DEPARTMENT OF ECOLOGY
State of Washington

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
REPORT OF EXAMINATION
To Appropriate Public Waters of the State of Washington

APPLICATION DATE	APPLICATION NO.
July 29, 1988	S2-27420

NAME

City of Tacoma, Department of Public Utilities, dba Tacoma Power

ADDRESS/STREET	CITY/STATE	ZIP CODE
3628 South 35th Street	Tacoma, Washington	98409-3192

PUBLIC WATERS TO BE APPROPRIATED

SOURCE

North Fork Skokomish River

TRIBUTARY OF (IF SURFACE WATERS)

Skokomish River

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
1,700		1,230,744[1]

QUANTITY, TYPE OF USE, PERIOD OF USE

Power generation – continuous

[1] All available inflow to Lake Kokanee, except such minimum instream flows and ramping discharges as required by the Amended FERC License.

LOCATION OF DIVERSION

APPROXIMATE LOCATION OF DIVERSION

2,180 feet South and 1,830 feet East from the NW corner of Section 16, T. 22 N., R. 04 W. W.M.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP	RANGE	WRIA	COUNTY
SE ¼ of the NW ¼	16	22 N.	04 W. W.M.	16	Mason

PARCEL NUMBER	LATITUDE	LONGITUDE	DATUM
422162222222	47°23'48.7"	123°12'3.3"	WGS84

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED
[Attachment 1 shows location of the authorized place of use and point(s) of diversion or withdrawal.]

Cushman No. 2 Powerhouse is located within the Tract 1 of Government Lot 2, Section 26, Township 22 North, Range 4 West, W. M., together with the second class tidelands adjoining, except State Route 101, Mason County, Washington.

Additionally, this water will serve as a backup water supply (up to 7 cfs) for the Saltwater Park Hatchery. The hatchery is to be located in a Parcel 3 (Tax Parcel No. 422262000030) of Tract 2 in Government Lot 2 within Section 26, Township 22 North, Range 4 West, W.M., as shown on Mason County Boundary Line Adjustment No. 09-35 dated January 21, 2010.

DESCRIPTION OF PROPOSED WORKS

Cushman No. 2 Dam development consists of a 230-feet-high concrete arch dam approximately 2 miles downstream of No. 1 Dam. Cushman No. 2 Dam impounds Lake Kokanee a 128-acre lake with a gross storage capacity of 8,000 acre-feet at full pool (Elevation 480 feet Cushman Datum); a gated spillway structure abutting the dam; a power intake; a 2.5-mile-long, 17-feet-diameter pressure tunnel; a steel surge tank; and three 12-feet-diameter, 1,350-feet-long steel penstocks. Water is diverted from Lake Kokanee to generate electricity at Cushman No. 2 Powerhouse and is discharged to Hood Canal. Cushman No. 2 Powerhouse contains three turbine generator units for a total installed capacity of 81 megawatts and a maximum hydraulic capacity of approximately 3,000 cfs. Power is transmitted from a switchyard adjacent to Cushman No. 2 Powerhouse to Tacoma Power's Vaughn Tap.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE	COMPLETE PROJECT BY THIS DATE	WATER PUT TO FULL USE BY THIS DATE
Begun	Completed	In Use

PROVISIONS

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the project location, and to inspect at reasonable times, records of water use, wells, diversions, measuring devices and associated distribution systems for compliance with water law.

An approved measuring device shall be installed and maintained for each of the sources authorized by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", Washington Administrative Code (WAC) 173-173.

Water use data shall be recorded monthly and maintained by the property owner for a minimum of five years. The maximum rate of diversion/withdrawal and the annual total volume shall be submitted to the Department of Ecology (Ecology) by January 31st of each calendar year.

The water right holder shall file the notice of Proof of Appropriation of water (under which the certificate of water right is issued) when the power generation system has been constructed and the quantity of water required by the project has been put to full beneficial use. The certificate will reflect the extent of the project perfected within the limitations of the water right. Elements of a proof inspection may include, as appropriate, the source(s), system instantaneous capacity, beneficial use(s), annual quantity, place of use, and satisfaction of provisions.

This authorization is subject to the fees in Revised Code of Washington (RCW) 90.16.050 and 90.16.090.

FINDINGS OF FACT AND ORDER

Upon reviewing the investigator's report, I find that all facts relevant and material to the subject application have been thoroughly investigated. Furthermore, I find that the appropriation of water as recommended will not be detrimental to existing rights or to the public interest.

Therefore, I ORDER the approval of Application No. S2-27420 subject to existing rights and the provisions specified above.

You have a right to appeal this decision. To appeal this you must:

- File your appeal with the Pollution Control Hearings Board within 30 days of the "**date of receipt**" of this document. Filing means actual receipt by the Board during regular office hours.
- Serve your appeal on the Department of Ecology within 30 days of the "**date of receipt**" of this document. Service may be accomplished by any of the procedures identified in WAC 371-08-305(10). "Date of receipt" is defined at RCW 43.21B.001(2).

Be sure to do the following:

- Include a copy of this document that you are appealing with your *Notice of Appeal.*
- Serve and file your appeal in paper form; electronic copies are not accepted.

1. To file your appeal with the Pollution Control Hearings Board

Mail appeal to:
The Pollution Control Hearings Board
PO Box 40903
Olympia WA 98504-0903

OR

Deliver your appeal in person to:
The Pollution Control Hearings Board
1111 Israel Road SW Suite 301
Tumwater WA 98501

2. To serve your appeal on the Department of Ecology

Mail appeal to:
The Department of Ecology
Appeals Coordinator
P.O. Box 47608
Olympia WA 98504-7608

OR

Deliver your appeal in person to:
The Department of Ecology
Appeals Coordinator
300 Desmond Dr SE
Lacey WA 98503

3. And send a copy of your appeal to:

Thomas Loranger
Department of Ecology
Southwest Regional Office
PO Box 47775
Olympia WA 98504-7775

For additional information visit the Environmental Hearings Office Website: http://www.eho.wa.gov . To find laws and agency rules visit the Washington State Legislature Website: http://www1.leg.wa.gov/CodeReviser.

Signed at Olympia, Washington, this 14th day of February 2011.

Thomas Loranger

Thomas Loranger, Section Manager
Water Resources Program
Southwest Regional Office

2/14/11
Date

BACKGROUND

The Cushman Hydroelectric Project (Federal Energy Regulatory Commission [FERC] Project No. 460) is located on the North Fork Skokomish River in Mason County, Washington, and has two dams: Cushman Cushman No. 1 Dam at Lake Cushman and Cushman No. 2 Dam at Lake Kokanee. Electricity from the Cushman Hydroelectric Project moves to Tacoma on a 40-mile-long transmission line, which crosses the Tacoma Narrows. The project is owned and operated by the Public Utilities Department of the City of Tacoma (doing business as [dba]Tacoma Power).

The City of Tacoma was issued a Project license by FERC on July 30, 1998. The license was appealed and settlement negations with the Skokomish Indian Tribe were engaged. A Settlement Agreement resulting in an Amended FERC License, extends the license term to July 30, 2048, and was made and entered by and among:

- City of Tacoma, Washington;
- United States Department of Commerce, National Marine Fisheries Service (NMFS);
- United States Department of Agriculture, Forest Service (USFS);
- United States Department of the Interior, Fish and Wildlife Service (FWS);
- United States Department of the Interior, Bureau of Indian Affairs (BIA);
- Washington Department of Fish and Wildlife (WDFW);
- Washington State Department of Ecology (Ecology); and
- Skokomish Indian Tribe.

Terms included action by the City of Tacoma to work expeditiously with Ecology to secure all needed water rights for Cushman Hydroelectric Project operations and implementation of the "Proposed License Articles."

The impoundment of surface water by the Cushman No. 2 Dam forms Lake Kokanee Reservoir, the smaller of the two reservoirs located approximately 2 miles downstream from Cushman No. 1 Dam. Lake Kokanee is 2 miles long, with 4.5 miles of shoreline. Cushman No. 2 Dam was built on the North Fork Skokomish River by the City of Tacoma and was completed in 1930. The dam is 580 feet long, 230 feet high, 8 feet wide at its top and 40 feet wide at its base. Water is diverted through a 2.5-mile long tunnel and three 1,350-foot long penstocks to the powerhouse for Cushman No. 2, located approximately 2.7 miles below the dam near the Hood Canal shoreline. It generates on average 233 million kilowatt-hours per year. The Amended FERC License regulates minimum levels of Lake Kokanee among other operational obligations.

Cushman No. 2 Project Description

Surface Water Application S2-27420, summarized below in Table 1, is a request for 1,700 cfs related to the power generation at Cushman No. 2 Powerhouse. This application is in addition to the existing 1,000-cfs Surface Water Right (S2-*02525CWRIS) held for Cushman No. 2 Hydroelectric Project. Another Surface Water Application for 300 cfs (S2-30505) was submitted on February 12, 2009 related to Cushman No. 2 project. These applications and the existing right would bring the total surface water rights for power generation to 3,000 cfs for the Cushman No. 2 project. An additional Reservoir Water Right Application (R2-30509) was also submitted on February 12, 2009 related to the Cushman No. 2 project.

Table 1 Summary of Application No. S2-27420

Attributes	*Proposed*
Applicant	City of Tacoma, Tacoma Power
Date of Application	July 29, 1988
Instantaneous Quantity	1,700 cubic feet per second
Annual Quantity	1,230,744 acre-feet
Source	North Fork Skokomish River
Point of Diversion	Cushman No. 2 Dam SE ¼ of NW ¼ of Sec. 16, T. 22 N., R. 04 W. W.M.
Purpose of Use	Power Generation
Period of Use	Continuous
Place of Use	Cushman No. 2 Powerhouse Tract 1, Government Lot 2 of Sec. 26, T. 22 N., R. 04 W. W.M.

This application is one of eight water right applications filed by Tacoma Power in Mason County, Washington. Tacoma Power submitted multiple water right applications in 1988 and 2009. The water right applications submitted in 2009 were pursuant to the Settlement Agreement resolving the outstanding issues related to the FERC's relicensing of the Cushman Hydroelectric Project. In addition to the surface water and reservoir water right applications directly related to operation of the Cushman Project, Tacoma Power submitted a groundwater right application for fish propagation activities that will be required under the Amended FERC License Articles.

In total, the Tacoma Power applications include requests for surface water (S2-27419, S2-27420, S2-30504, S2-30505 and S2-30506), groundwater (G2-30507) and reservoir (R2-30508 and R2-30509) rights associated with the Lake Cushman and Lake Kokanee reservoirs and the proposed Saltwater Park Hatchery near the shoreline of Hood Canal. These related applications for the Cushman Project are summarized in Table 2.

Table 2. Summary of Tacoma Power Water Right Applications.

Project	Control Number	Purpose of Use	Priority Date	Quantity (Qi)	Point of Withdrawal/Diversion	Place of Use Location
Cushman No. 1	S2-27419	Power Generation	7/29/1988	1,500 cfs	22N/4W-5L	22N/4W-5L
	S2-30504	Power Generation	2/12/2009	300 cfs	22N/4W-5L	22N/4W-5L
	R2-30508	Power Generation	2/12/2009	263,350 ac-ft	22N/4W-5L	22N/4W-5L
Cushman No. 2	S2-27420	Power Generation	7/29/1988	1,700 cfs	22N/4W-16F	22N/4W-26E
	S2-30505	Power Generation and Fish Propagation	2/12/2009	300 cfs	22N/4W-16F	22N/4W-26E
	R2-30509	Power Generation and Fish Propagation	2/12/2009	700 ac-ft	22N/4W-16F	22N/4W-26E
North Fork Powerhouse	S2-30506	Power Generation	2/12/2009	350 cfs	22N/4W-16F	22N/4W-16F
Saltwater Park Hatchery	G2-30507	Fish Propagation	2/12/2009	3,142 gpm	22N/4W-26D, 26E	22N/4W-26F

A map showing the locations of the existing Point of Diversion (POD) at Cushman No. 2 Dam, the Place of Use (POU) at Cushman No. 2 Powerhouse, and Lake Kokanee Reservoir is provided as Attachment 1.

Legal Requirements for Application Processing

The following requirements must be met prior to processing a water right application:

- **Public Notice (RCW 90.03.280)**
  A public notice of the application must be published in a local newspaper once a week for two consecutive weeks (RCW 90.03.280). The public notice of application S2-27420 was published in the Shelton-Mason County Journal during the weeks of January 5 and January 12, 1989.
- **State Environmental Policy Act (SEPA)**
  The applicable water right is subject to SEPA [WAC 197-11-305 and WAC 197-11-800(4)] because the instantaneous quantity is greater than the threshold of 2,250 gallons per minute (gpm). Tacoma Power has proposed adoption of the Final Environmental Impact Statement (EIS) prepared under SEPA by the FERC, FERC/EIS-0095F, Cushman Hydroelectric Project No. 460, November 1996. To meet the requirements of RCW 43.21C.030(2), the lead agency is adopting the EIS document as being appropriate for the implementation of the Amended FERC License and all its provisions, requirements and articles. The SEPA file number is SEP2009 – 40000135200.

- **Water Resources Statutes and Case Law**
  Chapters 90.03 and 90.44 RCW authorize the appropriation of public water for beneficial use and describe the process for obtaining water rights. Laws governing the water right permitting process are contained in RCW 90.02.250 through 90.03.050. In accordance with RCW 90.02.290, determinations must be made on the following four criteria in order for an application for water rights to be approved:
  - Water must be available;
  - There must be no impairment of existing rights;
  - The water use must be beneficial; and
  - The water use must not be detrimental to the public interest.
- **Administrative Status of Surface Water Bodies**
  Surface water bodies in the region are subject to administrative regulations governing the right to withdraw water for beneficial use. Minimum instream flow regulations for the Skokomish-Dosewallips watershed (Water Resource Inventory Area [WRIA] 16) have not been adopted. Administrative rules have been proposed in WAC Chapter 173-516 in 1985. Closure of the North Fork of Skokomish to further water right allocations was proposed but to date has not been implemented.

  Currently, no instream flows and basin closures have been set for WRIA 16 by Ecology. However, instream flow studies have been conducted related to watershed planning in WRIA 16 (Aspect Consulting, 2005). In addition, Watershed Planning Phases 1 through 3 have been completed, including a Draft Level 1 Assessment and a Watershed Management Plan.

INVESTIGATION

The examination of Surface Water Right Application S2-27420 submitted by City of Tacoma, Department of Public Utilities (doing business as Tacoma Power) was led by consultants from GeoEngineers, Inc. contracted as part of the Ecology's cost reimbursement program to facilitate the phased processing of the application. Phil Crane of the Water Resources Program, Ecology (Southwest Region), oversaw the examination and provided review.

The investigation included, but was not limited to, the review of:

- The State Water Code, specifically Title 173 Washington Administrative Code (WAC) and Title 90 Revised Code of Washington (RCW).
- United States Geological Survey (USGS) topographic maps.
- Aspect Consulting, 2005, WRIA 16 Instream Flow Studies, Jefferson and Mason Counties, Washington. Prepared for WRIA 16 Planning Unit. <http://www.ecy.wa.gov/programs/eap/wrias/Planning/docs/wria16_isf_122305.pdf>
- Aspect Consulting, 2009, River and Stream Impairment Analysis, WRIA 16 and 14b, Skokomish-Dosewallips Planning Area. Prepared for WRIA 16 Planning Unit. <http://www.ecy.wa.gov/programs/eap/wrias/Planning/docs/wria16_ir_63009.pdf>
- Golder Associates, Inc. and Economic & Engineering Services, Inc., 2002, Draft Skokomish-Dosewallips Watershed (WRIA 16) Phase II – Level 1 Assessment, Data Compilation and Preliminary Assessment. Prepared for WRIA 16 Planning Unit Steering Committed, Shelton, Washington. <http://www.ecy.wa.gov/biblio/0306014.html>
- Tabor, R.W. and Cady, W.M., 1978, Geologic map of the Olympic Peninsula, U.S. Geological Survey Miscellaneous Investigations Map 994, scale 1:125,000.
- Washington State Department of Ecology, 2010, Washington State Well Log Viewer website, <http://apps.ecy.wa.gov/welllog/index.asp> (Accessed May 2010).
- Washington State Department of Ecology, 2010, Water Rights Tracking System (WRTS) website <http://www.ecy.wa.gov/programs/wr/rights/tracking-apps.html> (Accessed January 2010).
- WRIA 16 Planning Unit, 2006, Watershed Management Plan Skokomish-Dosewallips Water Resource Inventory Area (WRIA 16) including the WRIA 14 South Shore Sub-Basin. <http://www.ecy.wa.gov/programs/eap/wrias/Planning/docs/WRIA%2016%20Draft%205_lo_res.pdf>
- Tacoma Public Utilities website <http://www.mytpu.org/> (Accessed February 5, 2010).
- Settlement Agreement for the Cushman Project, FERC Project No. 460 January 12, 2009. <http://www.mytpu.org/files/library/cushman-dam-settlement.pdf>
- Order on Remand and an Offer of Settlement, Amending License, Authorizing New Powerhouse, and Lifting Stay, City of Tacoma, FERC Project Nos. 460-033, 460-040 and 460-021, issued July 15, 2010. <http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20100715-3017>
- Information submitted by and conversations and/or meetings with Sarah Hahn and Steve Fisher of Tacoma Power.
- A site visit on May 17, 2010.

Site Visit

Joel Purdy, a Senior Hydrogeologist with GeoEngineers, conducted a site visit on May 17, 2010. Steve Fisher of Tacoma Power gave a tour of the facilities and property. The tour included the inspection of the Cushman Dams Nos. 1 and 2, Lakes Cushman and Kokanee, and the sites of proposed North Fork Powerhouse and Saltwater Park Hatchery. GeoEngineers took photographs of Cushman No. 2 Dam and Powerhouse.

Existing Cushman Hydroelectric Project Water Rights

Between 1922 and 1953, Tacoma Power was allocated five water rights associated with the Cushman Hydroelectric Project, based on estimates of average requirements for water storage and use for power generation. These rights are summarized in Table 3.

Table 3. Summary of Existing City of Tacoma's Cushman Hydroelectric Project Water Rights.

Project	Type	Priority Date	Qi (cfs)	Qa (afy[1])	Control Number	Application Number	Permit Number	Certificate
Cushman No. 1	Surface Water	12/11/1919	1,000	--	S2-*00353BSCWRIS	353	1956	656
	Storage	12/11/1919	--	190,000	R2-00354CWRIS	354	18	706
Cushman No. 2	Surface Water	2/15/1929	1,000	--	S2-*02525CWRIS	2525	1957	1527
	Storage	2/13/1932	--	7,300	R2-*03766CWRIS	3766	112	1528
McTaggart Creek	Surface Water	5/29/1952	5	--	S2-*11405CWRIS	11405	8814	5548

[1] acre-feet per year

Hydrologic Evaluation

The project site lies on the southeastern Olympic peninsula adjacent to Hood Canal, near the town of Potlatch, Washington. The applications listed in Table 2 are related to Tacoma Power's dams and reservoirs on the North Fork Skokomish River that form the Cushman Hydroelectric Project. The proposed North Fork Powerhouse is to be located below Cushman No. 2 Dam. The proposed Saltwater Park Hatchery is to be located on the shoreline of Hood Canal near the town of Potlatch. All applications are located within the Mason County portion of the Skokomish-Dosewallips Water Resource Inventory Area (WRIA 16).

Hydrology

The WRIA 16 Draft Level 1 Assessment (Golder Associates and Economic & Engineering Services, 2002) states that the North Fork Skokomish drainage basin is nearly 120 square miles of the 240-square-mile Skokomish drainage basin. Its headwaters originate at the Mount Stone area of the Olympic National Park, flowing east into Lake Cushman Reservoir. There are three USGS gaging stations on the North Fork Skokomish River, below Staircase Rapids (12056500), below Cushman No. 2 Dam (12058800) and near Potlatch (12059500). The following statistics were obtained from the water-year 2008 water-data reports for each station (USGS web site, accessed May 5, 2010).

Streamflow data have been collected since 1924 from the North Fork Skokomish River Staircase Rapids station (12056500), located 1.2 miles upstream from Lake Cushman at river mile 29.2. The 84-year period of record (1924 to 2008) indicates that average stream discharge is 510 cfs (369,800 afy) from a drainage area of 57.2 square miles. Maximum and minimum discharges are 27,000 cfs and 16 cfs, respectively.

Annual flows recorded at Cushman No. 1 Dam have been provided by Tacoma Power for Water Years 1931 through 2009. The 81-year record indicates an average annual flow through the dam of (563,197 afy) from a drainage area of 100 square miles. Minimum and maximum annual flows recorded are 321,959 afy and 869,208, respectively. All of the flow through Lake Cushman discharges into Lake Kokanee, together with additional inflows from Deer Meadow and other tributaries. The estimated annual average flow reporting to Cushman No. 2 Dam is approximately 600,000 acre-feet.

USGS gaging station 12058800 was located on the North Fork Skokomish River 1.2 miles downstream from Cushman No. 2 Dam at river mile 16.5. Except for the instream flow requirements and infrequent larger releases from the dam, the streamflow at this station is regulated by the impoundment of the North Fork Skokomish River for the Cushman Hydroelectric Project, with substantial diversion of flow away from the river through the penstocks to Cushman No. 2 Powerhouse since 1931. The 20-year period of record from June 1988 to 2008 indicates an average discharge of 63.7 cfs (46,170 afy) from a drainage area of 102 square miles, including 99 square miles upstream from Cushman No. 2 Dam. Maximum and minimum discharges are 3,680 cfs and 4.7 cfs, respectively.

USGS gaging station 12058800 was discontinued on September 30, 2008. A new station (12058790) was installed 0.7 miles upriver that has taken over as the real-time river gaging station on the North Fork Skokomish River near Lower Cushman Dam, near Potlatch.

USGS gaging station 12059500 is located on North Fork Skokomish River 1.1 miles upstream from the confluence with the South Fork Skokomish River at river mile 10.1. Data are available from March 1944 to November 1949 and from March 1950 to present. As with station 12058800, the flow is regulated by releases from Cushman No. 2 Dam. The 63-year period of record indicates an average discharge of 121 cfs (87,470 afy) from a drainage area of 117 square miles, including 99 square miles upstream from Cushman No. 2 Dam. Maximum and minimum discharges are 7,740 cfs and 1.3 cfs, respectively.

USGS gaging station 12061500 is located on the mainstem of Skokomish River downstream from the confluence of the North and South Forks at river mile 5.3. Streamflow data are available from 1943 to present. The 65-year period of record (1943 to 2008) indicates that average stream discharge is 1,222 cfs (885,200 afy) from a drainage area of 227 square miles, including 99 square miles upstream from Cushman No. 2 Dam. Maximum and minimum discharges are 36,600 cfs and 99 cfs, respectively.

FERC License Operational Conditions

As part of the Amended FERC License, minimum impoundment elevations (Article 405) are to be maintained for Lake Cushman and Lake Kokanee. Tacoma Power is obligated (Article 407) to release 115,835 acre-feet of the 160,000-acre-foot water budget as instantaneous minimum flows from the Cushman Project into the Lower North Fork of the Skokomish River, in accordance with the following schedule:

Month	*Instantaneous Minimum Flow Release Schedule:*
January	150 cfs
February	150 cfs
March	180 cfs
April	180 cfs
May	180 cfs
June	170 cfs
July	100 cfs
August	100 cfs
September	170 cfs
October	180 cfs
November	180 cfs
December	180 cfs

The remaining 44,165 acre-feet shall be released in accordance with a release schedule developed prior to each water budget year (July 1 – June 30) in consultation with the Fisheries and Habitat Committee (FHC), a body established to advise Tacoma Power on fisheries and habitat issues, as specified in the Amended FERC License for the Cushman Hydroelectric Project. If a consensus is not reached with the FHC regarding the release of the 44,165 acre-feet by 15 days before the start of the water budget year, the following flow regime will be implemented:

Month	*Default Instantaneous Flow Release Schedule:*
January	230 cfs
February	215 cfs
March	215 cfs
April	220 cfs
May	240 cfs
June	230 cfs
July	220 cfs
August	200 cfs
September	200 cfs
October	210 cfs
November	225 cfs
December	235 cfs

Tacoma Power is allowed fluctuations of up to 5 percent of the scheduled flow release as measured at USGS gaging station 12058790 to account for monitoring imprecision and release equipment variability.

The Amended FERC License (Article 407) describes two other flow release components that are required when flow at the USGS Staircase Rapids gaging station 12056500 or USGS Potlatch gaging station 12061500 exceeds certain rates such as flood events. Article 411 of the Amended FERC License describes the allowable downramping and upramping rates that apply to management of stage changes in the North Fork Skokomish River downstream of the project as measured at USGS gaging station 12058790.

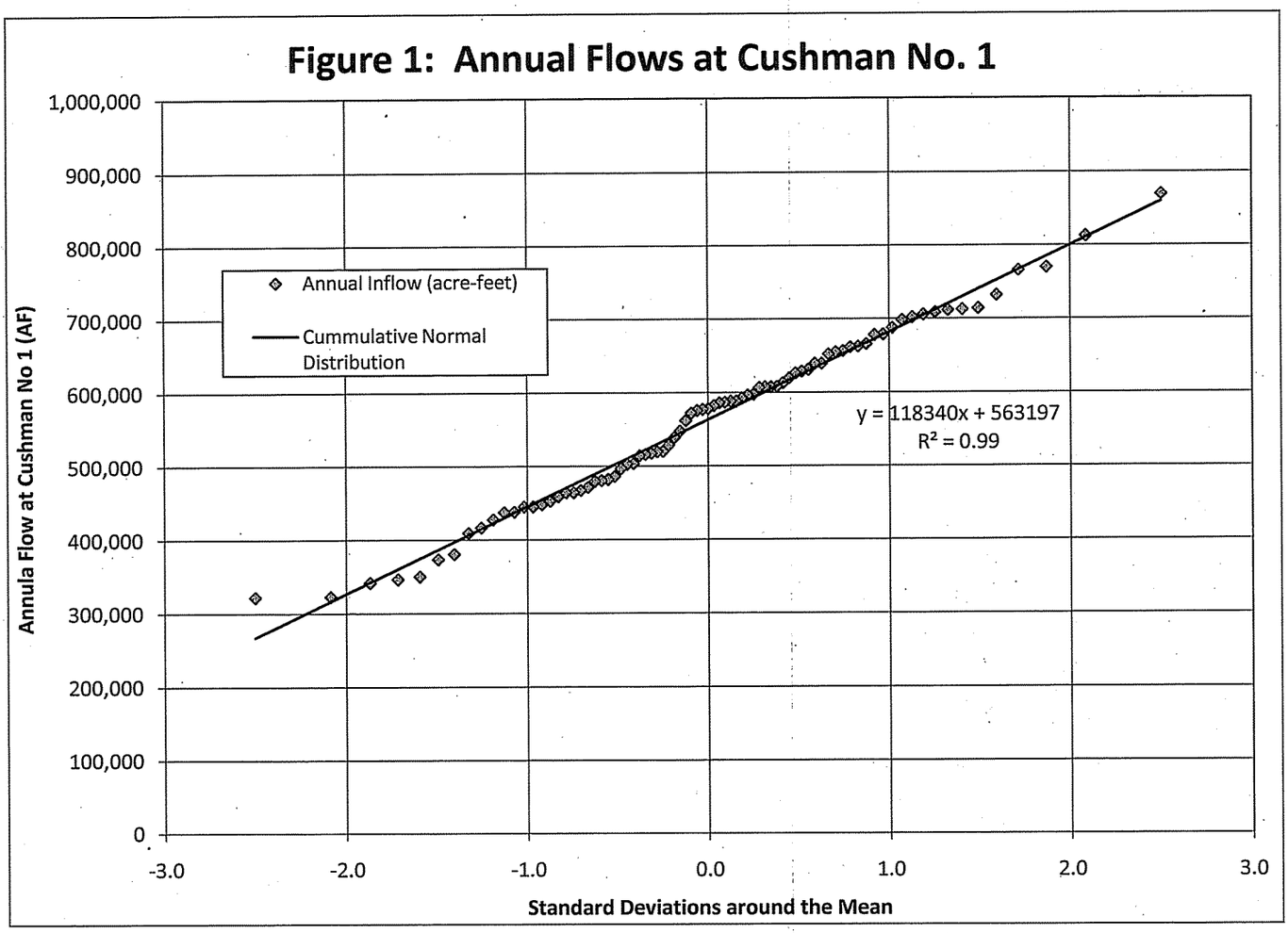
The North Fork Skokomish River water budget for the Cushman Hydroelectric Project area is established in the Amended FERC License as 160,000 afy. The Amended FERC License includes several elements and plans to reduce and mitigate potential impacts as a result of the project. Elements and plans include:

- Maintenance of minimum impoundment elevations, minimum flows and ramping rate conditions,
- Establishment of a Fisheries and Habitat Committee,
- Mainstem Channel Restoration Plan,
- Operational and Flow Monitoring Plan,
- Fisheries and Habitat Monitoring Plan,
- Fisheries Habitat Enhancement and Restoration Plan,
- Flood Damage Reduction and Mitigation Plan,
- Water Quality Enhancement Plan,
- Upstream and Downstream Fish Passage Plans,
- Fish Passage Monitoring Plan,
- Fish Supplementation Plan,
- Hatchery Monitoring Plan,
- Tailrace Monitoring Plan,
- Terrestrial Resources Protection Plan,
- Construction Mitigation Plan,
- Operational Monitoring and Protection Plan,
- Comprehensive Wildlife Habitat Enhancement Plan,
- Threatened and Endangered Species Plan,
- Shoreline Management Plan,
- Recreation Plan,
- Road Management Plan,
- Recreational Use Monitoring Plan,
- Sediment transport adaptive management,
- Threatened Species Take Minimum Measures, and
- McTaggert Creek culvert replacement.

Water availability

The North Fork Skokomish River water budget to be provided by the Cushman Hydroelectric Project to maintain the habitat and water resource downstream is established in the Amended FERC License as 160,000 afy. The average inflow to Lake Cushman is 563,197 afy based on the 81 years of operating record provided by Tacoma Power for flows at Cushman No. 1 Dam. Thus, potentially an average of at least 400,000 acre-feet is available each year for diversion at Cushman No. 2 Dam and power generation at Cushman No. 2 Powerhouse, while maintaining releases from Lake Kokanee to meet the North Fork Skokomish River water budget. Additional inflows tributary to Lake Kokanee will also be available for diversion to the Cushman No 2 Powerhouse.

In wetter years, when more water than the average quantity is available, additional flows can be utilized for power generation up to the maximum capacity of the installed turbines. A statistical analysis of the inflow data for Cushman No. 1 Dam, which passes through into Lake Kokanee and is available at Cushman No. 2 Dam, shows that annual flows are normally distributed (Figure 1) with a standard deviation of 118,340 afy. On this basis, the 10-year peak annual flow (10 percent probability of exceedance) is around 710,000 acre-feet and the 100-year peak annual flow (1 percent probability of exceedance) is approximately 920,000 acre-feet.



Therefore, water is physically available to the extent that inflows reflect annually variable basin yield, storage within Lake Kokanee is exercised, and water releases and other operational requirements contained in the Amended FERC License are observed.

The appropriate annual amount (Qa) for the diversion at Cushman No. 2 Dam is developed by assuming continuous operation of the turbines in Cushman No. 2 Powerhouse, pro-rated among the three consumptive water rights in proportion to their respective instantaneous amounts (Qi), as listed in Table 4:

Table 4. Annual Quantities allocated for City of Tacoma's Cushman No. 2 Powerhouse Water Rights.

Project	Control Number	Form of Use	Priority Date	Instantaneous Quantity (Qi)	Annual Quantity (Qa)	Notes
Cushman No. 2	S2-*02525CWRIS	Consumptive	2/15/1929	1,000 cfs	723,967 afy	All three water rights are additive for determination of Qa
	S2-27420	Consumptive	7/29/1988	1,700 cfs	1,230,744 afy	
	S2-30505	Consumptive	2/12/2009	300 cfs	217,191 afy	
			Totals:	**3,000 cfs**	**2,171,902 afy**	

There are no closures on surface water bodies in WRIA 16. Therefore, surface water is legally available for appropriation.

Impairment of Existing Rights Considerations

Information pertaining to the existing water rights in WRIA 16 were examined for water rights on the North Fork Skokomish River and the Skokomish River downstream of the confluence. The release budget of 160,000 afy is approximately 28 percent of the average inflow of 563,197 afy to Lake Cushman.

There are three surface water claims and one surface water permit downstream of the Cushman Project. All are located on the mainstem of the Skokomish River below the confluence with the North Fork Skokomish River. The permitted surface water diversion owned by James Hunter for 1.33 cfs (S2-26750) is located in Section 12 of T.21N., R.4W. near the mouth of the Skokomish River within the tidally influenced reach. The amount required for release from the Cushman Project (listed above) is significantly greater than the permitted amounts of these downstream water rights and thus no impairment is expected.

The potential impairment of these and other water rights downstream are deemed to have been adequately mitigated under the terms of the Tacoma/Skokomish Tribe Settlement Agreement (discussed below), provided the provisions for flow releases from the Cushman Project are fulfilled as scheduled in the Amended FERC License.

Beneficial Use

In accordance with RCW 90.54.020(1), the proposed use of the impounded surface water for hydroelectric power production represents a beneficial use of water.

Public Interest Considerations

RCW 90.03.290 requires that a proposed appropriation not be detrimental to the public interest. The 1971 Water Resources Act provides the most comprehensive list of legislative policies that guide the consideration of public interest in the allocation of water. These policies generally require a balancing of the state's natural resources and values with the state's economic well-being. Specifically, the policies require allocation of water in a manner that preserves instream resources, protects the quality of the water, provides adequate and safe supplies of water to serve public need, and makes water available to support the economic well-being of the state and its citizens.

The year-round diversion of up to an additional 1,700 cfs under this water right, for a total of 3,000 cfs allocated for power generation at Cushman No. 2 Powerhouse is consistent with state policy without adversely impacting instream flows or other public needs and values. No detriment to public interest could be identified during the examination of the subject application.

Consideration of Protests and Comments

Article VI of the Tacoma/Skokomish Tribe Settlement Agreement, Tribe Support for Amended Project License and Water Right Applications, states that the Tribe withdrew any pending objections to Tacoma Power's water right applications. See Attachment 2.

No other protests or comments were received in lieu of the comprehensive Settlement Agreement that was successfully negotiated amongst various stakeholders, the terms of which are embodied in the Amended FERC License.

CONCLUSIONS

Water must be available.
Water for this water right is considered physically available.

No legal constraints to the use of the water by this right were identified, and the water is considered legally available.

There must be no impairment of existing rights.
The requested diversion is not expected to interrupt or interfere with the availability of water to an existing right.

The water use must be beneficial.
Power generation is considered a beneficial use in accordance with RCW 90.54.020.

The water use must not be detrimental to the public interest.
No considerations that are detrimental to the public interest were identified for the proposed diversion.

RECOMMENDATIONS

Based on the above investigation and conclusions, I recommend that the Application No. S2-27420 be authorized in the amounts and within the limitations listed below and subject to the provisions beginning on Page 3.

Purpose of Use and Authorized Quantities
The amount of water recommended is a maximum limit and the water user may only use that amount of water within the specified limit that is reasonable and beneficial.

- 1,700 cfs (for a total of 3,000 cfs)
- 1,230,744 acre-feet per year (for a total of 2,171,902 afy)
- Power Generation

Point of Diversion
SE¼ of the NW¼ of Section 16, Township 22 North, Range 4 West W.M.

Place of Use
As described on Page 1 of this Report of Examination.

Report Reviewed by: Phil Crane 2/9/2011
Phil Crane Date

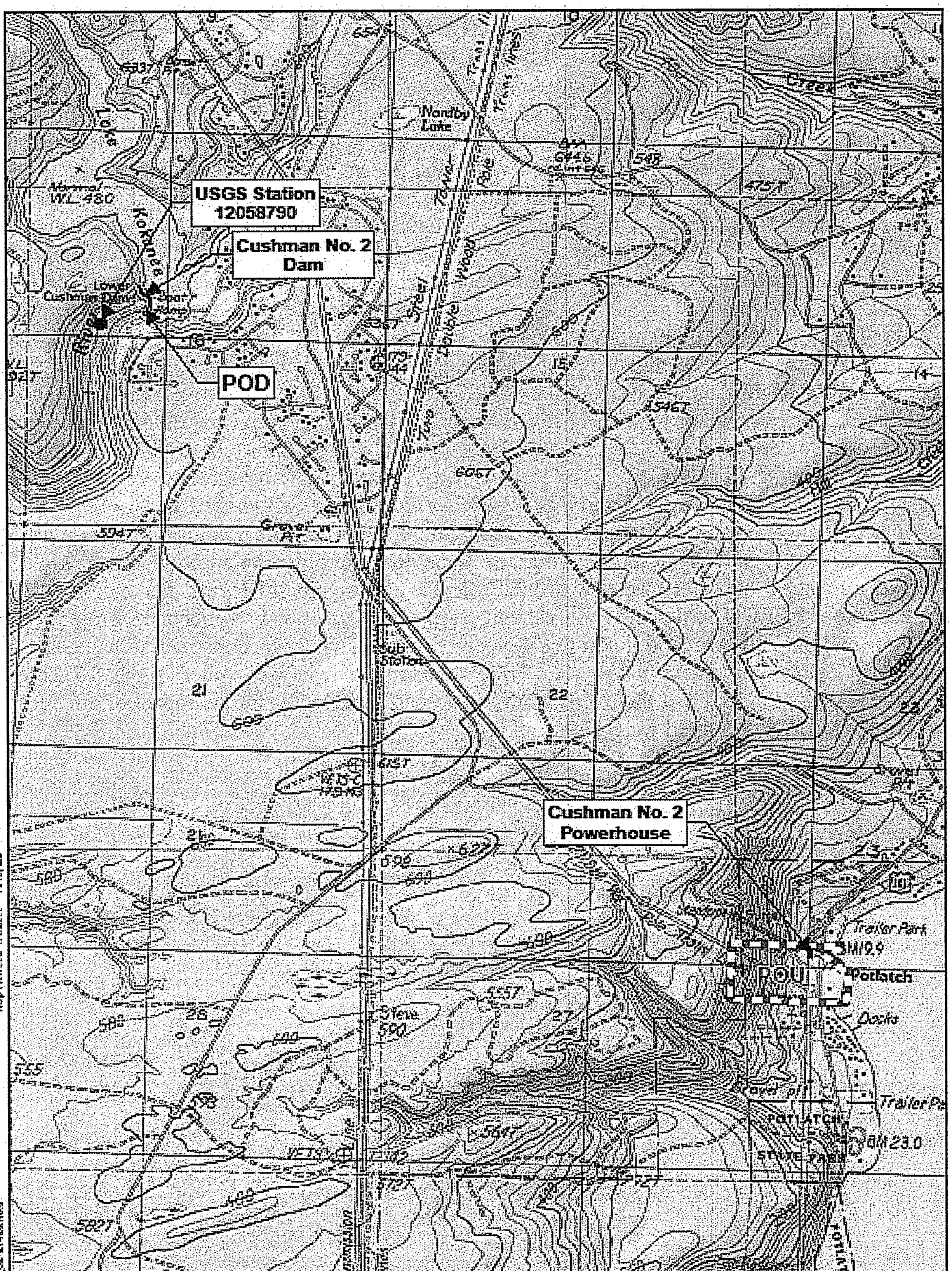
If you need this publication in an alternate format, please call Water Resources Program at 360 407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

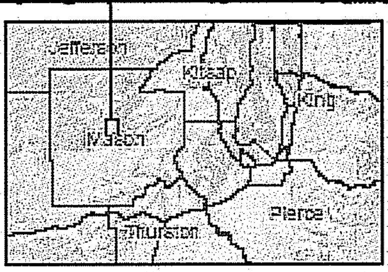
Attachment 2 – Article VI of the Settlement Agreement

ARTICLE VI
TRIBE SUPPORT FOR AMENDED PROJECT LICENSE AND WATER RIGHT APPLICATIONS

6.1 Amended Project License. Within thirty (30) days of execution of the Agreement, the Tribe agrees to deliver a letter to FERC, executed by the Tribal Council, notifying FERC of the Tribe's full support for: (1) FERC's incorporation, without modification, of the Settlement License Articles as enforceable articles of the Amended Project License; and (2) the term of the license being extended to June 30, 2048. The Tribe will cooperate fully with Tacoma to obtain an Amended Project License which is consistent with the Amended License Settlement Agreement. The Tribe agrees that, so long as this Agreement remains in effect, it will refrain from taking any position publicly or privately that indicates Tacoma's relicensing application should be denied or that the Settlement License Articles are deficient.

6.2 Washington Department of Ecology Approval. From and after the Effective Date, the Tribe covenants to withdraw any pending objections to Tacoma's application for water rights (Washington Department of Ecology Water Right Application Numbers S2-27419 and S2-27420) and to not object to additional water right applications necessary to store or divert water for the Project's existing hydroelectric generation, the North Fork Powerhouse (FERC Settlement Agreement, Appendix 8) or to implement the Settlement License Articles. Within sixty (60) days of the Effective Date, the Tribe agrees to deliver a letter to WDOE, executed by the Tribal Council, notifying WDOE of the Tribe's withdrawal of any objections relating to Tacoma's application for water rights (Washington Department of Ecology Water Right Application Numbers S2-27419 and S2-27420) and that the Tribe does not object to additional water right applications necessary to store or divert water for the Project's existing hydroelectric generation, the North Fork Powerhouse (FERC Settlement Agreement, Appendix 8) and Amended Project License fish supplementation facilities. Nothing in this Agreement shall have, or be construed to have, any effect on the existence, extent, or quantity of the Tribe's federally reserved water rights. Tacoma expressly acknowledges and agrees that this Agreement has no past, present, or future impact or effect of any kind on the Tribe's federally reserved water rights.





POD = Point of Diversion
POU = Place of Use

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Data Sources: USGS Topographic Maps, ESRI Data 2008.
Projection: NAD 1983, Washington South (ft).

S2-27420
Tacoma Power - Cushman No. 2 Mason County, Washington
GEOENGINEERS — Attachment 1