for the protection and enhancement of fish and wildlife resources in the LaGrande bypassed reach."

Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.

Prior to relicensing, there was no minimum flow requirement for the Bypassed Reach. Any water flow in this reach was provided by seepage from the LaGrande Impoundment, with occasional surface flow originating from spills at LaGrande Dam. Minimum flows in Zone 2 were determined during relicensing based on considerations for fishery resources and Ecology requirements for beneficial use. There was as no consensus among the resource agencies for a minimum flow recommendation at the time of the 1991 License Application (Tacoma 1991 - see Environmental Report Section 2.4.2). The resource agencies subsequently directed studies to

evaluate fish presence and continuous surface flow evaluation at four study flows (5, 15, 30, and 80 cfs), which were provided to FERC as requests for additional information (Tacoma 1993, 1994). The 30 cfs minimum flow required in License Agreement 403 was recommended by the resource agencies to provide fishery enhancements as well as other beneficial use (Ecology); it was objected to by the Nisqually tribe, which believed no flows should be provided to discourage attraction to the reach which they believe is marginal. River flows in Zone 2 are continually monitored by USGS gage 12086000 (Nisqually River at LaGrande Dam, Washington). Annual compliance reporting for minimum flows is included as part of the Annual Natural Resources Report to FERC as required by License Article 410.

Explain how the recommendation relates to agency management goals and objectives for fish and wildlife.

The 30 cfs minimum flow in Zone 2 was established to provide continuous surface flow, resulting in a wetted channel year round. This supports the Washington Department of Ecology's goals for beneficial use, including aesthetics, as well as the resource agencies goals for improving salmonid access and habitat in the Bypassed Reach.

Explain how the recommendation provides fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations).

There was no continuous surface flow in Zone 2 prior to relicensing. The 30 cfs minimum flow established in License Article 402 provides continuous surface flow through of this entire area, which improves salmonid access and enhances rearing and spawning habitat.

In addition to the continuous surface flow, seasonally high flow and flood spills from LaGrande Dam to provide higher flows through the Bypass Reach, supporting habitat forming processes (e.g., sediment transport).

Downramping rules for Zones 1 and 2 are established in License Article 405 (as amended). These rules are consistent with regional standards and based on science specific to Pacific Northwest salmonids (Hunter 1992). In Zone 2, these rules are applicable to controllable spills below the critical flow of 1,000 cfs from the LaGrande Impoundment into the Bypassed Reach. License Article 407 is specific to upramping rates downstream from the LaGrande dam, and cannot exceed six inches per hour for the first hour of any spill.

3.A.3 Ecological Flows Standard for Zone 3 – LaGrande Impoundment

The Nisqually Hydroelectric Project satisfies Standard A.1, Not Applicable / De Minimis Effect, in Zone 3 – LaGrande Impoundment.

Criterion	*Standard*	*Instructions*
A	1	Not Applicable / De Minimis Effect: • Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility. • If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained. • In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located. • For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – NOTE: this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.

Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility.

The LaGrande Impoundment is in a deep canyon extending from Alder Dam (upstream) to LaGrande Dam (downstream). The Alder powerhouse is at the base of the Alder Dam. All water leaving the Alder Impoundment (including all water from upstream of the Alder Impoundment) passes through the LaGrande Impoundment: there are no bypassed reaches in Zone 3.

If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained.

The LaGrande Impoundment is close to a run-of-river operation. This impoundment acts as a buffer reservoir to maintain a consistent instream flows throughout the year below the LaGrande Dam and powerhouse, respectively. There is little storage capacity in the LaGrande Impoundment (2,700 acre feet). This is sufficient to maintain river flow for 0.5 days in winter to two days in the summer.

The 1997 FERC license (as amended) does not include minimum flow requirements, reservoir elevation requirements, or flow or water level monitoring requirements for the LaGrande Impoundment. License Article 404 includes water conservation measures (maximum conservation release flows) specific to maintaining minimum flows in Zones 1 and 2 when water levels in Alder reservoir are below the minimum reservoir elevations.

Water monitoring in the LaGrande Impoundment (e.g., flow, water level) is conducted internally to support project operations. Monitoring is not done for compliance and there is no publically available or accessible information on flow or water level in Zone 3. There are no formal opportunities for recreation on the LaGrande Impoundment.

In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located.

This is not applicable; the Nisqually Project, including LaGrande Dam and powerhouse, is not a conduit project.

For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – NOTE: this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.

There is no fish evaluation or fish habitat evaluation in Zone 3. For the Nisqually Project, the fish resource focus is anadromous species in Zones 1 and 2 (downstream of the LaGrande Impoundment) and resident species in Zone 4 (Alder Impoundment). There is no fish passage through the LaGrande Impoundment.

Recreational fishing is not prohibited in the LaGrande Impoundment, but it is not encouraged. There is limited angler access and no recreational fishery enhancement.

Article 423 – Wildlife Management Plan of the FERC license applies to all zones, including Zone 3 – LaGrande Impoundment. The activities in this plan protect, mitigate and enhance wildlife habitat surrounding the project. There is not a specific shoreline management plan for the project.

A shoreline buffer was established around the entire perimeter of LaGrande Impoundment as part of the Nisqually Project settlement agreement. The buffers in most of the undeveloped areas exceed 200 feet and/or abut public lands that offer increase buffer functions.

The Wildlife Management Plan includes:

- descriptions of the land parcels in the wildlife management areas
- wildlife habitat management prescriptions
- specific goals and objectives that includes measurable habitat evaluation
- monitoring and evaluating the effectiveness of the measures
- a schedule for reporting and revising the plan as needed
- a schedule for implementing the measures

Tacoma acquired and reserved more than 3,350 acres of land in the Project vicinity that is designated as wildlife habitat (Figure 6), called the Nisqually Project Wildlife Management Area. This area includes parcels of wildlife habitat that surround the LaGrande Impoundment in Zone 3.

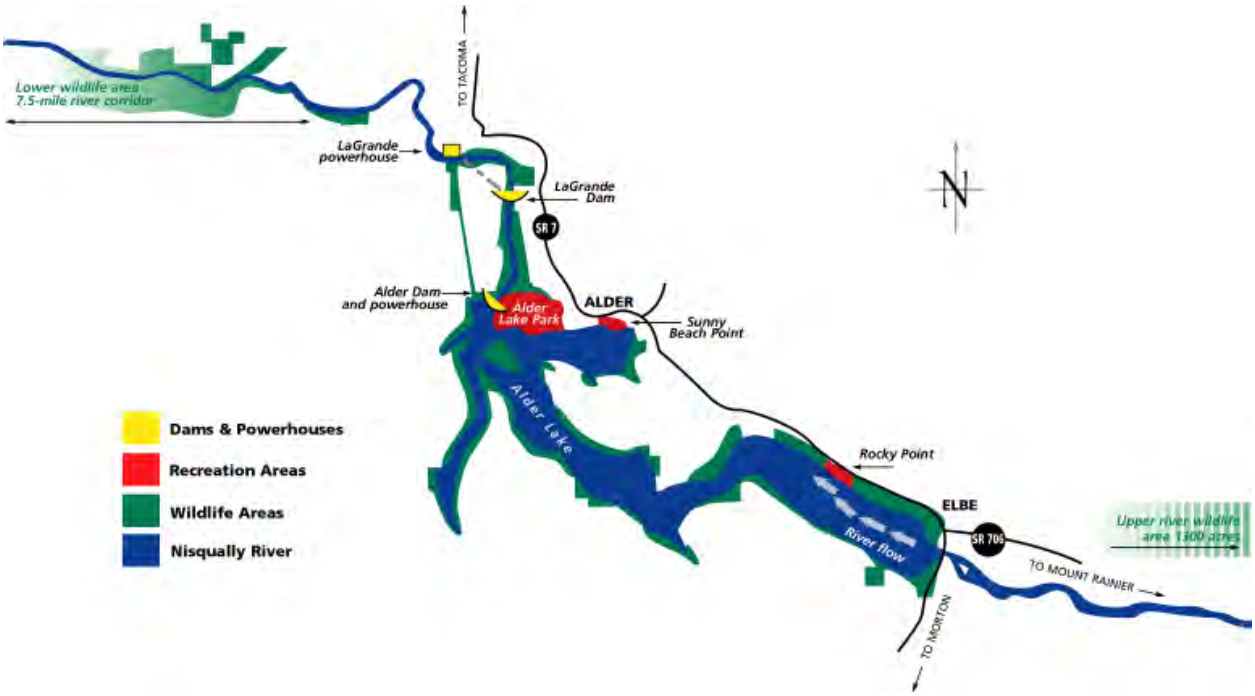

Figure 6. Nisqually Hydroelectric Project Map, showing wildlife areas in green.

The Project is in compliance with Article 423 – Wildlife Management Plan of the FERC license, which directs the protection, mitigation, and enhancement of wildlife habitat in Zone 3. Each year Tacoma continues to implement the wildlife management measures contained within the plan and submits an annual report detailing the status of the measures to FERC.

3.A.4 Ecological Flows Standard for Zone 4 – Alder Impoundment

The Nisqually Hydroelectric Project satisfies Standard A.1, Not Applicable / De Minimis Effect, in Zone 4 – Alder Impoundment.

Criterion	*Standard*	*Instructions*
A	1	Not Applicable / De Minimis Effect: • Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility. • If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained. • In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located. • For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – NOTE: this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.

Confirm the location of the powerhouse relative to other dam/diversion structures to establish that there are no bypassed reaches at the facility.

The Alder powerhouse is at the base of Alder Dam. There are no dams or diversion structures upstream of Alder Dam, and no bypassed reaches in Zone 4.

If Run-of-River operation, provide details on how flows, water levels, and operation are monitored to ensure such an operational mode is maintained.

This is not applicable; the Alder Impoundment is not operated as a run-of-river facility.

In a conduit project, identify the water source and discharge points for the conduit system within which the hydropower plant is located.

This is not applicable; the Nisqually Project, including Alder Dam and powerhouse, is not a conduit project.

For impoundment zones only, explain how fish and wildlife habitat within the zone is evaluated and managed – NOTE: this is required information, but it will not be used to determine whether the Ecological Flows criterion has been satisfied. All impoundment zones can apply Criterion A-1 to pass this criterion.

The 1997 FERC license (as amended) does not include minimum flow requirements for Zone 4. License Article 404 (as amended) requires that the water levels in the Alder Impoundment remain above 1,197.0 from Memorial Day to Labor Day and above 1,170 at all other times, except as needed to meet minimum instream flows downstream of the LaGrande powerhouse and dam, respectively. Reservoir elevations are monitored and reported as required by License Article 408. The Alder Impoundment provides water storage (217,500 acre feet) which provides

for late summer critical flows downstream. There are no flood control requirements associated with the Alder Impoundment but it does provide some flood control benefit.

Article 423 – Wildlife Management Plan of the FERC license applies to all zones, including Zone 4 – Alder Impoundment. The activities in this plan protect, mitigate and enhance shoreline surrounding the project. There is not a specific shoreline management plan for the project.

A shoreline buffer was established around the entire perimeter of Alder Impoundment as part of the Nisqually Project settlement agreement. The buffer widths vary, but they are typically at least 100 feet wide along the undeveloped shoreline areas. The buffers in most of the undeveloped areas exceed 200 feet and/or abut public lands that offer increased buffer functions. All but the shoreline adjacent to previously developed areas are classified as wildlife lands and managed under the Wildlife Management Plan. The remaining shoreline adjacent to developed areas are managed to allow low impact recreation and assure minimal impacts to habitat, water quality, and aesthetics.

The Wildlife Management Plan includes:

- descriptions of the land parcels in the wildlife management areas
- wildlife habitat management prescriptions
- specific goals and objectives that includes measurable habitat evaluation
- monitoring and evaluating the effectiveness of the measures
- a schedule for reporting and revising the plan as needed
- a schedule for implementing the measures

Tacoma acquired and reserved more than 3,350 acres of land in the Project vicinity (see Figure 6 in Zone 3 Section above) that is designated as wildlife habitat, called the Nisqually Project Wildlife Management Area. This area includes parcels of wildlife habitat that surround Alder Impoundment in Zone 4.

The Project is in compliance with Article 423 – Wildlife Management Plan of the FERC license, which directs the protection, mitigation, and enhancement of wildlife habitat in Zone 4. Each year Tacoma continues to implement the wildlife management measures contained within the plan and submits an annual report detailing the status of the measures to FERC.

References

Easterbrooks, J.A. 1980. Nisqually River Flow Study. Washington Department of Fisheries. Prepared for the Nisqually River Coordinating Committee.

Hunter, M.A. 1995. Hydropower flow fluctuations and salmonids: a review of the biological effects, mechanical causes, and options for mitigation. Technical Report 119. Washington Department of Fisheries, Olympia, Washington.

Tacoma (Tacoma Public Utilities). 1991. Application for new license major existing project. December 23, 1991.

Tacoma (Tacoma Public Utilities). 1993. Final Response to FERC request for additional information of June 4, 1992. Prepared by Harza Northwest. February 22, 1993.

Tacoma (Tacoma Public Utilities). 1994. Final Response to FERC request for additional information of September 24, 1993 and amendment to the December 26, 1991 application for new license. Prepared by Harza Northwest. January 6, 1994.

License Articles and Links

1993 Initial Decision Terminating Docket
https://elibrary.ferc.gov/idmws/search/intermediate.asp?link_file=yes&doclist=1559420

1997 FERC License
https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=10775137

License Article 402 (see Article 410 Annual Report)

License Article 403 (see Article 410 Annual Report)

License Article 404 (see Article 410 Annual Report)

License Article 405 (see Article 410 Annual Report)

License Article 407 (see Article 410 Annual Report)

License Article 410 Annual Report
https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14831831

License Article 412

License Article 423 Annual Report
https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14876820

3.B Water Quality Standards

3.B.1 Water Quality Standard for Zone 1 – Nisqually River

Washington State Department of Ecology (Ecology) regulates the Nisqually Hydroelectric Project through Tacoma Power's Clean Water Act (CWA) 401 Water Quality Certification (WQC), FERC license and water quality standards for surface waters of the state (WAC 173-201A). Freshwater designated uses and criteria are defined by Washington State in WAC 173-201A-200. Aquatic life uses are designated with an intent to maintain identified uses and the requirement to protect all indigenous fish and nonfish aquatic species in waters of the state in addition to the key species identified in each Washington Administrative Code (WAC). General criteria applying to the Nisqually River freshwater aquatic life uses, recreational uses, water supply uses and other uses are described in WAC 173-201A-602. These general standards describe the criteria for meeting compliance standards for uses and address a variety of water quality standards (temperature, dissolved oxygen, turbidity, total dissolved gas, pH, and bacteria).

The LaGrande powerhouse defines the upstream limit of Zone 1 (lowest zone). Water quality classifications designated by Ecology for Zone 1 are as follows: Aquatic Life Uses - core summer habitat; Recreational Uses - primary contact; Water Supply Uses – all (stock, agricultural, industrial and domestic water); Miscellaneous Uses – all (aesthetic, boating, commerce/navigation, harvesting and wildlife habitat).

The Nisqually Hydroelectric Project satisfies Standard B.2, Agency Recommendation, in Zone 1 – Nisqually River.

Criterion	*Standard*	*Instructions*
B	2	Agency Recommendation: • If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation. • Provide a copy of the most recent Water Quality Certificate, including the date of issuance. • Identify any other agency recommendations related to water quality and explain their scientific or technical basis. • Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation.

The LaGrande powerhouse discharges flows directly into the mainstem Nisqually River at the upstream end of Zone 1. The Nisqually River in Zone 1 is not on the Washington State 303(d) list. However, the Nisqually River was 303(d) listed in 2014 for a Category 5 water temperature impairment from its mouth upstream to approximate RM 4.0, nearly 37 miles downstream of the project (listing ID 6575). The listing is not a result of project operations. Ecology's letter stating that the Nisqually Project complies with its 401 WQC indicates that Ecology has no evidence that the Nisqually Project is the cause of any 303(d) listings (see discussion of letter below). Both Alder and LaGrande are deep withdrawal facilities that release cool water downstream. These cool discharges during warm water conditions throughout other adjacent basins provide a

thermal refugee to salmonids and other aquatic species relaying on cool water for substantial portions of their life histories.

Provide a copy of the most recent Water Quality Certificate, including the date of issuance.

Ecology issued Tacoma Power a 401 Water Quality Certification (WQC) for the Nisqually Hydroelectric Project in an April 30, 1992 letter. The current WQC is available on the Washington State Department of Ecology website at:

https://www.ezview.wa.gov/Portals/_1962/images/FERC%20401s/nisqually.pdf

Identify any other agency recommendations related to water quality and explain their scientific or technical basis.

Article 420 of Tacoma Power's FERC license required the development of a one-year dissolved oxygen monitoring plan to determine if Project discharges from the LaGrande powerhouse were in compliance with Ecology criteria. Monitoring was performed from September 2001 through October 2002 with data ranging from 8.4 to 14.8 mg/L for dissolved oxygen. A final report was submitted to FERC in January 2003 that indicated dissolved oxygen values were all within compliance with state standards.

The Nisqually Watershed Management Plan was prepared for the Nisqually Tribe and WRIA 11 Planning Unit by Golder Associates on October 31, 2003. The plan assessed water quality monitoring programs in the Nisqually basin and provided recommendations for additional monitoring where deemed applicable. No recommendations were suggested for water quality monitoring associated with the Project.

Ecology is the agency that is responsible for issuing and enforcing water quality regulations for the Project. Tacoma Power's FERC license and Ecology issued 401 WQC do not require additional water quality monitoring beyond the Article 420 dissolved oxygen assessment. However, Tacoma Power regularly meets with our managing partners to discuss any issues that have the potential to affect water quality (see discussion of NRCC in section below).

Ecology provided Tacoma Power a letter for inclusion in the LIHI certification application. The letter indicates that Ecology believes Tacoma Power's Nisqually Project complies with all conditions in the WQC, which includes adherence to state water quality standards. The letter further states that no other data collected within the project area has resulted in a water quality limited determination (Appendix A).

Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

Tacoma Power actively engages with stakeholders to manage the Project. The Nisqually River Coordination Committee (NRCC) is comprised of Tacoma Power and our managing/regulating partners. The NRCC meets regularly to address and adaptively manages water quality and other fish/wildlife concerns within the basin. Consultation frequency increases if issues arise,

and may occur as often as weekly depending on the issue and strategy recommended by the NRCC. During the late spring/ summer of 2015 and 2016 the NRCC meet frequently to address low inflow and potential discharge temperature

concerns that were the result of limited snow pack and drought conditions. The NRCC adaptively managed the issues by balancing inflow conditions, in-stream flow requirements, discharge temperature criteria, and the spatiotemporal availability of cool deep-water reserves remaining in the Alder reservoir.

Alder and LaGrande dams are deep withdrawal facilities that release cool water downstream. The cool releases function to lower the Nisqually River's thermal regime during drought conditions. Cool project discharges provide a vital thermal refuge to salmonids and other aquatic species that rely on cool water temperatures for portions of their life histories. Adjacent basins may have significantly higher stream temperatures during years with low snowpack and high solar input. At times when other basins may be experiencing thermal extremes that negatively affect aquatic species living within their bounds, the Nisqually River offers more favorable environmental conditions.

Monitoring during low snowpack/drought conditions has involved water quality assessments of inflows, Alder reservoir and project discharge from the Bypassed Reach and LaGrande Powerhouse. During drought years (ex. 2015 and 2016), weekly full depth temperature profiles are assessed upstream of Alder reservoir to evaluate the thermal regime of riverine inflows and at several locations within the reservoir continuum. The goal of monitoring is to determine if sufficient cool water is available to meet downstream discharge temperature criteria. By assessing thermal profiles of inflows, along Alder reservoir, and Project discharge we are able to examine the thermal gain occurring throughout the reservoir and estimate the remaining cool water available at various operations and inflows. Profiles are assessed beginning in late spring and continuing through summer until flow and temperature concerns have subsided. Generalized summary figures of temperature monitoring data obtained during the spring/summer of 2015 and 2016 are illustrated below in Figures 7-12.

No non-compliance issues occurred during the term of the previous LIHI certification. Elevated discharge temperatures above the state criteria for core salmonid habitat (<16°C) that occurred in 2015 were the result of low/no snow pack, and were reflected in elevated water temperature and low flow inputs into Alder reservoir. Due to these elevated background temperatures, the LaGrande discharges were not considered a violation of standards.

Tacoma Power diligently procures and/or prepares all applicable permits and water quality protection plans (WQPPs) for actions performed by the project within the Nisqually watershed. The US Army Corps of Engineers (USACOE), Washington Department of Fish and Wildlife (WDFW), Ecology and other Federal, State and local entities work closely with Tacoma Power to assure activities being performed do not contribute to water quality degradation.

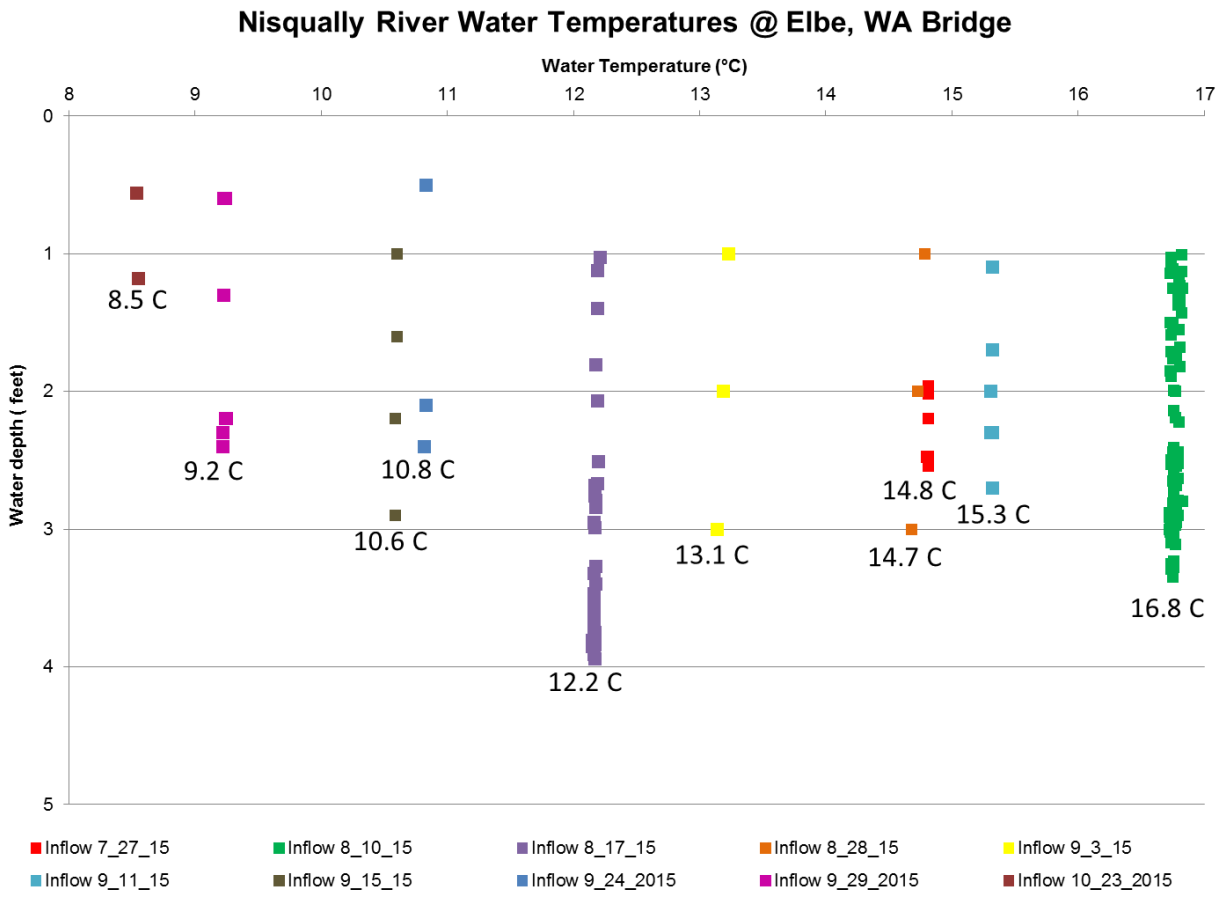

Figure 7. 2015 Nisqually River Inflow Temperatures to Alder Reservoir.

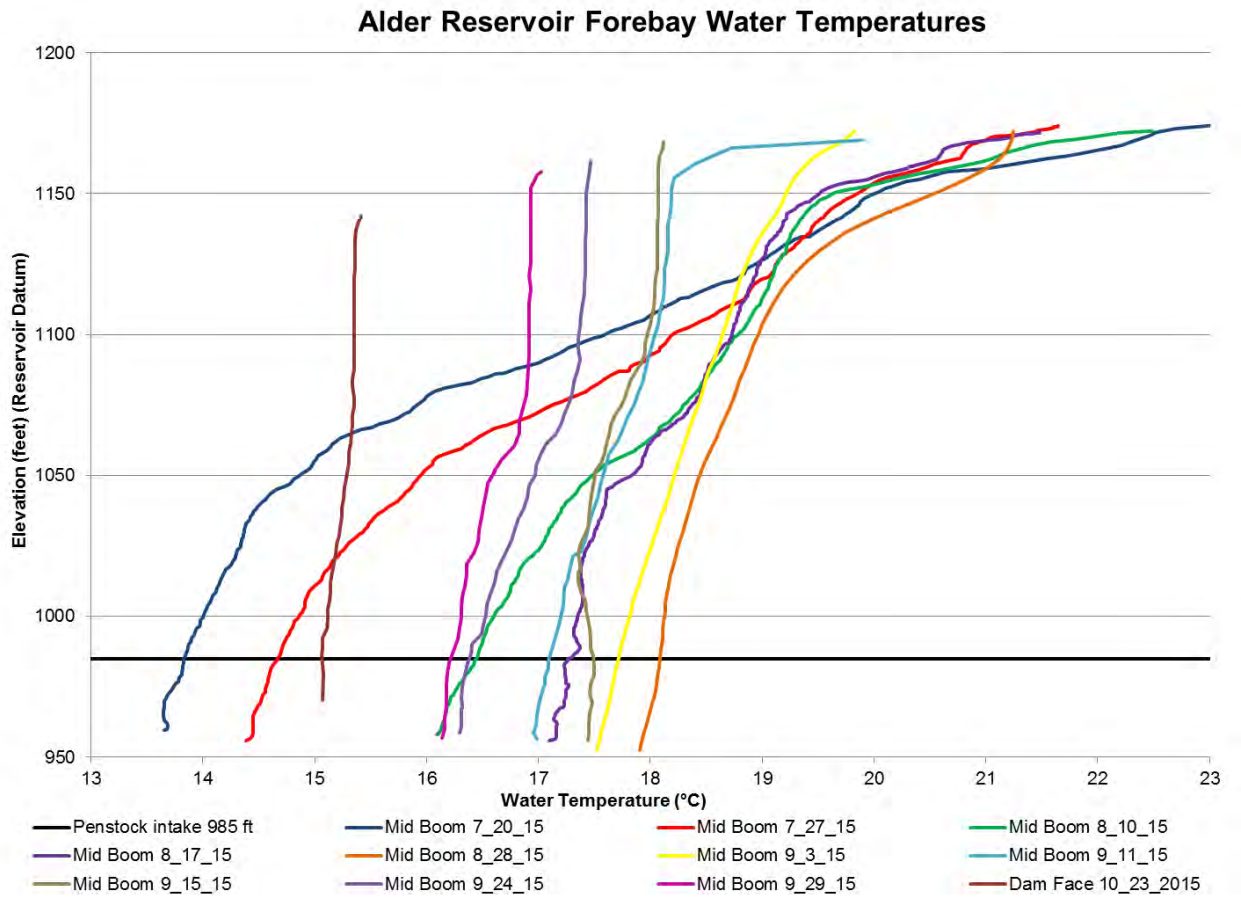

Figure 8. 2015 Alder Dam Forebay Temperature Profiles.

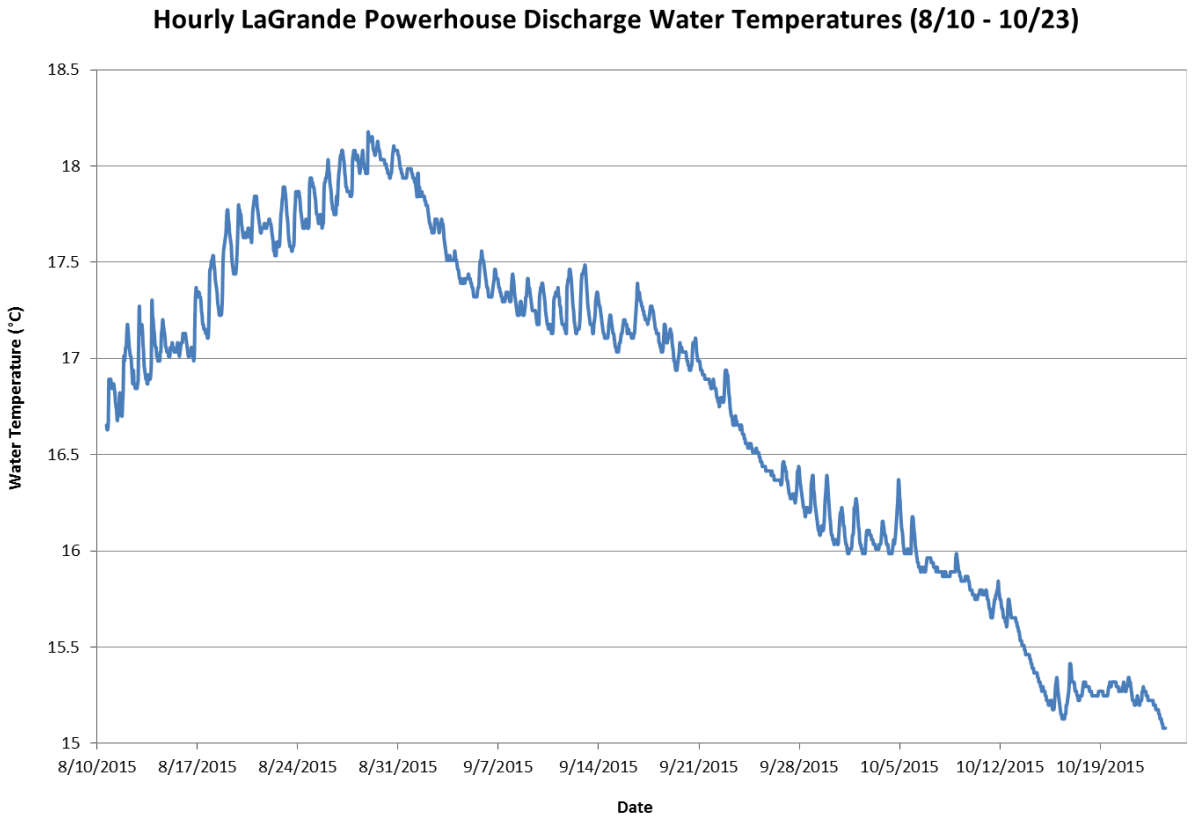

Figure 9. 2015 LaGrande Powerhouse Discharge Water Temperatures.

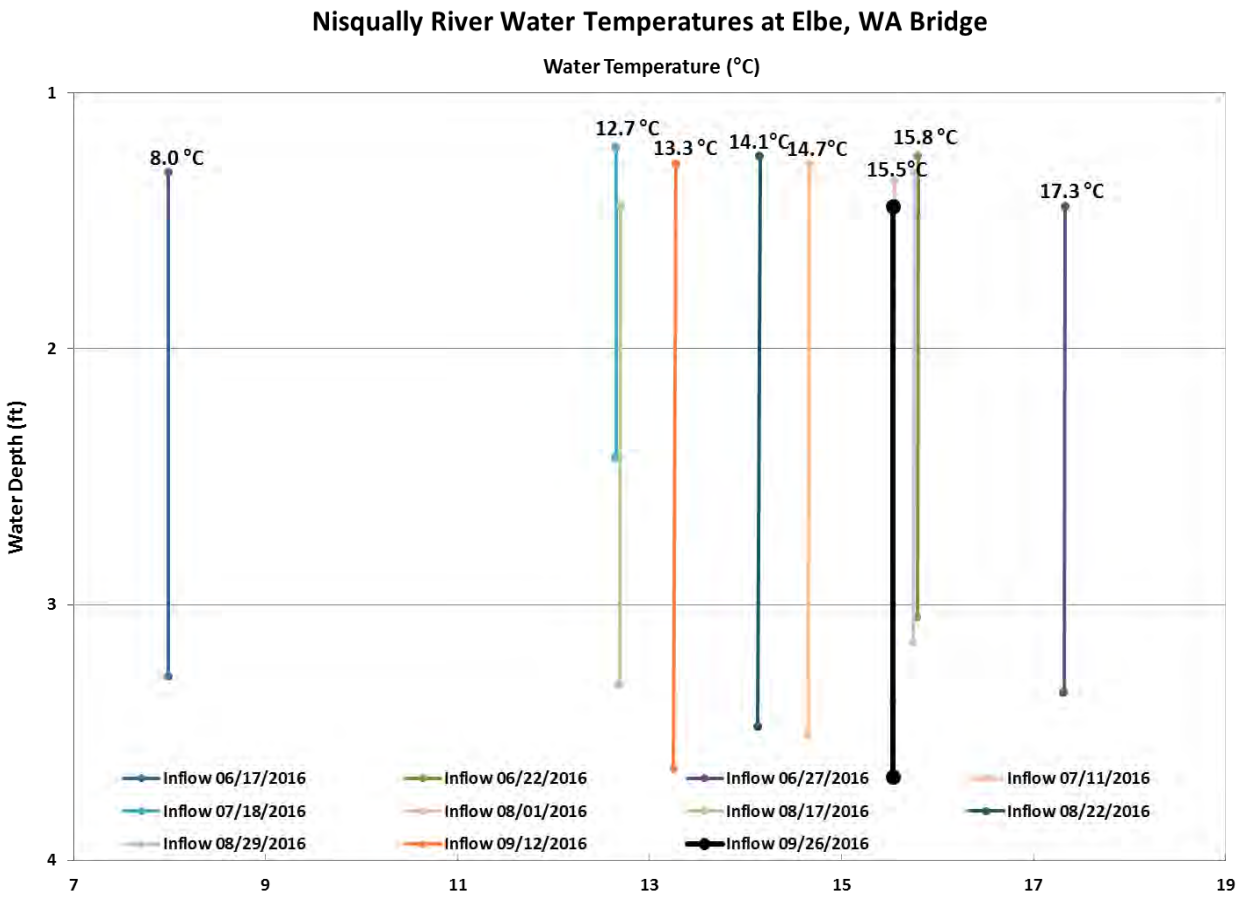

Figure 10. 2016 Nisqually River Inflow Temperatures to Alder Reservoir.

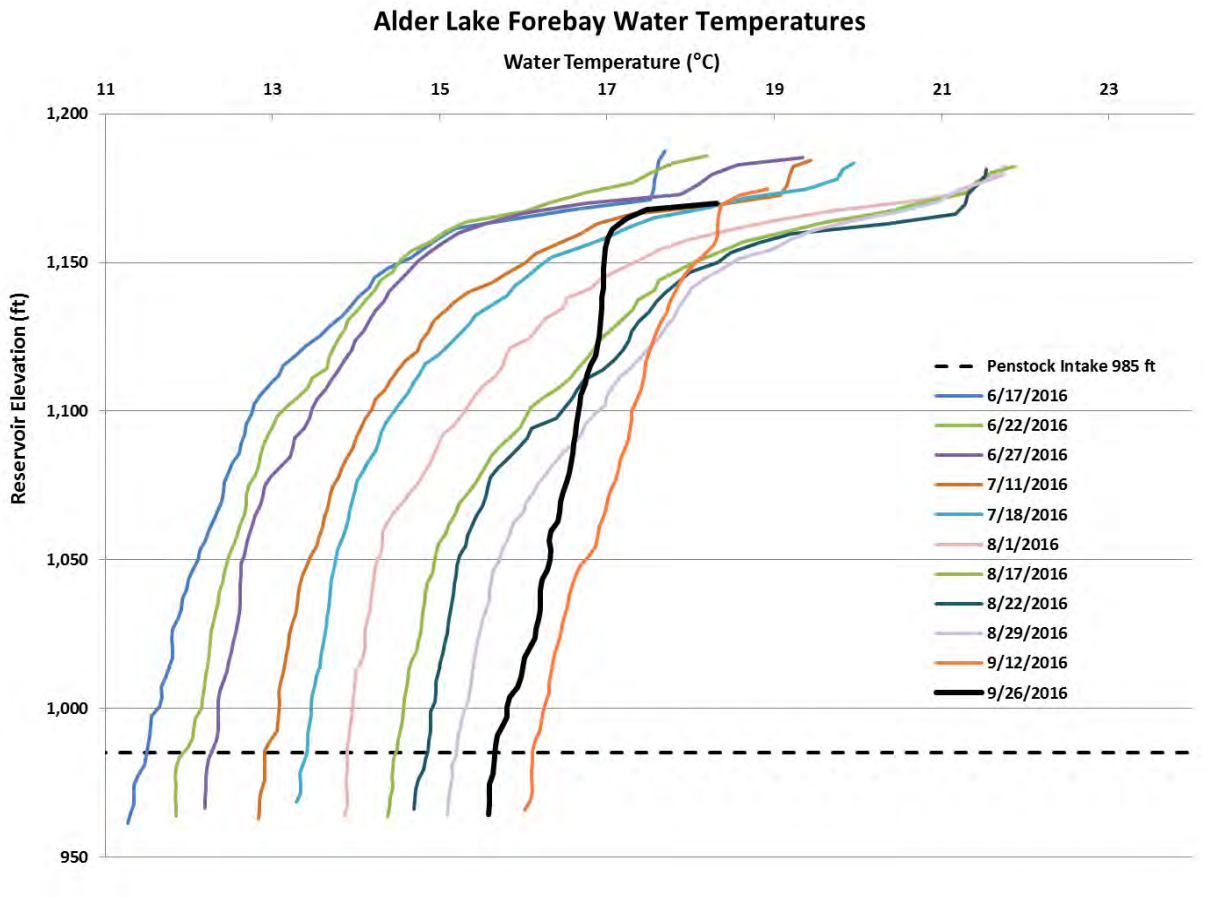

Figure 11. 2016 Alder Dam Forebay Temperature Profiles.

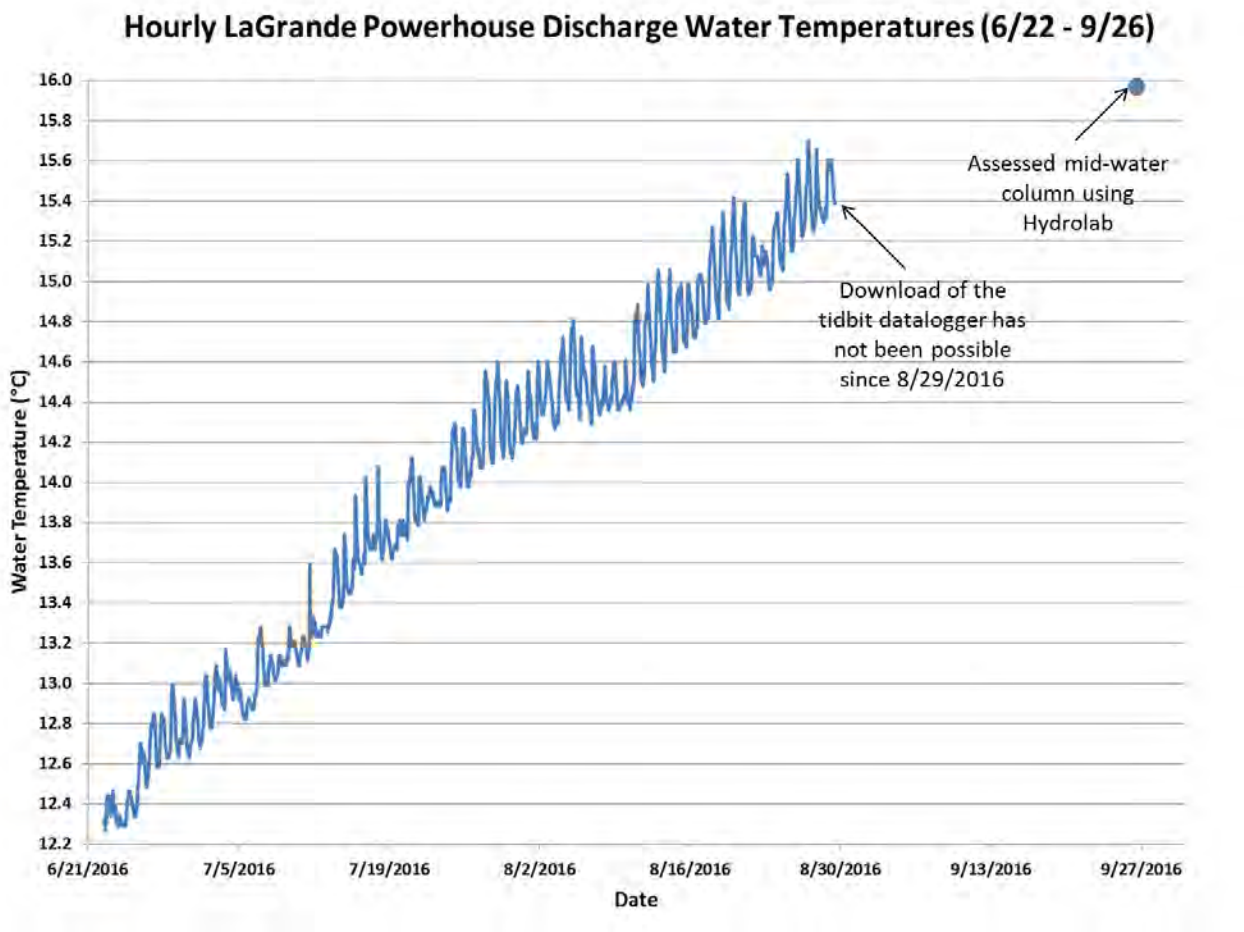

Figure 12. 2016 LaGrande Powerhouse Discharge Water Temperatures.

3.B.2 Water Quality Standard for Zone 2 – Bypassed Reach

LaGrande Dam defines the upstream limit of Zone 2. Water quality classifications designated by Ecology for Zone 2 are as follows: Aquatic Life Uses - core summer habitat; Recreational Uses - primary contact; Water Supply Uses – all (stock, agricultural, industrial and domestic water); Miscellaneous Uses – all (aesthetic, boating, commerce/navigation, harvesting and wildlife habitat).

The Nisqually Hydroelectric Project satisfies Standard B.2, Agency Recommendation, in Zone 2 – Bypassed Reach.

3.B.2 Water Quality Standard for Zone 2 – Bypassed Reach

Criterion	*Standard*	*Instructions*
B	2	Agency Recommendation: • If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation. • Provide a copy of the most recent Water Quality Certificate, including the date of issuance. • Identify any other agency recommendations related to water quality and explain their scientific or technical basis. • Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation.

LaGrande Dam discharges flows directly into the Bypassed Reach of the Nisqually River at the upstream end of Zone 2. The Nisqually River in Zone 2 is not on the Washington State 303(d) list. See Zone 1 Section above for additional information.

Provide a copy of the most recent Water Quality Certificate, including the date of issuance.

See Zone 1 Section above.

Identify any other agency recommendations related to water quality and explain their scientific or technical basis.

No agency recommendations related to water quality were identified for this Zone.

Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

No compliance activities are required or suggested by the regulating agencies for this Zone.

3.B.3 Water Quality Standard for Zone 3 – LaGrande Impoundment

Alder Dam defines the upstream limit of Zone 3. Water quality classifications designated by Ecology for Zone 3 are as follows: Aquatic Life Uses – core summer habitat; Recreational Uses – primary contact; Water Supply Uses – all (stock, agricultural, industrial and domestic water); Miscellaneous Uses – all (aesthetic, boating, commerce/navigation, harvesting and wildlife habitat).

The Nisqually Hydroelectric Project satisfies Standard B.2, Agency Recommendation, in Zone 3 – LaGrande Impoundment.

3.B.3 Water Quality Standard for Zone 3 – LaGrande Impoundment

Criterion	*Standard*	*Instructions*
B	2	Agency Recommendation: • If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation. • Provide a copy of the most recent Water Quality Certificate, including the date of issuance. • Identify any other agency recommendations related to water quality and explain their scientific or technical basis. • Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation.

The Alder Dam and powerhouse discharge flows directly into the LaGrande Impoundment of the Nisqually River at the upstream end of Zone 3. The Nisqually River in Zone 3 is not on the Washington State 303(d) list. See Zone 1 Section above for additional information.

Provide a copy of the most recent Water Quality Certificate, including the date of issuance.

See Zone 1 Section above.

Identify any other agency recommendations related to water quality and explain their scientific or technical basis.

No agency recommendations related to water quality were identified for this Zone.

Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

No compliance activities are required or suggested by the regulating agencies for this Zone.

3.B.4 Water Quality Standard for Zone 4 – Alder Impoundment

Alder Dam defines the downstream limit of Zone 4. Water quality classifications designated by Ecology for Zone 4 are as follows: Aquatic Life Uses – core summer habitat; Recreational Uses – extraordinary primary contact; Water Supply Uses – all (stock, agricultural, industrial and domestic water); Miscellaneous Uses – all (aesthetic, boating, commerce/navigation, harvesting and wildlife habitat).

The Nisqually Hydroelectric Project satisfies Standard B.2, Agency Recommendation, in Zone 4 – Alder Impoundment.

3.B.4 Water Quality Standard for Zone 4 – Alder Impoundment

Criterion	*Standard*	*Instructions*
B	2	Agency Recommendation: • If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation. • Provide a copy of the most recent Water Quality Certificate, including the date of issuance. • Identify any other agency recommendations related to water quality and explain their scientific or technical basis. • Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

If facility is located on a Water Quality Limited river reach, provide an agency letter stating that the facility is not a cause of such limitation.

Alder Dam impounds Alder reservoir of the Nisqually River at the downstream end of Zone 4. The Nisqually River continues upstream of the Alder Lake impoundment into the pristine wilderness of Mount Rainier National Park. The Nisqually River in Zone 4 was 303(d) listed in 2014 for a Category 5 impairment of polychlorinated biphenyls (PCBs) in fish tissues from Alder Lake (listing ID 78799). The listing is not a result of project operations and likely attributed to the historical town of Alder. Ecology's letter stating that the Project complies with its section 401 WQC also indicates that the Project is not a cause of the 303(d) listing and states that elevated levels of PCBs have been found in tissue sampling from other lakes within the Nisqually watershed (Appendix A). See Zone 1 Section above for additional information.

Provide a copy of the most recent Water Quality Certificate, including the date of issuance.

See Zone 1 Section above.

Identify any other agency recommendations related to water quality and explain their scientific or technical basis.

No agency recommendations related to water quality were identified for this Zone.

Describe all compliance activities related to the water quality related agency recommendations for the facility, including on-going monitoring, and how those are integrated into facility operations.

See Zone 1 Section above for a description of monitoring actions employed during periods of concerns for high water temperatures and limited flows. No additional compliance activities are required or suggested by the regulating agencies in addition to those prescribed by the NRCC and described above in the Zone 1 Section.

License Articles

License Article 420

3.C Upstream Fish Passage Standards

3.C.1 Upstream Fish Passage Standard for Zone 1 – Nisqually River

The Nisqually Hydroelectric Project satisfies Standard C.1, Not Applicable / De Minimis Effect, in Zone 1 –Nisqually River.

Criterion	*Standard*	*Instructions*
C	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Explain why the facility does not impose a barrier to upstream fish passage in the designated zone.

The upstream extent of Zone 1 is defined by the LaGrande powerhouse, which is the only Project facility in this Zone. The powerhouse is not a physical barrier to upstream fish passage. The powerhouse tailrace has minimal impact on upstream fish passage and is being addressed through License Article 417.

The extent of migratory fish reaching this location is limited since no substantial habitat, especially spawning habitat for salmon, is upstream of that location. Only 0.5 mile of the Bypassed Reach (Zone 2) is available to upstream migrating salmon. The few salmon species that travel to this upper extent of the mainstem might be temporary delayed by the attraction of the flow originating from the powerhouse.

Document available fish distribution data and the lack of migratory fish species in the vicinity.

Migratory fish species in Zone 1 include six salmon and trout species (Chinook, coho, chum, pink, steelhead/rainbow trout, and cutthroat trout) as well as sturgeon and lamprey. Chum and the two non-salmonids are usually not found within the close proximity of the Nisqually Project, but are much more prevalent near the mouth of the Nisqually River approximately 41 river miles downstream.

Annual monitoring for salmon and trout species in Zone 2 (Bypassed Reach) are conducted under License Articles 416/417. Visual monitoring for fish in the Nisqually River can be challenging due to high background turbidity from glacial origin headwaters and usually is limited to spring spawning steelhead trout when seasonal turbidity levels are low. Visual monitoring for fish in Zone 2, upstream of LaGrande powerhouse, is possible because of the lower water condition. Monitoring in Zone 2 indicates general use by salmon and trout species in close proximity to the Project, including Zone 1. Annual salmon population monitoring is conducted by the fisheries co-managers (the Nisqually Tribe and WDFW) in Zone 1 including steelhead redds and Chinook carcasses.

If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Migratory fish species have not been extirpated from Zone 1.

3. C.2 Upstream Fish Passage Standard for Zone 2 – Bypassed Reach

The Nisqually Hydroelectric Project satisfies Standard C.2, Agency Recommendation, in Zone 2 –Bypassed Reach.

Criterion	*Standard*	*Instructions*
C	2	Agency Recommendation: • Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent). • Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement. • Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

Identify the proceeding and source, date, and specifics of the agency recommendation applied (NOTE: there may be more than one; identify and explain which is most environmentally stringent).

Instream flows in the Bypassed Reach (Zone 2) are released according to License Article 403 of the 1997 FERC license (as amended by FERC Orders in August 31, 2001 and March 9, 2005). This is consistent with the Project's Washington Department of Ecology 401 Water Quality Certification. The minimum flow requirement for the Bypassed Reach is 30 cubic feet per second (cfs) as measured at the spillway plunge pool by USGS gage 12086000 (Nisqually River at LaGrande Dam, Washington). The 30 cfs minimum flow was established during relicensing based on a site-specific work that evaluated fish presence and continuous surface flow elevations in order to improve salmonid access and enhance rearing and spawning habitat in the Bypassed Reach (Tacoma 1993, 1994).

Pursuant to License Article 416, FERC approved the removal of an old construction dam ("Civil Structure") in an April 2000 Order (91 FERC ¶ 62,066 [2000]). Tacoma partially removed the Civil Structure in 2000 to improve fish passage for cutthroat trout in Zone 2, as documented in the 2000 License Article annual 416 report. The barrier was removed to facilitate fish passage and release substrate that had aggraded upstream. Due to the dynamic nature of the canyon (Bypassed Reach) there are currently no plans to alter any natural fish passage obstacles.

Explain the scientific or technical basis for the agency recommendation, including methods and data used. This is required regardless of whether the recommendation is or is not part of a Settlement Agreement.

The basis for the 30 cfs flow requirement is described in detail under Ecological Flow Standards for Zone 2. Minimum flows in the Zone 2 were determined during relicensing based on considerations including fishery resources, and Ecology requirements for beneficial use. They were established to provide continuous surface flow, resulting in a wetted channel year round.

This improves salmonid access and enhances rearing and spawning habitat. In addition, seasonally high flow and flood spills from the LaGrande Impoundment provide higher flows through the Bypassed Reach, supporting habitat forming processes (e.g., sediment transport). There are no fish bearing tributaries in Zone 2.

There is potential for salmon and steelhead from the lower river to access the lower ¼ of the Bypassed Reach (below the natural cascades at Boulder Garden Falls). Even with 30 cfs minimum flow, the Boulder Garden Falls is at least a partial barrier to upstream fish passage. Under higher flow (spill) conditions, small numbers of salmonids may access the upper ¾ of the Bypassed Reach (Tacoma 1993). However, even if those fish become stranded, the Bypassed Reach is not considered a substantial threat to salmonid production in the Nisqually River (Tacoma 1993).

The upper ¾ of the Bypassed Reach is a confined canyon that provides limited habitat opportunity. Substrate in this area is typically too coarse for spawning (cobble and coarser), and there is limited riparian and no off channel habitat. There also are at least six fish passage barriers/obstacles, including Boulder Garden Falls, that limit salmonid access under minimum flow condition. While some spawning occurs in this area, the confined channel is not conducive to gravel accumulation (Tacoma 1991). This condition likely predates the Project (Tacoma 1991). WDFW conducted a fish and habitat field assessment in this portion of the Bypassed Reach in 2016 and concluded that it does not represent suitable salmonid habitat at this time (WDFW 2016).

Since 2017, Tacoma has been actively working with the NRCC to reduce the focus on fish habitat in Zone 2, which is consistent with the Tribe's position that habitat in this reach is marginal (see Ecological Flow, Zone 2) and WDFW's determinations following its 2016 field assessment. This includes de-emphasizing and/or eliminating requirements for enhancements that would attract salmon to the reach. This conversation is ongoing.

Describe any provisions for fish passage monitoring or effectiveness determinations that are part of the agency recommendation, and how these are being implemented.

Annual monitoring for salmon and trout species in Zone 2 (Bypassed Reach) are conducted under License Articles 416/417. Zone 2 between the powerhouse and the Boulder Garden Falls (lower ¼ of the Zone) is surveyed for migratory salmonids each fall and spring to verify the barrier status at the Boulder Garden falls. The timing of the survey is designed to coincide with peak spawning of Chinook, pink, and steelhead. Past fish monitoring under License Articles 416/417 in the upper zone (above Boulder Garden Falls) did not reveal presence of adult salmon above the falls, as documented in annual reports to FERC. Fish monitoring is no longer conducted in the upper zone.

Requirements for flow monitoring are described in detail under Ecological Flow Standards for Zone 2.

3.C.3 Upstream Fish Passage Standard for Zone 3 – LaGrande Impoundment

The Nisqually Hydroelectric Project satisfies Standard C.1, Not Applicable / De Minimis Effect, in Zone 3 –LaGrande Impoundment.

Criterion	*Standard*	*Instructions*
C	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Explain why the facility does not impose a barrier to upstream fish passage in the designated zone.

As described above, the upper ¾ of the Bypassed Reach includes a number of barriers to upstream fish passage. Therefore LaGrande Dam is not itself a barrier to upstream fish passage.

Construction of LaGrande Dam inundated a deep, narrow, bedrock canyon that contained boulder-cascades, log jams, and a series of waterfalls. Pre-inundation surveys in 1942 documented that the tallest of the waterfalls in the reach, at approximately RM 43, was 25 feet in height (Tacoma 1991). This is about half a mile upstream of the current LaGrande Dam. These falls would have been the absolute upstream limit for potential anadromous fish distribution, and both access and habitat would likely have been very limited in the half mile downstream of the fall. Therefore, it is unlikely that the dam represents a significant alteration with respect to upstream fish passage in Zone 3.

There are no fish-bearing tributaries to the LaGrande Impoundment.

There are no barriers or impediments to passage for resident fish within Zone 3.

Document available fish distribution data and the lack of migratory fish species in the vicinity.

The LaGrande Impoundment is small and has a short retention time. Because of this, it has never been specifically managed for fishery resources and there are no plans to do so in the future (Tacoma 1991).

There are resident fish including cutthroat trout in the LaGrande Impoundment. As described above, construction of LaGrande Dam inundated a deep, narrow bedrock canyon. The pre-inundation landscape would likely have been very limited and would have included multiple barriers to both upstream and downstream passage. In comparison with anadromous fish in the downstream zones, and resident fish upstream in the Alder Impoundment (and upper watershed), there has been little focus on fish in Zone 3.

If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Based on the pre-inundation conditions in Zone 3, while there is no upstream passage into the LaGrande Impoundment, it is unlikely that migratory fish species have been extirpated from it.

3. C.4 Upstream Fish Passage Standard for Zone 4 – Alder Impoundment

The Nisqually Hydroelectric Project satisfies Standard C.1, Not Applicable / De Minimis Effect, in Zone 4 –Alder Impoundment.

Criterion	*Standard*	*Instructions*
C	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to upstream fish passage in the designated zone. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Explain why the facility does not impose a barrier to upstream fish passage in the designated zone.

Pre-inundation surveys in 1942 documented a number of water falls in the reach that is now the LaGrande Impoundment, the largest of which was 25 feet in height (Tacoma 1991). These falls would have been the absolute upstream limited for potential anadromous fish distribution. Therefore the Alder Dam does not impose an upstream barrier to anadromous where passage had previously existed.

The facility does not impose upstream barriers to fish from the Alder Impoundment to access the upper Nisqually River or its tributaries. While there is no upstream passage for resident fish between LaGrande and Alder impoundments, fishery resources in the LaGrande Impoundment are minimal and have never been specifically managed. Therefore, the lack of upstream passage from LaGrande to Alder Impoundment is considered to be insignificant to fish populations in the Alder Impoundment.

Document available fish distribution data and the lack of migratory fish species in the vicinity.

The Alder Impoundment includes resident or adfluvial salmonids including kokanee, rainbow, and cutthroat trout. These are documented annually through creel surveys required under License Article 413. A number of other game fish have been identified during creel surveys including large and smallmouth bass, yellow perch, black and white crappie, and channel catfish.

If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

The Alder Impoundment is upstream of both the historical and current extent of anadromous fish distribution. Migratory fish species have not been extirpated from Zone 4.

References

Tacoma (Tacoma Public Utilities). 1991. Application for new license major existing project. December 23, 1991.

Tacoma (Tacoma Public Utilities). 1993. Final Response to FERC request for additional information of June 4, 1992. Prepared by Harza Northwest. February 22, 1993.

Tacoma (Tacoma Public Utilities). 1994. Final Response to FERC request for additional information of September 24, 1993 and amendment to the December 26, 1991 application for new license. Prepared by Harza Northwest. January 6, 1994.

WDFW (Washington Department of Fish and Wildlife). 2016. Nisqually Bypass Reach – LaGrande Dam to LaGrande Powerhouse – Habitat Typing of Composition and Quality.

License Articles and Links

License Article 403 (see Article 410 Annual Report)

License Article 413 Annual Report
https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14857994

License Article 416/417
https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14766303

3.D Downstream Fish Passage and Protection Standards

3.D.1. Downstream Fish Passage Standard for Zone 1 – Nisqually River

The Nisqually Hydroelectric Project satisfies D.1, Not Applicable / De Minimis Effect, in Zone 1 – Nisqually River.

Criterion	*Standard*	*Instructions*
D	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines).

The LaGrande powerhouse discharges flow from the power tunnel into the Nisqually River at the upstream end of Zone 1. There are no physical barriers to downstream passage from the powerhouse or in the reach downstream of it. Fish moving downstream through Zone 1, below the powerhouse, do not pass through any Nisqually Project facilities.

Flows were set to benefit Nisqually River salmon and aquatic community by increasing summer flows in contrast to upstream or historical flows. Summer flows in Zone 1 are augmented with deep-drawn water from the LaGrande Impoundment (Zone 3), which increases overall flow volume and decreases instream temperatures during the summer months. This benefits juvenile salmonids migrating downstream through Zone 1.

For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles.

The facility (LaGrande powerhouse) is required to operate to maintain minimum instream flows in Zone 1, which were based in part on the rearing requirements for all species of juvenile salmonids present in the Nisqually River. It does not negatively affect downstream fish access or otherwise contribute adversely to the sustainability of those fish populations.

Flows entering Zone 1 (combined from LaGrande powerhouse and Bypassed Reach) are higher than the total inflow to the Project from the upper Nisqually River during the summer months (Figure 13). This water management strategy results in improved summer flows in the entire

Zone 1 (mouth of the Nisqually River to the powerhouse) through both increased quantity and decreased temperature of water relative to the historical condition. This benefits juvenile salmonids migrating downstream through Zone 1.

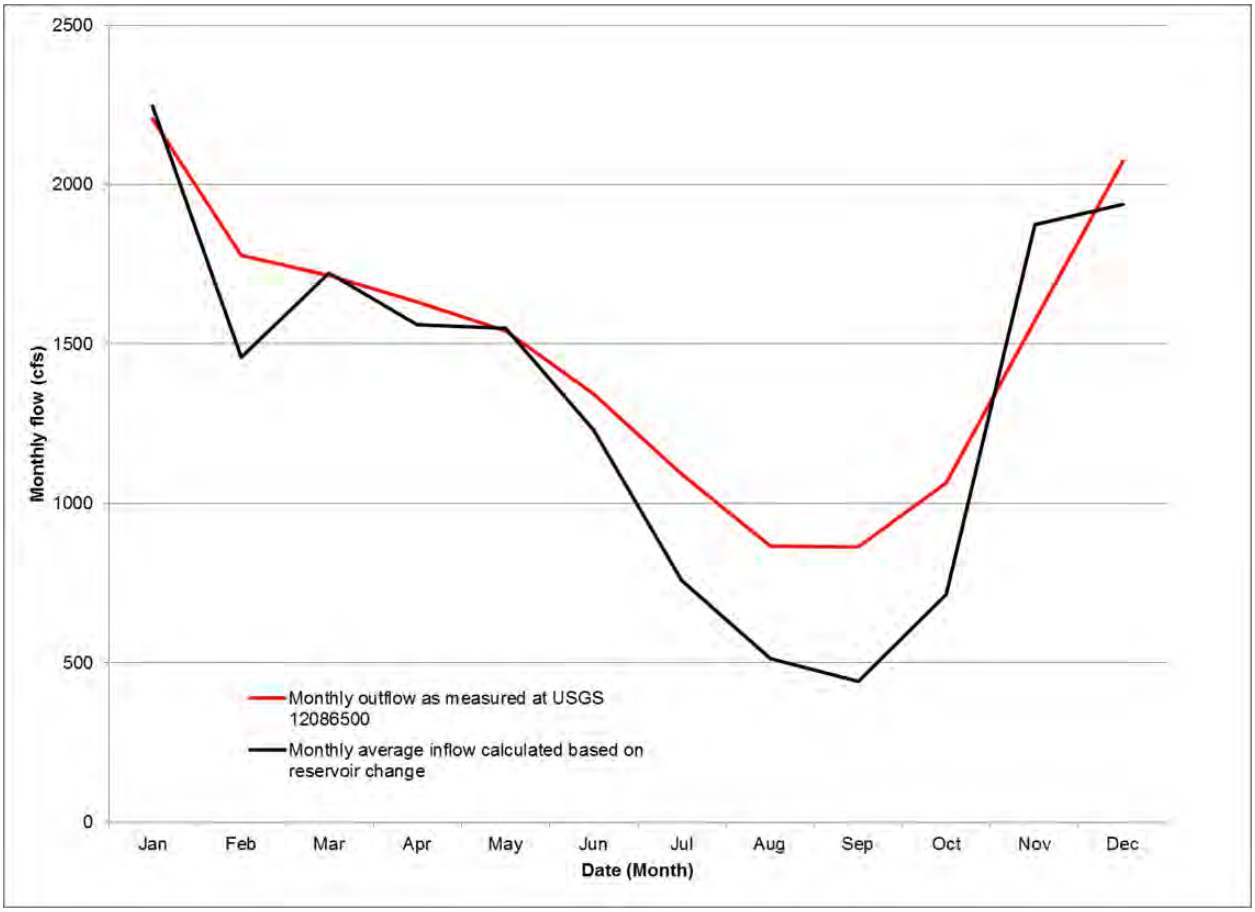

Figure 13. Nisqually River Monthly Outflow vs. Average Inflow.

Document available fish distribution data and the lack of migratory fish species in the vicinity.

Migratory fish species in Zone 1 include six salmon and trout species (Chinook, coho, chum, pink, steelhead/rainbow trout, and cutthroat trout) as well as sturgeon and lamprey. Chum and the two non-salmonids are usually not found within the close proximity of the Project but much more prevalent near the mouth of the Nisqually River approximately 41 river miles downstream.

Annual monitoring for salmon and trout species in Zone 2 (Bypassed Reach) is conducted under License Articles 416/417. Visual monitoring for fish in the Nisqually River can be challenging due to high background turbidity from glacial origin headwaters and usually is limited to spring spawning steelhead trout when seasonal turbidity levels are low. Visual monitoring for fish in Zone 2, upstream of LaGrande powerhouse, is possible because of the lower water condition. Monitoring in Zone 2 indicates general use by salmon and trout species in close proximity to the Project, including Zone 1. Annual salmon population monitoring is

conducted by the fisheries co-managers (the Nisqually Tribe and WDFW) in Zone 1 including steelhead redds and Chinook carcasses.

If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Migratory fish species have not been extirpated from Zone 1.

3.D.2. Downstream Fish Passage Standard for Zone 2 – Bypassed Reach

The Nisqually Hydroelectric Project satisfies Standard D.1, Not Applicable / De Minimis Effect, in Zone 2 – Bypassed Reach.

Criterion	*Standard*	*Instructions*
D	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines).

Instream flows in the Bypassed Reach (Zone 2) are released according to License Article 403 of the 1997 FERC license (as amended by FERC Orders in August 31, 2001 and March 9, 2005). This is consistent with the Project's Washington Department of Ecology 401 Water Quality Certification. The minimum flow requirement for the Bypassed Reach is 30 cfs as measured at the spillway plunge pool by USGS gage 12086000 (Nisqually River at LaGrande Dam, Washington). The 30 cfs minimum flow was established during relicensing based on site-specific work that evaluated fish presence and continuous surface flow elevations in order to improve salmonid access and enhance rearing and spawning habitat in the Bypassed Reach (Tacoma 1993, 1994). This directly supports downstream fish passage in Zone 2. Prior to relicensing, there was no minimum flow requirement for the Bypassed Reach. Any water flow in this reach was provided by seepage from the LaGrande Impoundment, with occasional surface flow originating from spills at LaGrande Dam.

Pursuant to License Article 416, FERC approved the removal of an old construction dam ("Civil Structure") in an April 2000 Order (91 FERC ¶ 62,066 [2000]). Tacoma partially removed the Civil Structure in 2000 to improve fish passage for cutthroat trout in Zone 2, as documented in the License Article 416 2000 annual report. The barrier was removed to facilitate fish passage and release substrate that had aggraded upstream.

Fish moving downstream through Zone 2, downstream of LaGrande Dam, do not pass through any Project facilities. The powerhouse at the upstream end of Zone 1 discharges the bypassed flow from Zone 3.

Although the facility is managed to support downstream fish passage in Zone 2, because of LaGrande Dam, juvenile fish moving downstream though Zone 2 would be limited to those fish produced within it. In a May 2016 snorkel survey of the entire 1.8 mile Zone 2 reach, only 6 juvenile salmonids (resident rainbow trout) were observed (WDFW 2016). Due to low habitat suitability and access limitations in Zone 2 generally, juvenile production especially of migratory fish in this reach is very low.

For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles.

LaGrande Dam is required to operate to maintain minimum instream flows in Zone 2, which maintains a year-round wetted channel and supports downstream passage for all species of juvenile salmonids present in the Nisqually River. It does not negatively affect downstream fish access or otherwise contribute adversely to the sustainability of those fish populations.

Document available fish distribution data and the lack of migratory fish species in the vicinity.

The lower ¼ of the Bypassed Reach is accessible to migratory salmonids typically found in close proximity to the Nisqually Project: Chinook, coho, pink, steelhead/rainbow trout, and cutthroat trout.

License Article 416 requires annual monitoring for salmon and trout species in Zone 2 (Bypassed Reach), which is conducted by Tacoma Power and the fisheries co-managers (the Nisqually Tribe and WDFW). Monitoring in Zone 2 is focused on Chinook and pink salmon (visual counts) in the fall, and steelhead (redd surveys) in the spring (Figure 14), but includes visual counts for other species when present.

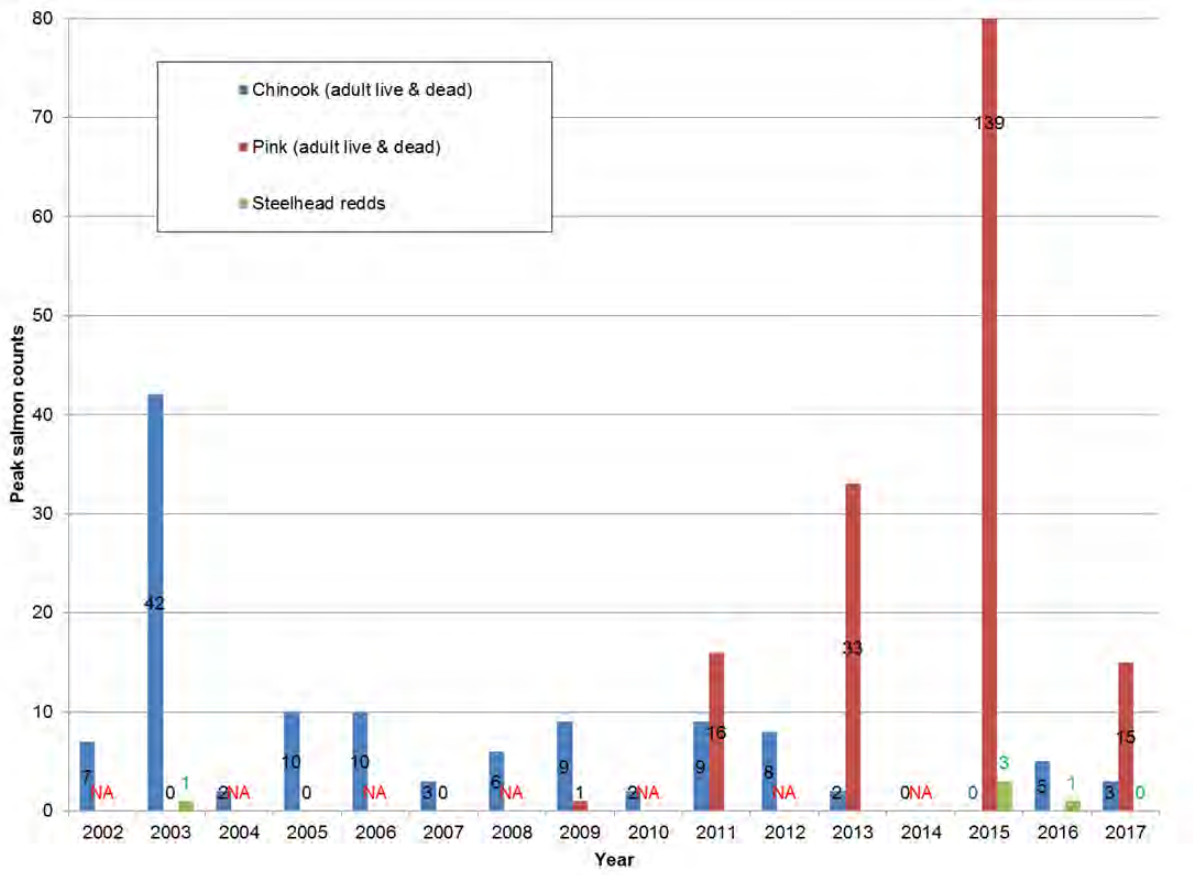

Figure 14. Counts of Adult Live and Dead Chinook and Pink Salmon, and Steelhead Redds in Bypassed Reach 2002-2017.

If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Migratory fish species have not been extirpated from Zone 2.

3.D.3. Downstream Fish Passage Standard for Zone 3 – LaGrande Impoundment

The Nisqually Hydroelectric Project satisfies D.1 Not Applicable / De Minimis Effect, in Zone 3 – LaGrande Impoundment.

Criterion	*Standard*	*Instructions*
D	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines).

Construction of LaGrande Dam inundated a deep, narrow, bedrock canyon that contained boulder-cascades, log jams, and a series of waterfalls. Pre-inundation surveys in 1942 documented that the tallest of the waterfalls in the reach, at approximately RM 43, was 25 feet in height (Tacoma 1991). This is about half a mile upstream of the current LaGrande Dam. These falls would have been the absolute upstream limit for potential anadromous fish distribution, and both access and habitat would likely have been very limited in the half mile downstream of the falls. Therefore, it is unlikely that the dam represents a significant alteration with respect to the lack of anadromous fish in Zone 3 or to the lack of downstream passage from the LaGrande Impoundment to the Bypass Reach.

LaGrande Dam and the powerhouse functionally block downstream passage for any resident fish in Zone 3 to both downstream Zones. Resident fish moving downstream through the turbines or over the spillway have a very low likelihood of survival.

For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles.

Although juvenile fish cannot move downstream from Zone 3, historically the falls in the canyon were absolute barriers to upstream migration and potentially significant barriers to downstream fish movement through what is now the LaGrande Impoundment. Resident fish (e.g., cutthroat trout) in the impoundment are able to successfully complete their life cycle entirely within the LaGrande Impoundment; the lack of downstream passage does not contribute adversely to the sustainability of resident fish in Zone 3 or other Project Zones.

Document available fish distribution data and the lack of migratory fish species in the vicinity.

The LaGrande Impoundment is small and has a short retention time. Because of this, it has never been specifically managed for fishery resources and there are no plans to do so in the future (Tacoma 1991).

There are resident fish including cutthroat trout in the LaGrande Impoundment. As described above, construction of LaGrande Dam inundated a deep, narrow bedrock canyon. The pre-inundation landscape would likely have been very limited and would have included multiple barriers to both upstream and downstream passage. In comparison with anadromous fish in the downstream zones, and resident fish upstream in the Alder Impoundment (and upper watershed), there has been little focus on fish in Zone 3.

If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Based on the pre-inundation conditions in Zone 3, while there is no passage in to and out of the LaGrande Impoundment, it is unlikely that migratory fish species have been extirpated from it.

3.D.4. Downstream Fish Passage Standard for Zone 4 – Alder Impoundment

The Nisqually Hydroelectric Project satisfies D.1, Not Applicable / De Minimis Effect, in Zone 4 – Alder Impoundment.

Criterion	*Standard*	*Instructions*
D	1	Not Applicable / De Minimis Effect: • Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines). • For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles. • Document available fish distribution data and the lack of migratory fish species in the vicinity. • If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

Explain why the facility does not impose a barrier to downstream fish passage in the designated zone, considering both physical obstruction and increased mortality relative to natural downstream movement (e.g., entrainment into hydropower turbines).

Pre-inundation surveys in 1942 documented a number of water falls in the reach that is now the LaGrande Impoundment, the largest of which was 25 feet in height (Tacoma 1991). These falls would have been the absolute upstream limited for potential anadromous fish distribution. Therefore the Alder Dam does not impose an upstream barrier to anadromous where passage had previously existed.

Alder Dam functionally blocks downstream passage for any resident fish from the Alder Impoundment to the LaGrande Impoundment. Resident fish moving downstream through the turbines or over the spillway have a very low likelihood of survival.

The facility does not impose downstream barriers to fish from the upper Nisqually River or its tributaries to access the Alder Impoundment.

For riverine fish populations that are known to move downstream, explain why the facility does not contribute adversely to the sustainability of these populations or to their access to habitat necessary for successful completion of their life cycles.

Resident and adfluvial fish in the Alder Impoundment are able to successfully complete their life cycle entirely upstream of the Alder Dam, including the Impoundment, the upper Nisqually River, and its tributaries. Lack of downstream passage does not contribute adversely to the sustainability of resident fish and adfluvial fish in Zone 4 or in other Project Zones.

Document available fish distribution data and the lack of migratory fish species in the vicinity.

The Alder Impoundment includes resident or adfluvial salmonids including kokanee, rainbow, and cutthroat trout. These are documented annually through creel surveys required under License Article 413. A number of other game fish have been identified during creel surveys including large and smallmouth bass, yellow perch, black and white crappie, and channel catfish.

If migratory fish species have been extirpated from the area, explain why the facility is or was not the cause of this.

The Alder Impoundment is upstream of both the historical and current extent of anadromous fish distribution. Migratory fish species have not been extirpated from Zone 4.

References

Tacoma (Tacoma Public Utilities). 1991. Application for new license major existing project. December 23, 1991.

Tacoma (Tacoma Public Utilities). 1993. Final Response to FERC request for additional information of June 4, 1992. Prepared by Harza Northwest. February 22, 1993.

Tacoma (Tacoma Public Utilities). 1994. Final Response to FERC request for additional information of September 24, 1993 and amendment to the December 26, 1991 application for new license. Prepared by Harza Northwest. January 6, 1994.

License Articles and Links

License Article 403 (see Article 410 Annual Report)

License Article 413
https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14857994

License Article 416/417
https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14766303

3.E Shoreline and Watershed Protection Standards

3.E.1 Shoreline and Watershed Protection Standard for Zone 1 – Nisqually River

The Nisqually Hydroelectric Project satisfies Standard E-2, Agency Recommendation in Zone 1 – Nisqually River.

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility (e.g., Shoreline Management Plans). • Provide documentation that indicates the facility is in full compliance with any agency recommendations or management plans that are in effect.

Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility (e.g., Shoreline Management Plans).

Article 423 – Wildlife Management Plan of the FERC license applies to all zones, including Zone 1 – Nisqually River. The plan was created in consultation with the Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and the Nisqually Tribe. The activities in the plan protect, mitigate and enhance shoreline surrounding the project. There is not a specific shoreline management plan for the project.

The plan includes:

- descriptions of the land parcels in the wildlife management areas
- wildlife habitat management prescriptions
- specific goals and objectives that includes measurable habitat evaluation
- monitoring and evaluating the effectiveness of the measures
- a schedule for reporting and revising the plan as needed
- a schedule for implementing the measures

Tacoma acquired and reserved more than 3,350 acres of land in the Project vicinity that is designated as wildlife habitat, called the Nisqually Project Wildlife Management Area (Figure 14). This area includes parcels of shoreline on both sides of the Nisqually River downstream of LaGrande powerhouse in Zone 1.

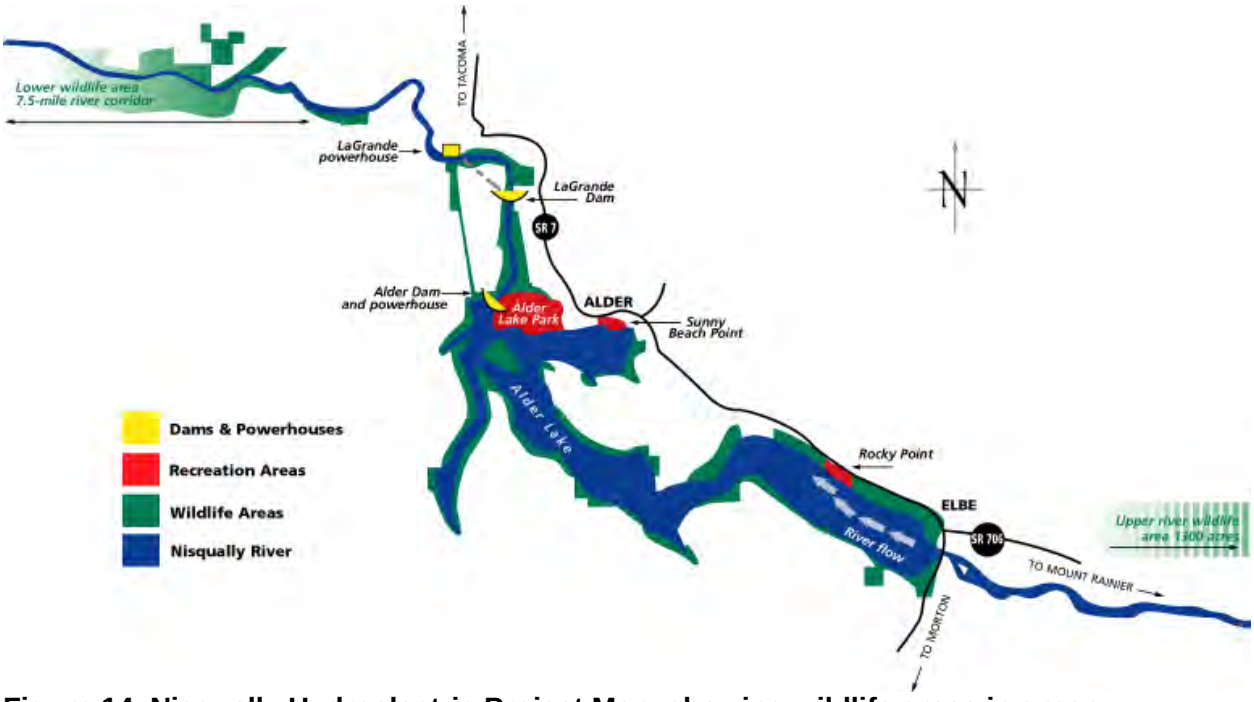

Figure 14. Nisqually Hydroelectric Project Map, showing wildlife areas in green.

Provide documentation that indicates the facility is in full compliance with any agency recommendations or management plans that are in effect.

The Project is in compliance with Article 423 – Wildlife Management Plan of the FERC license, which directs the protection, mitigation, and enhancement of shoreline in Zone 1. Each year Tacoma continues to implement the wildlife management measures contained within the plan and submits an annual report detailing the status of the measures to FERC.

3.E.2 Shoreline and Watershed Protection Standard for Zone 2 – Bypassed Reach

The Nisqually Hydroelectric Project satisfies Standard E-2, Agency Recommendation, in Zone 2 – Bypassed Reach.

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility (e.g., Shoreline Management Plans). • Provide documentation that indicates the facility is in full compliance with any agency recommendations or management plans that are in effect.

Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility (e.g., Shoreline Management Plans).

Article 423 – Wildlife Management Plan of the FERC license applies to all zones, including Zone 2 – Bypassed Reach. The plan was created in consultation with the Washington Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and the Nisqually Tribe. The activities in the plan protect, mitigate and enhance shoreline surrounding the project. There is not a specific shoreline management plan for the project.

The plan includes:

- descriptions of the land parcels in the wildlife management areas
- wildlife habitat management prescriptions
- specific goals and objectives that includes measurable habitat evaluation
- monitoring and evaluating the effectiveness of the measures
- a schedule for reporting and revising the plan as needed
- a schedule for implementing the measures

Tacoma acquired and reserved more than 3,350 acres of land in the Project vicinity (see Figure 14 in Zone 1 Section above) that is designated as wildlife habitat, called the Nisqually Project Wildlife Management Area. This area includes parcels of shoreline on both sides of the Bypassed Reach in Zone 2.

Provide documentation that indicates the facility is in full compliance with any agency recommendations or management plans that are in effect.

The Project is in compliance with Article 423 – Wildlife Management Plan of the FERC license, which directs the protection, mitigation, and enhancement of shoreline in Zone 2. Each year Tacoma continues to implement the wildlife management measures contained within the plan and submits an annual report detailing the status of the measures to FERC.

3.E.3 Shoreline and Watershed Protection Standard for Zone 3 – LaGrande Impoundment

The Nisqually Hydroelectric Project satisfies Standard E -2, Agency Recommendation, in Zone 3 – LaGrande Impoundment.

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility (e.g., Shoreline Management Plans). • Provide documentation that indicates the facility is in full compliance with any agency recommendations or management plans that are in effect.

Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility (e.g., Shoreline Management Plans).

Article 423 – Wildlife Management Plan of the FERC license applies to all zones, including Zone 3 – LaGrande Impoundment. The activities in this plan protect, mitigate and enhance shoreline surrounding the project. There is not a specific shoreline management plan for the project.

A shoreline buffer was established around the entire perimeter of LaGrande Impoundment as part of the Nisqually Project settlement agreement. The buffers in most of the undeveloped areas exceed 200 feet and/or abut public lands that offer increase buffer functions.

The Wildlife Management Plan includes:

- descriptions of the land parcels in the wildlife management areas
- wildlife habitat management prescriptions
- specific goals and objectives that includes measurable habitat evaluation
- monitoring and evaluating the effectiveness of the measures
- a schedule for reporting and revising the plan as needed
- a schedule for implementing the measures

Tacoma acquired and reserved more than 3,350 acres of land in the Project vicinity that is designated as wildlife habitat, called the Nisqually Project Wildlife Management Area (see Figure 14 in Zone 1 Section above). This area includes parcels of shoreline on both sides of the Bypassed Reach in Zone 3.

Provide documentation that indicates the facility is in full compliance with any agency recommendations or management plans that are in effect.

The Project is in compliance with Article 423 – Wildlife Management Plan of the FERC license, which directs the protection, mitigation, and enhancement of shoreline in Zone 3. Each year Tacoma continues to implement the wildlife management measures contained within the plan and submits an annual report detailing the status of the measures to FERC.

3.E.4 Shoreline and Watershed Protection Standard for Zone 4 – Alder Impoundment

The Nisqually Hydroelectric Project satisfies Standard E -2, Agency Recommendation, in Zone 4 –Alder Impoundment.

Criterion	*Standard*	*Instructions*
E	2	Agency Recommendation: • Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility (e.g., Shoreline Management Plans). • Provide documentation that indicates the facility is in full compliance with any agency recommendations or management plans that are in effect.

Provide copies or links to any agency recommendations or management plans that are in effect related to protection, mitigation, or enhancement of shoreline surrounding the facility (e.g., Shoreline Management Plans).

Article 423 – Wildlife Management Plan of the FERC license applies to all zones, including Zone 4 – Alder Impoundment. The activities in this plan protect, mitigate and enhance shoreline surrounding the project. There is not a specific shoreline management plan for the project.

A shoreline buffer was established around the entire perimeter of Alder Impoundment as part of the Nisqually Project settlement agreement. The buffer widths vary, but they are typically at least 100 feet wide along the undeveloped shoreline areas. The buffers in most of the undeveloped areas exceed 200 feet and/or abut public lands that offer increased buffer functions. All but the shoreline adjacent to previously developed areas are classified as wildlife lands and managed under the Wildlife Management Plan. The remaining shoreline adjacent to developed areas are managed to allow low impact recreation and assure minimal impacts to habitat, water quality, and aesthetics.

The Wildlife Management Plan includes:

- descriptions of the land parcels in the wildlife management areas
- wildlife habitat management prescriptions
- specific goals and objectives that includes measurable habitat evaluation
- monitoring and evaluating the effectiveness of the measures
- a schedule for reporting and revising the plan as needed
- a schedule for implementing the measures

Tacoma acquired and reserved more than 3,350 acres of land in the Project vicinity (see Figure 14 in Zone 1 Section above)) that is designated as wildlife habitat, called the Nisqually Project Wildlife Management Area. This area includes parcels of shoreline on both sides of the Bypassed Reach in Zone 4.

Provide documentation that indicates the facility is in full compliance with any agency recommendations or management plans that are in effect.

The Project is in compliance with Article 423 – Wildlife Management Plan of the FERC license, which directs the protection, mitigation, and enhancement of shoreline in Zone 4. Each year Tacoma continues to implement the wildlife management measures contained within the plan and submits an annual report detailing the status of the measures to FERC.

License Articles and Links

License Article 423

License Article 423 Annual Report
https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14876820

3.F Threatened and Endangered Species Standards

3.F.1 Threatened and Endangered Species Standard in Zone 1 – Nisqually River

The Nisqually Hydroelectric Project satisfies Standard F.3, Recovery Planning and Action, in Zone 1 – Nisqually River.

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents.

The Project area falls within the historic range of the following threatened or endangered species:

- Puget Sound Chinook salmon – Federal Threatened (Puget Sound Evolutionary Significant Unit (ESU)), State candidate
- Puget Sound Steelhead Trout - Federal Threatened (Puget Sound Evolutionary Significant Unit (ESU)), State candidate
- Gray wolf – Federal Endangered, State Endangered
- Grizzly bear – Federal Threatened, State Endangered
- Northern spotted owl – Federal Threatened, State Endangered
- Marbled murrelet – Federal Threatened, State Candidate

Listed species believed to or known to occur in Washington can be found at https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=WA&status=listed. Only the species above fall within the historic range of the species on the complete list.

Chinook salmon were listed under the federal ESA in 1999, and Puget Sound Steelhead in 2007, after the FERC license for the Project was issued. Both Chinook and steelhead trout are present downstream of the Project. The Chinook salmon population in the Nisqually River is heavily supported by tribal hatchery production; however, the hatchery fish are not considered critical to recovery of the species. Bull trout (Federally Threatened – Coterminous US DPS) are thought to use some areas of the lower Nisqually River and intertidal area for feeding, but are generally not known to be present in significant numbers in the river, nor have been documented in the Nisqually above River Mile 6 (South Puget Sound Salmon Recovery Group 2004).

The listed mammalian species (gray wolf and grizzly bear) and avian species (northern spotted

owl and marbled murrelet) have never been documented in the Project area in recent history. Suitable habitat for marbled murrelet exists on project wildlife lands and suitable habitat for spotted owls occurs near the wildlife lands. However, Tacoma Power conducted surveys for both species in May 2005 which did not identify marbled murrelet presence and determined its presence to be unlikely. All suitable habitat is protected as a condition of the Wildlife Management Plan; therefore, project operations would not impact these species' habitat requirements.

Article 425 – Threatened and Endangered Species Protection Plan of the FERC license directs Tacoma Power to protect federally listed animals and their habitats from land-disturbing activities. The plan typically applies to land use actions such as construction or habitat enhancement measures that could impact listed species. No such actions have occurred since Tacoma Power's LIHI recertification in 2013 that required Tacoma Power to implement provisions of the threatened and endangered species protection plan. The Project is in compliance with Article 425 – Threatened and Endangered Species Protection Plan of the FERC license.

None of the existing recovery plans for species within the Project area contain recommendations specific to the Project, except for Chinook Salmon and steelhead trout. The Nisqually Fall Chinook Salmon Recovery Plan (2004) and the draft Steelhead Recovery Plan (2014) both stipulate the permanence of the minimum flows which benefit both species as well as include specific actions that pertain to the Project. There have been no recommendations from agencies for Tacoma to provide any additional protection for other listed species.

Recovery Action 1.3.2.5 of the Chinook Recovery Plan states: "Investigate potential for transport logs from above Alder/LaGrande dams to downstream areas (LWD recruitment)." Action 2.3.1 of the Draft Steelhead Recovery Plan states that implementers of the plan should "work with Tacoma Power to find ways to transport logs from Alder/LaGrande Dams to the mainstem to supplement large woody material recruitment to mainstem reaches immediately downstream of the dams." To date Tacoma Power has supplied large woody debris from the Alder reservoir to instream restoration projects in the lower basin several times. Several hundred pieces of large woody debris that were obtained free of charge from Tacoma Power have been used in salmon restoration projects in tributaries to the Nisqually such as Mashel River, Ohop Creek, and Muck Creek.

Action 1.1.2.2 of the Chinook Recovery Plan states: "Secure Tacoma Public Utilities (Tacoma Power) and City of Centralia permanent protection commitments in the Wilcox Reach (Nisqually 5), Middle Reach (Nisqually 6), Upper Reach (Nisqually 7A), and Upper Reach (Nisqually 7B)." Tacoma Power has been committed to permanent protection and maintenance of sixteen miles of lower river shoreline for the sole benefit to fish and wildlife.

Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

The Nisqually Project has not received authority to incidentally take listed species. NOAA Fisheries does not currently consider the Project a high priority for Section 7 consultation for Chinook salmon and steelhead trout.

3. F.2 Threatened and Endangered Species Standards in Zone 2 – Bypassed Reach

The Nisqually Hydroelectric Project satisfies Standard F.3, Recovery Planning and Action, in Zone 2 – Bypassed Reach.

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents.

The Project area falls within the historic range of the following threatened or endangered species:

- Puget Sound Chinook salmon – Federal Threatened (Puget Sound Evolutionary Significant Unit (ESU)), State candidate
- Puget Sound Steelhead Trout - Federal Threatened (Puget Sound Evolutionary Significant Unit (ESU)), State candidate
- Gray wolf – Federal Endangered, State Endangered
- Grizzly bear – Federal Threatened, State Endangered
- Northern spotted owl – Federal Threatened, State Endangered
- Marbled murrelet – Federal Threatened, State Candidate

Listed species believed to or known to occur in Washington can be found at https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=WA&status=listed. Only the species above fall within the historic range of the species on the complete list.

Chinook salmon were listed under the federal ESA in 1999, and Puget Sound Steelhead in 2007, after the FERC license for the Project was issued. Both Chinook and steelhead trout are present downstream of the Project. The Chinook salmon population in the Nisqually River is heavily supported by tribal hatchery production; however, the hatchery fish are not considered critical to recovery of the species. Bull trout (Federally Threatened – Coterminous US DPS) are thought to use some areas of the lower Nisqually River and intertidal area for feeding, but are generally not known to be present in significant numbers in the river, nor have been documented in the Nisqually above River Mile 6 (South Puget Sound Salmon Recovery Group 2004).

The listed mammalian species (gray wolf and grizzly bear) and avian species (northern spotted owl and marbled murrelet) have never been documented in the Project area in recent history.

Suitable habitat for marbled murrelet exists on project wildlife lands and suitable habitat for spotted owls occurs near the wildlife lands. However, Tacoma Power conducted surveys for both species in May 2005 which did not identify marbled murrelet presence and determined its presence to be unlikely. All suitable habitat is protected as a condition of the Wildlife Management Plan; therefore, project operations would not impact these species' habitat requirements.

Article 425 – Threatened and Endangered Species Protection Plan of the FERC license directs Tacoma Power to protect federally listed animals and their habitats from land-disturbing activities. The plan typically applies to land use actions such as construction or habitat enhancement measures that could impact listed species. No such actions have occurred since Tacoma Power's LIHI recertification in 2013 that required Tacoma Power to implement provisions of the threatened and endangered species protection plan. The Project is in compliance with Article 425 – Threatened and Endangered Species Protection Plan of the FERC license.

None of the existing recovery plans for species within the Project area contain recommendations specific to the Project, except for Chinook Salmon and steelhead trout. The Nisqually Fall Chinook Salmon Recovery Plan (2004) and the draft Steelhead Recovery Plan (2014) both stipulate the permanence of the minimum flows which benefit both species as well as include specific actions that pertain to the Project. There have been no recommendations from agencies for Tacoma to provide any additional protection for other listed species.

Recovery Action 1.3.2.5 of the Chinook Recovery Plan states: "Investigate potential for transport logs from above Alder/LaGrande dams to downstream areas (LWD recruitment)." Action 2.3.1 of the Draft Steelhead Recovery Plan states that implementers of the plan should "work with Tacoma Power to find ways to transport logs from Alder/LaGrande Dams to the mainstem to supplement large woody material recruitment to mainstem reaches immediately downstream of the dams." To date Tacoma Power has supplied large woody debris from the Alder reservoir to instream restoration projects in the lower basin several times. Several hundred pieces of large woody debris that were obtained free of charge from Tacoma Power have been used in salmon restoration projects in tributaries to the Nisqually such as: Mashel River, Ohop Creek, and Muck Creek.

Action 1.1.2.2 of the Chinook Recovery Plan states: "Secure Tacoma Public Utilities (Tacoma Power) and City of Centralia permanent protection commitments in the Wilcox Reach (Nisqually 5), Middle Reach (Nisqually 6), Upper Reach (Nisqually 7A), and Upper Reach (Nisqually 7B)." Tacoma Power has been committed to permanent protection and maintenance of 16 miles of lower river shoreline for the sole benefit to fish and wildlife.

Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

The Nisqually Project has not received authority to incidentally take listed species. NOAA Fisheries does not currently consider the Project a high priority for Section 7 consultation for Chinook salmon and steelhead trout.

3.F.3 Threatened and Endangered Species Standard in Zone 3 – LaGrande Impoundment

The Nisqually Hydroelectric Project satisfies Standard F.3, Recovery Planning and Action, in Zone 3 – LaGrande Impoundment.

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents.

The Project area falls within the historic range of the following threatened or endangered species:

- Puget Sound Chinook salmon – Federal Threatened (Puget Sound Evolutionary Significant Unit (ESU)), State candidate
- Puget Sound Steelhead Trout - Federal Threatened (Puget Sound Evolutionary Significant Unit (ESU)), State candidate
- Gray wolf – Federal Endangered, State Endangered
- Grizzly bear – Federal Threatened, State Endangered
- Northern spotted owl – Federal Threatened, State Endangered
- Marbled murrelet – Federal Threatened, State Candidate

Listed species believed to or known to occur in Washington can be found at https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=WA&status=listed. Only the species above fall within the historic range of the species on the complete list.

Chinook salmon were listed under the federal ESA in 1999, and Puget Sound Steelhead in 2007, after the FERC license for the Project was issued. Both Chinook and steelhead trout are present downstream of the Project. The Chinook salmon population in the Nisqually River is heavily supported by tribal hatchery production; however, the hatchery fish are not considered critical to recovery of the species. Bull trout (Federally Threatened – Coterminous US DPS) are thought to use some areas of the lower Nisqually River and intertidal area for feeding, but are generally not known to be present in significant numbers in the river, nor have been documented in the Nisqually above River Mile 6 (South Puget Sound Salmon Recovery Group 2004).

The listed mammalian species (gray wolf and grizzly bear) and avian species (northern spotted

owl and marbled murrelet) have never been documented in the Project area in recent history. Suitable habitat for marbled murrelet exists on project wildlife lands and suitable habitat for spotted owls occurs near the wildlife lands. However, Tacoma Power conducted surveys for both species in May 2005 which did not identify marbled murrelet presence and determined its presence to be unlikely. All suitable habitat is protected as a condition of the Wildlife Management Plan; therefore, project operations would not impact these species' habitat requirements.

Article 425 – Threatened and Endangered Species Protection Plan of the FERC license directs Tacoma Power to protect federally listed animals and their habitats from land-disturbing activities. The plan typically applies to land use actions such as construction or habitat enhancement measures that could impact listed species. No such actions have occurred since Tacoma Power's LIHI recertification in 2013 that required Tacoma Power to implement provisions of the threatened and endangered species protection plan. The Project is in compliance with Article 425 – Threatened and Endangered Species Protection Plan of the FERC license.

None of the existing recovery plans for species within the Project area contain recommendations specific to the Project, except for Chinook Salmon and steelhead trout. The Nisqually Fall Chinook Salmon Recovery Plan (2004) and the draft Steelhead Recovery Plan (2014) both stipulate the permanence of the minimum flows which benefit both species as well as include specific actions that pertain to the Project. There have been no recommendations from agencies for Tacoma to provide any additional protection for other listed species.

Recovery Action 1.3.2.5 of the Chinook Recovery Plan states: "Investigate potential for transport logs from above Alder/LaGrande dams to downstream areas (LWD recruitment)." Action 2.3.1 of the Draft Steelhead Recovery Plan states that implementers of the plan should "work with Tacoma Power to find ways to transport logs from Alder/LaGrande Dams to the mainstem to supplement large woody material recruitment to mainstem reaches immediately downstream of the dams." To date Tacoma Power has supplied large woody debris from the Alder reservoir to instream restoration projects in the lower basin several times. Several hundred pieces of large woody debris that were obtained free of charge from Tacoma Power have been used in salmon restoration projects in tributaries to the Nisqually such as: Mashel River, Ohop Creek, and Muck Creek.

Action 1.1.2.2 of the Chinook Recovery Plan states: "Secure Tacoma Public Utilities (Tacoma Power) and City of Centralia permanent protection commitments in the Wilcox Reach (Nisqually 5), Middle Reach (Nisqually 6), Upper Reach (Nisqually 7A), and Upper Reach (Nisqually 7B)." Tacoma Power has been committed to permanent protection and maintenance of 16 miles of lower river shoreline for the sole benefit to fish and wildlife.

Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

The Nisqually Project has not received authority to incidentally take listed species. NOAA Fisheries does not currently consider the Project a high priority for Section 7 consultation for Chinook salmon and steelhead trout.

3.F.4 Threatened and Endangered Species Standard in Zone 4 – Alder Impoundment

The Nisqually Hydroelectric Project satisfies Standard F.3, Recovery Planning and Action, in Zone 4 – Alder Impoundment.

Criterion	*Standard*	*Instructions*
F	3	Recovery Planning and Action: • If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents. • Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

If listed species are present, document that the facility is in compliance with relevant conditions in the species recovery plans, incidental take permits or statements, biological opinions, habitat conservation plans, or similar government documents.

The Project area falls within the historic range of the following threatened or endangered species:

- Puget Sound Chinook salmon – Federal Threatened (Puget Sound Evolutionary Significant Unit (ESU)), State candidate
- Puget Sound Steelhead Trout - Federal Threatened (Puget Sound Evolutionary Significant Unit (ESU)), State candidate
- Gray wolf – Federal Endangered, State Endangered
- Grizzly bear – Federal Threatened, State Endangered
- Northern spotted owl – Federal Threatened, State Endangered
- Marbled murrelet – Federal Threatened, State Candidate

Listed species believed to or known to occur in Washington can be found at https://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=WA&status=listed. Only the species above fall within the historic range of the species on the complete list.

Chinook salmon were listed under the federal ESA in 1999, and Puget Sound Steelhead in 2007, after the FERC license for the Project was issued. Both Chinook and steelhead trout are present downstream of the Project. The Chinook salmon population in the Nisqually River is heavily supported by tribal hatchery production; however, the hatchery fish are not considered critical to recovery of the species. Bull trout (Federally Threatened – Coterminous US DPS) are thought to use some areas of the lower Nisqually River and intertidal area for feeding, but are generally not known to be present in significant numbers in the river, nor have been documented in the Nisqually above River Mile 6 (South Puget Sound Salmon Recovery Group 2004).

The listed mammalian species (gray wolf and grizzly bear) and avian species (northern spotted owl and marbled murrelet) have never been documented in the Project area in recent history.

Suitable habitat for marbled murrelet exists on project wildlife lands and suitable habitat for spotted owls occurs near the wildlife lands. However, Tacoma Power conducted surveys for both species in May 2005 which did not identify marbled murrelet presence and determined its presence to be unlikely. All suitable habitat is protected as a condition of the Wildlife Management Plan; therefore, project operations would not impact these species' habitat requirements.

Article 425 – Threatened and Endangered Species Protection Plan of the FERC license directs Tacoma Power to protect federally listed animals and their habitats from land-disturbing activities. The plan typically applies to land use actions such as construction or habitat enhancement measures that could impact listed species. No such actions have occurred since Tacoma Power's LIHI recertification in 2013 that required Tacoma Power to implement provisions of the threatened and endangered species protection plan. The Project is in compliance with Article 425 – Threatened and Endangered Species Protection Plan of the FERC license.

None of the existing recovery plans for species within the Project area contain recommendations specific to the Project, except for Chinook Salmon and steelhead trout. The Nisqually Fall Chinook Salmon Recovery Plan (2004) and the draft Steelhead Recovery Plan (2014) both stipulate the permanence of the minimum flows which benefit both species as well as include specific actions that pertain to the Project. There have been no recommendations from agencies for Tacoma to provide any additional protection for other listed species.

Recovery Action 1.3.2.5 of the Chinook Recovery Plan states: "Investigate potential for transport logs from above Alder/LaGrande dams to downstream areas (LWD recruitment)." Action 2.3.1 of the Draft Steelhead Recovery Plan states that implementers of the plan should "work with Tacoma Power to find ways to transport logs from Alder/LaGrande Dams to the mainstem to supplement large woody material recruitment to mainstem reaches immediately downstream of the dams." To date Tacoma Power has supplied large woody debris from the Alder reservoir to instream restoration projects in the lower basin several times. Several hundred pieces of large woody debris that were obtained free of charge from Tacoma Power have been used in salmon restoration projects in tributaries to the Nisqually such as: Mashel River, Ohop Creek, and Muck Creek.

Action 1.1.2.2 of the Chinook Recovery Plan states: "Secure Tacoma Public Utilities (Tacoma Power) and City of Centralia permanent protection commitments in the Wilcox Reach (Nisqually 5), Middle Reach (Nisqually 6), Upper Reach (Nisqually 7A), and Upper Reach (Nisqually 7B)." Tacoma Power has been committed to permanent protection and maintenance of 16 miles of lower river shoreline for the sole benefit to fish and wildlife.

Document that any incidental take permits and/or biological opinions currently in effect were designed as long-term solutions for protection of listed species in the area.

The Nisqually Project has not received authority to incidentally take listed species. NOAA Fisheries does not currently consider the Project a high priority for Section 7 consultation for Chinook salmon and steelhead trout.

References

South Puget Sound Salmon Recovery Group. 2004. Chinook & Bull Trout Recovery Approach for the South Puget Sound nearshore. Prepared for the Shared Strategy for Puget Sound. July 2004.

License Articles and Links

License Article 423

License Article 423 Annual Report
https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14876820

License Article 425 (see Article 410 Annual Report)

3.G Cultural and Historic Resources Standards

3.G.1 Cultural and Historic Resources Standards in Zone 1 – Nisqually River

The Nisqually Hydroelectric Project satisfies Standard G.1, Not Applicable / De Minimis Effect, in Zone 1 – Nisqually River.

Criterion	*Standard*	*Instructions*
G	1	Not Applicable / De Minimis Effect: • Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility. • Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.

Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.

To date, no prehistoric cultural resource sites or historic buildings or structures have been recorded on Nisqually Project lands.

In 1989, Western Heritage archaeological consultants conducted a cultural resource survey which included reservoir areas, transmission corridors, and structures associated with the Alder and LaGrande hydroelectric facilities. Their studies did not identify any prehistoric or historic properties that were eligible for listing in the National Register of Historic Places or other cultural resources that would be considered potentially eligible (Wessen 1989).

Article 429 of the FERC License requires Tacoma Power to consult with the State Historic Preservation Officer (SHPO) before starting any land-clearing or land-disturbing activities within the project boundary other than those specifically authorized in the license, including recreation developments. Tacoma Power has consulted the SHPO on numerous ground-disturbing activities where cultural resource surveys were conducted prior to starting a project. Those surveys also did not identify cultural resources on Project lands. To date, there have been no unanticipated discoveries on Project lands. The project is in compliance with this requirement.

Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.

In 1945, prior to eligibility for listing as an historic structure, the original LaGrande Powerhouse was modified to meet demands for increased power to serve the City of Tacoma. The modification included adding a new generator to increase power production capacity. Prior to those extensive alterations, the LaGrande powerhouse may have been considered eligible for listing in the National Register of Historic Places (NRHP). However, the present interior and exterior of the building and service facilities no longer meet the criteria for listing in the NRHP.

3.G.2 Cultural and Historic Resources Standards in Zone 2 – Bypassed Reach

The Nisqually Hydroelectric Project satisfies Standard G.1, Not Applicable / De Minimis Effect, in Zone 2 – Bypassed Reach.

Criterion	*Standard*	*Instructions*
G	1	Not Applicable / De Minimis Effect: • Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility. • Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.

Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.

To date, no prehistoric cultural resource sites or historic buildings or structures have been recorded on Nisqually Project lands.

In 1989, Western Heritage archaeological consultants conducted a cultural resource survey which included reservoir areas, transmission corridors, and structures associated with the Alder and LaGrande hydroelectric facilities. Their studies did not identify any prehistoric or historic properties that were eligible for listing in the National Register of Historic Places or other cultural resources that would be considered potentially eligible (Wessen 1989).

Article 429 of the FERC License requires Tacoma Power to consult with the State Historic Preservation Officer (SHPO) before starting any land-clearing or land-disturbing activities within the project boundary other than those specifically authorized in the license, including recreation developments. Tacoma Power has consulted the SHPO on numerous ground-disturbing activities where cultural resource surveys were conducted prior to starting a project. Those surveys also did not identify cultural resources on Project lands. To date, there have been no unanticipated discoveries on Project lands. The project is in compliance with this requirement.

Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.

Because no cultural resource sites have been recorded on Project lands, it is deemed that the construction of the Nisqually hydroelectric facilities and their continued operation have had no adverse effect on cultural or historic resources.

3.G.3 Cultural and Historic Resources Standards in Zone 3 – LaGrande Impoundment

The Nisqually Hydroelectric Project satisfies Standard G.1, Not Applicable / De Minimis Effect, in Zone 3 – LaGrande Impoundment.

Criterion	*Standard*	*Instructions*
G	1	Not Applicable / De Minimis Effect: • Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility. • Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.

Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.

To date, no prehistoric cultural resource sites or historic buildings or structures have been recorded on Nisqually Project lands.

In 1989, Western Heritage archaeological consultants conducted a cultural resource survey which included reservoir areas, transmission corridors, and structures associated with the Alder and LaGrande hydroelectric facilities. Their studies did not identify any prehistoric or historic properties that were eligible for listing in the National Register of Historic Places or other cultural resources that would be considered potentially eligible (Wessen 1989).

Article 429 of the FERC License requires Tacoma Power to consult with the State Historic Preservation Officer (SHPO) before starting any land-clearing or land-disturbing activities within the project boundary other than those specifically authorized in the license, including recreation developments. Tacoma Power has consulted the SHPO on numerous ground-disturbing activities where cultural resource surveys were conducted prior to starting a project. Those surveys also did not identify cultural resources on Project lands. To date, there have been no unanticipated discoveries on Project lands. The project is in compliance with this requirement.

Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.

Because no cultural resource sites have been recorded on Project lands, it is deemed that the construction of the Nisqually hydroelectric facilities and their continued operation have had no adverse effect on cultural or historic resources.

3.G.4 Cultural and Historic Resources Standards in Zone 4 – Nisqually River

The Nisqually Hydroelectric Project satisfies Standard G.1, Not Applicable / De Minimis Effect, in Zone 4 – Alder Impoundment.

Criterion	*Standard*	*Instructions*
G	1	Not Applicable / De Minimis Effect: • Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility. • Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.

Document that there are no cultural or historic resources located on facility lands that can be affected by construction or operations of the facility.

To date, no prehistoric cultural resource sites or historic buildings or structures have been recorded on Nisqually Project lands.

In 1989, Western Heritage archaeological consultants conducted a cultural resource survey which included reservoir areas, transmission corridors, and structures associated with the Alder and LaGrande hydroelectric facilities. Their studies did not identify any prehistoric or historic properties that were eligible for listing in the National Register of Historic Places or other cultural resources that would be considered potentially eligible (Wessen 1989).

Article 429 of the FERC License requires Tacoma Power to consult with the State Historic Preservation Officer (SHPO) before starting any land-clearing or land-disturbing activities within the project boundary other than those specifically authorized in the license, including recreation developments. Tacoma Power has consulted the SHPO on numerous ground-disturbing activities where cultural resource surveys were conducted prior to starting a project. Those surveys also did not identify cultural resources on Project lands. To date, there have been no unanticipated discoveries on Project lands. The project is in compliance with this requirement.

Document that the facility construction and operation have not in the past adversely affected any cultural or historic resources that are present on facility lands.

Because no cultural resource sites have been recorded on Project lands, it is deemed that the construction of the Nisqually hydroelectric facilities and their continued operation have had no adverse effect on cultural or historic resources.

References

Wessen, Gary C., Jeanne Welsh, Cecelia Carper. 1989. A Cultural Resource Survey of the Alder La Grande Hydroelectric Facilities on the Nisqually River. Prepared for Hosey & Associates.

License Articles

License Article 429

3.H Recreational Resources Standards

3.H.1 Recreational Resources Standard in Zone 1 – Nisqually River

The Nisqually Hydroelectric Project satisfies Standard H.2, Agency Recommendation, in Zone 1 – Nisqually River.

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.

Article 427 – Recreation Plan of the FERC license directs recreational access and facilities for the entire project and applies to all zones. Article 423 – Wildlife Management Plan of the FERC license allows the public non-motorized recreational access to wildlife lands for the entire project and applies to all zones.

No developed recreational facilities occur within Zone 1 – Nisqually River. The lands accessible to the public in this zone of effect are classified as wildlife lands. Although these parcels of wildlife land are open to non-motorized recreation without fee or charge, the Nisqually River and Tacoma's lands in this zone are not easily accessible to the public due to their relatively isolated location along the river among other adjacent protected properties, such as those owned by the Washington Department of Natural Resources, Nisqually Land Trust, and Washington State Parks and Recreation Commission.

Tacoma Power has received no reasonable requests from the public or from agencies to provide additional recreational access within Zone 1.

Document that the facility is in compliance with all such recommendations and plans.

The Project is in compliance with Article 427 – Recreation Plan of the FERC license, which directs recreational access and facilities in Zone 1.

The Project is in compliance with Article 423 – Wildlife Management Plan of the FERC license, which directs the management of the lands open the public in Zone 1.

3.H.2 Recreational Resources Standard in Zone 2 – Bypassed Reach

The Nisqually Hydroelectric Project satisfies Standard H.2, Agency Recommendation, in Zone 2 – Bypassed Reach.

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.

Article 427 – Recreation Plan of the FERC license directs recreational access and facilities for the entire project and applies to all zones. Article 423 – Wildlife Management Plan of the FERC license allows the public non-motorized recreational access to wildlife lands for the entire project and applies to all zones. Article 428 – Whitewater Boating of the FERC license consisted of an evaluation of whitewater boating, which was discontinued in 2000 for safety (see next section).

No developed recreational facilities occur within Zone 2 – Bypassed Reach. Cliffs and steep, rocky geography significantly limit public access in this zone of effect, although these lands are classified as wildlife land and are open to non-motorized recreation without fee or charge. It is not feasible to provide improved recreational access.

Tacoma Power has received no reasonable requests from the public or from agencies to provide additional recreational access within Zone 2.

Document that the facility is in compliance with all such recommendations and plans.

The Project is in compliance with Article 427 – Recreation Plan of the FERC license, which directs recreational access and facilities in Zone 2.

The Project is in compliance with Article 423 – Wildlife Management Plan of the FERC license, which directs the management of the lands open the public in Zone 2.

Tacoma concluded a three-year evaluation of whitewater boating in this zone in 2000 as required by Article 428 – Whitewater Boating of the FERC license. However, there were safety hazards and the test runs resulted in one death. A final report in 2001 recommended that the spills be discontinued. FERC concurred and agreed to not require further recreational releases in the Bypassed Reach.

During the relicensing of the Nisqually Project, a major issue was whether Tacoma should be required to provide whitewater recreational flows from LaGrande Dam into the 1.7-mile-long bypass reach. Issues of concern included potential impacts to aquatic resources, reservoir recreation upstream of the dam, public safety concerns, and costs associated with lost power

generation, river access, and potential whitewater rescue operations. Resource agencies were particularly concerned that major recreational releases would negatively affect fisheries. After considering these issues, FERC (in license Article 428) required Tacoma to file a three-year plan for evaluating whitewater boating opportunities in the LaGrande bypass reach. The plan was to include flow releases, during each year of the three-year period, on two weekends in mid-to-late November or December. Tacoma was also required to file an annual report with the Commission for its approval. License Article 421 required an additional study to assess the impacts of whitewater releases on fishery resources in the bypass reach (FERC 2002).

The three-year plan was filed by the utility and whitewater releases were subsequently conducted. Test runs of the reach were conducted by members of the American Whitewater Affiliation (AWA) and other whitewater boating groups. The initial test runs were successful; however, during one of the last runs in December 2000 one boater drowned. On March 30, 2001, Tacoma filed its final report evaluating recreational flows and recommended that whitewater releases be discontinued permanently, due to safety, cost, and fisheries concerns. In November 2001, FERC found that the fisheries study was inconclusive, but agreed to not require further recreational releases in the bypass reach due to safety and cost concerns (FERC 2002).

3.H.3 Recreational Resources Standard in Zone 3 – LaGrande Impoundment

The Nisqually Hydroelectric Project satisfies Standard H.2, Agency Recommendation, in Zone 3 – LaGrande Impoundment.

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.

Article 427 – Recreation Plan of the FERC license directs recreational access and facilities for the entire project and applies to all zones. Article 423 – Wildlife Management Plan of the FERC license allows the public non-motorized recreational access to wildlife lands for the entire project and applies to all zones.

No developed recreational facilities occur within Zone 3 – LaGrande Impoundment. Cliffs and steep, rocky geography significantly limit public access in this zone of effect, although these lands are classified as wildlife land and are open to non-motorized recreation. Recreational fishing is not prohibited in the LaGrande Impoundment, but it is not encouraged. There is limited angler access and no recreational fishery enhancement. A small number of anglers walk the road to the dam to fish in the reservoir.

Tacoma Power has received no reasonable requests from the public or from agencies to provide additional recreational access within Zone 3.

Document that the facility is in compliance with all such recommendations and plans.

The Project is in compliance with Article 427 – Recreation Plan of the FERC license, which directs recreational access in Zone 3.

The Project is in compliance with Article 423 – Wildlife Management Plan of the FERC license, which directs the management of the lands open the public in Zone 3.

3.H.4 Recreational Resources Standard in Zone 4 – Alder Impoundment

The Nisqually Hydroelectric Project satisfies Standard H.2, Agency Recommendation, in Zone 4 –Alder Impoundment.

Criterion	*Standard*	*Instructions*
H	2	Agency Recommendation: • Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations. • Document that the facility is in compliance with all such recommendations and plans.

Document any comprehensive resource agency recommendations and enforceable recreation plan that is in place for recreational access or accommodations.

Article 427 – Recreation Plan of the FERC license directs recreational access and facilities for the entire project and applies to all zones. Article 423 – Wildlife Management Plan of the FERC license allows the public non-motorized recreational access to wildlife lands for the entire project and applies to all zones. Article 413 - Kokanee Stocking of the FERC license, directs kokanee stocking for the purpose of recreational opportunities at Alder reservoir, located in Zone 4. All the plans were prepared in consultation with agencies named in the respective plans.

All of the developed recreational facilities for the Project occur in Zone 4 (Figure 15).

Figure 15. Nisqually Hydroelectric Project Map, showing developed recreational areas in red.

Access to Alder reservoir and use of the two boat launches is provided without charge to the public, although fees are required for the use of developed campsites throughout the year. There are 173 total individual campsites and two large group camp areas available at Alder

Lake campground and Rocky Point campground. Use of Stacel Point day-use area within Alder Lake campground is free of charge except for parking fees on weekends and holidays from Memorial Day weekend through Labor Day weekend. Rocky Point and Sunny Beach Point day-use areas are available to the public free of charge and are located along the highway adjacent to the Alder Impoundment.

License Article 413 requires Tacoma Power to supplement the natural production of kokanee salmon in Alder reservoir by annually stocking up to 500,000 kokanee fry in Alder reservoir. Tacoma Power stocks kokanee fry and conducts creel surveys on an annual basis, with annual reporting to FERC. In 2004, stocking was reduced to 250,000 fry to lessen potential intraspecific competition in a potentially overpopulated reservoir and to increase fish size. Since 2009, Tacoma Power has been releasing 200,000 kokanee fry in the spring and 50,000 larger kokanee in the fall. The fall release fish are adipose clipped to aid in determining percent contribution to the fishery through creel surveys.

Tacoma Power has received no reasonable requests from the public or from agencies to provide additional recreational access within Zone 4.

Document that the facility is in compliance with all such recommendations and plans.

The Project is in compliance with Article 427 – Recreation Plan of the FERC license, which directs recreational access and facilities in Zone 4.

The Project is in compliance with Article 423 – Wildlife Management Plan of the FERC license, which directs the management of the lands open the public in Zone 4.

License Articles and Links

License Article 413 Annual Report
https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14857994

License Article 421

License Article 423 Annual Report
https://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=14876820

License Article 427

License Article 428

4.0 Facility Contacts

4.A Owner/Operator Contacts

Project Owner and Operator: Tacoma Power	
Name and Title	Chris Mattson, Generation Manager
Company	Tacoma Power
Phone	(253) 502-8098
Email Address	cmattson@cityoftacoma.org
Mailing Address	3628 S 35th St Tacoma, WA 98409
Compliance Contact (responsible for LIHI Program requirements):	
Name and Title	Keith Underwood, Natural Resources Manager
Company	Tacoma Power
Phone	(253) 502-8196
Email Address	kunderwood@cityoftacoma.org
Mailing Address	3628 S 35th St Tacoma, WA 98409
Party responsible for accounts payable:	
Name and Title	Lisa Dill
Company	Tacoma Power
Phone	(253) 502-8718
Email Address	ldill@cityoftacoma.org
Mailing Address	3628 S 35th St Tacoma, WA 98409

4.B Current State, Federal, and Tribal Resource Agency Contacts

Agency Contact - Area of Responsibility: Flows	
Agency Name	Nisqually Indian Tribe
Name and Title	George Walter, Environmental Program Supervisor
Phone	(360) 438-8687
Email address	walter.george@nisqually-nsn.gov
Mailing Address	4820 She-Nah-Num Drive SE Olympia, WA 98513

Agency Contact – Area of Responsibility: Flows	
Agency Name	National Marine Fisheries Service
Name and Title	Curtis McFeron, Fish Biologist
Phone	(360) 753-9530
Email address	curtis.mcferon@noaa.gov
Mailing Address	510 Desmond Dr SE, Suite 103 Lacey, WA 98503

Agency Contact - Area of Responsibility: Water Quality	
Agency Name	Washington Department of Ecology

Name and Title	Carol Serdar, Hydropower Compliance Manager and Contaminated Construction Stormwater Inspector
Phone	(360) 407-6269
Email address	carol.serdar@ecy.wa.gov
Mailing Address	PO Box 47775 Olympia, WA 98504-7775

Agency Contact - Area of Responsibility: Fish/Wildlife Resources	
Agency Name	Washington Department of Fish and Wildlife
Name and Title	Peggy Miller, FERC Coordinator
Phone	(360) 902-2593
Email address	peggy.miller@dfw.wa.gov
Mailing Address	PO Box 43200 Olympia, WA 98504-3200

Agency Contact – Area of Responsibility: Fish/Wildlife Resources	
Agency Name	National Marine Fisheries Service
Name and Title	Curtis McFeron, Fish Biologist
Phone	(360) 753-9530
Email address	curtis.mcferon@noaa.gov
Mailing Address	510 Desmond Dr SE, Suite 103 Lacey, WA 98503

Agency Contact - Area of Responsibility: Fish/Wildlife Resources	
Agency Name	Nisqually Indian Tribe
Name and Title	George Walter, Environmental Program Supervisor
Phone	(360) 438-8687
Email address	walter.george@nisqually-nsn.gov
Mailing Address	4820 She-Nah-Num Drive SE Olympia, WA 98513

Agency Contact - Area of Responsibility: Watersheds	
Agency Name	Nisqually River Council
Name and Title	David Troutt, Nisqually River Council Chair
Phone	(360) 438-8715
Email address	troutt.david@nisqually-nsn.gov
Mailing Address	4820 She-Nah-Num Drive SE Olympia, WA 98513

Agency Contact - Area of Responsibility: Watersheds	
Agency Name	Washington Department of Fish and Wildlife
Name and Title	Peggy Miller, FERC Coordinator
Phone	(360) 902-2593

Email address	peggy.miller@dfw.wa.gov
Mailing Address	PO Box 43200 Olympia, WA 98504-3200

Agency Contact - Area of Responsibility: T/E Species	
Agency Name	US Fish and Wildlife Service
Name and Title	Lindsy Asman, Endangered Species Biologist
Phone	(360) 753-6037
Email address	lindsy_asman@fws.gov
Mailing Address	510 Desmond Dr. SE Lacey, Washington 98503

Agency Contact – Area of Responsibility: T/E Species	
Agency Name	National Marine Fisheries Service
Name and Title	Curtis McFeron, Fish Biologist
Phone	(360) 753-9530
Email address	curtis.mcferon@noaa.gov
Mailing Address	510 Desmond Dr SE, Suite 103 Lacey, WA 98503

Agency Contact - Area of Responsibility: T/E Species	
Agency Name	Nisqually Indian Tribe
Name and Title	Christopher Ellings, Salmon Recovery Program Manager
Phone	(360) 438-8687, ext. 1270
Email address	ellings.christopher@nisqually-nsn.gov
Mailing Address	4820 She-Nah-Num Drive SE Olympia, WA 98513

Agency Contact - Area of Responsibility: Cultural/Historic Resources	
Agency Name	Dept. of Archaeology and Historic Preservation
Name and Title	Allyson Brooks, State Historic Preservation Officer/ Executive Director
Phone	(360) 586-3066
Email address	allyson.brooks@dahp.wa.gov
Mailing Address	1110 Capitol Way South, Suite 30 Olympia, WA 98513

Agency Contact - Area of Responsibility: Cultural/Historic Resources	
Agency Name	Nisqually Indian Tribe
Name and Title	Jackie Wall, Tribal Historic Preservation Officer
Phone	(360) 456-5221, ext. 2180
Email address	wall.jackie@nisqually-nsn.gov

Mailing Address	4820 She-Nah-Num Dr. SE Olympia, WA 98513

Agency Contact - Area of Responsibility: Recreation	
Agency Name	Washington Department of Fish and Wildlife
Name and Title	Peggy Miller, FERC Coordinator
Phone	(360) 902-2593
Email address	peggy.miller@dfw.wa.gov
Mailing Address	PO Box 43200 Olympia, WA 98504-3200

5.0 Sworn Statement

As an Authorized Representative of Tacoma Power, the Undersigned attests that the material presented in the application is true and complete.

The Undersigned acknowledges that the primary goal of the Low Impact Hydropower Institute's Certification Program is public benefit, and that the LIHI Governing Board and its agents are not responsible for financial or other private consequences of its certification decisions.

The undersigned further acknowledges that if certification of the applying facility is issued, the LIHI Certification Mark License Agreement must be executed prior to marketing the electricity product as LIHI Certified.

The undersigned Applicant further agrees to hold the Low Impact Hydropower Institute, the Governing Board and its agents harmless for any decision rendered on this or other applications, from any consequences of disclosing or publishing any submitted certification application materials to the public, or on any other action pursuant to the Low Impact Hydropower Institute's Certification Program.

Keith Underwood

Keith Underwood
Natural Resources Manager
Tacoma Power

07/27/2018
Date

Appendix A

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

July 5, 2018

Matthew R. Peter
Natural Resources Biologist
Tacoma Power - Generation/Natural Resources
3628 S. 35th Street
Tacoma, WA 98409

RE: Request for a letter to support Tacoma Power's LIHI certification

Dear ~~Mr. Peter~~ MATT,

I am writing in response to your request to provide information related to Tacoma Power's certification application to the Low Impact Hydropower Institute (LIHI). The Department of Ecology (Ecology) issued a Clean Water Act (CWA) §401 water quality certification (WQC) to the Nisqually River Project in April, 1992. The conditions in the certification included spill prevention controls, meeting instream flows, and ensuring no excursions beyond the state water quality criteria. To our knowledge, the Project is in compliance with all conditions in the WQC.

Ecology did not identify any water quality problems during the issuance of the 401 WQC, therefore, no further monitoring requirements were included. However, Ecology does review all available data in the project area during the development of the state's Clean Water Act (CWA) §303(d) list. We have identified one water quality limited waterbody within the project area. This is a Clean Water Act (CWA) §303(d) listing for elevated Polychlorinated Biphenyl (PCB) concentration in one species of fish collected in 2008. Ecology has no evidence that the Nisqually River Project is the cause of this impairment as elevated levels of PCBs are also found in tissue sampling from other lakes within the Nisqually watershed. Furthermore, no other data collected within the project area has resulted in a 303(d) listing.

As there are few data collection activities in the upper Nisqually, Ecology looks forward to working with Tacoma Power in the future to share information and plan for future monitoring efforts necessary to relicense the Nisqually River Project.

Sincerely,

Chad Brown,
Department of Ecology
Watershed Management Section/Water Quality Management

Emailed CC to: Carol Serdar, Ecology SWRO