

## **EXHIBIT B — PROJECT OPERATION AND RESOURCE UTILIZATION**

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### **B.1 ALTERNATIVE SITES CONSIDERED**

In developing the proposed configuration of the Project the following alternative sites and development options were considered:

- Rehabilitation of the existing project facilities on the right (west) bank of the river.
- Development of power facilities on the left (east) bank of the river, with the following two options.

Of the two main options, redevelopment on the East Bank of the river was found to be the most economically attractive while also offering some environmental benefits.

In general, the attractiveness of rehabilitating an existing facility is potential cost savings and fewer environmental impacts due to reuse of existing facilities. However, since the existing plant is over 80 years old and has been subjected to both vandalism and corrosion since its decommissioning almost 50 years ago, there was little that could be cost-effectively reused other than the intake structure at the dam, surge tanks with extensive rehabilitation, and powerhouse excavation. Much of the rest of the existing facility would have to be demolished and removed prior to constructing a new plant. Other issues including hydraulic limitations due to the waterway length/head ratio, limited intake capacity and difficult construction access issues also reduced the attractiveness of the rehabilitation option.

The main advantage of the redevelopment option on the east bank is that this site is suitable for a higher capacity powerplant that makes better use of the hydropower potential at Enloe Dam. From a constructability standpoint, the east bank also has better road access and better topography for gaining road access to the powerplant.

From an environmental perspective the redevelopment option involves additional land disturbance but benefits the river environment by moving the powerhouse tailrace exit about 460 feet upstream to the pool at the base of Similkameen Falls.

Further evaluation of redevelopment options on the East bank considered two potential powerplant sites:

- Upstream of Similkameen Falls with a tailrace channel below the falls. This is the project proposed in this license application.
- Downstream of Similkameen Falls.

The main drivers for the upstream powerplant location are as follows:

- Reduce length, hydraulic head losses and cost of the headworks.
- Reduce length of penstock which affects head loss, hydraulic stability and transient pressures and obviates the need for surge tank or synchronous bypass valve.
- Improve construction access and constructability of the powerhouse sub-structure which is affected by proximity to the river channel.
- Improve construction access and constructability of the tailrace.
- Avoid congested area of river valley at old Similkameen powerhouse.
- Maintain road access to the river bank downstream of the Falls.

The main drivers for the downstream location are as follows:

- Utilize disturbed site of the original (1905) powerhouse location.
- Reduce the length of the deep tailrace channel required for the upstream location.
- Reduce tailwater level which increases gross hydraulic head.
- Avoid disturbance to the east side of the Falls for the new tailrace.

These and other issues are discussed in following sections:

The upstream powerhouse site offers better potential road access for both construction and operations. The narrowness of the east bank between the river channel and the steep cliffs of the river canyon restricts the space available for both a penstock and an access road. In order to install both there is a need to either cut into the steep slope or construct a retaining wall on the downslope side.

The upstream site with the longer long tailrace channel also offers the potential for gaining vehicle access into the powerhouse excavation via a road excavated into the side of the tailrace channel. The downstream powerhouse site would not be accessible by road and would probably have to be accessed by crane at considerable additional cost.

Overall the upstream option offers the most cost effective waterway configuration. The main reason that the waterways for the upstream option would be less expensive than those for the downstream option is that the estimated unit cost of tailrace channel excavated in rock is less than half that of steel penstock including the excavation and supports required.

Hydraulic transient considerations in the penstocks also favor the upstream site. The longer penstock for the downstream option will probably require a synchronous bypass valve as was proposed in 1991 to help control hydraulic transients in the pipeline. Since few manufacturers of standardized turbine generator units offer such a valve as part of the design, it would have to be a custom-designed ancillary facility.

The penstocks for the upper option are short enough to not require a synchronous bypass valve. A double penstock configuration is also proposed for this option whereby each turbine has its own penstock and intake gate, which removes the need for a penstock bifurcation and turbine shutoff valves.

The proposed downstream option would take advantage of an existing excavation adjacent to foundations of the old Similkameen powerplant. However, the narrowness of the valley, steepness of the side slopes, and close proximity to the river channel pose construction challenges that will be difficult and potentially costly to solve. It will also be very difficult to gain vehicle access into the proposed powerhouse excavation, therefore construction access would be by crane from the area of the old powerhouse.

Risks associated with dewatering and construction at the downstream site are perceived to be higher than the upstream option. Construction of the downstream powerhouse option will require the erection of a temporary cofferdam between the river and the proposed powerhouse site. It is expected that the riverbed at this location will be bedrock outcroppings and therefore not amenable to any form of driven piling. Either the cofferdam will have to be supported by cantilever piers drilled into rock, by an arched cofferdam, or by a braced cofferdam which is supported by horizontal bracing that spans the powerhouse site.

The tailrace excavation required for the downstream option is less than that for the upstream option since the downstream side is immediately adjacent to the river channel. The upstream location for the outlet of the tailrace channel for the upstream option relative to the downstream powerhouse site may decrease the gross hydraulic head available at the upstream site. On the other hand, the hydraulic head losses in the waterways for the upstream option are expected to be slightly less than that of the downstream option due to the shorter penstock together with less hydraulic loss in an open channel versus a closed pipeline. Therefore, for the purposes of comparison the hydraulic head and estimated average annual power generation is assumed to be the same.

In summary, engineering design, constructability and economics issues favor the upstream powerhouse location.

The environmental effects of the alternatives are discussed in Exhibit E.10. The primary potential environmental effects of the powerhouse are on recreation, fish, and water quality. In each case, the upstream powerhouse location would have less impact. The

downstream location would have somewhat lower visual effects. Both locations would have similar (and avoidable) cultural resources effects.

From an economics standpoint, the power generation benefits from each configuration would be similar, however from a cost standpoint, the upstream location appears to be more cost effective due to savings in the overall cost of water conveyance structures, better construction access and better constructability.

## **B.2 ALTERNATIVE FACILITY DESIGNS, PROCESSES AND OPERATIONS CONSIDERED**

The following alternative facility designs were considered:

1. Intake design – Intake designs involving a full fish screen designed to current WDFW screen standards, a higher velocity inclined screen and a closely spaced trashrack with velocity limits to exclude adult resident fish were considered. The trashrack was selected based on the limited resident fish population and the differential survivability of fish entrained in the turbine flow. The design excludes larger fish from the intake, as they experience substantially greater mortality when passing through turbines. Smaller fish in the size range that would pass through the trashrack would experience a substantially greater survivability when passed through turbines, therefore the design does not propose to exclude them from the project intake.
2. Number of penstocks – A single penstock and dual penstocks were considered. Dual penstocks were selected due to the short length and cost savings in bifurcations and butterfly valves needed for a single penstock.
3. Type of generating units – Kaplan, Francis and double runner Francis units were considered. Kaplan units were selected because they have the advantages of higher generating efficiency over a wide range of flow and higher survivability for small fish passing through the turbine.
4. Number of generating units – A single unit powerhouse and two unit powerhouse were considered. The two unit powerhouse was selected as it provides better efficiency over a wider range of flow and also provides some redundancy in the event of a unit outage. The proposed design allows operations closer to maximum turbine capacity at lower river flows, which is safer for fish passing through the turbine. It also maintains higher velocities in the draft tube, keeping adult fish in the tailrace from reaching the turbine.

### **B.3 PLANT OPERATION**

The proposed plant will operate automatically. The estimated gross average annual plant factor, before generation losses, is 58 percent.

The plant will be operated in run-of river mode in adverse, mean and high water years to maintain the water level just below the top of the crest gates (El. 1049.3). During the spring-summer spill season the crest gates on the spillway will be operated to maintain the water level between 1049.3 and 1050.3 until such time as the gates are fully lowered when water levels will be controlled by the capacity of the existing spillway.

### **B.4 DEPENDABLE CAPACITY AND ENERGY GENERATION**

The estimated dependable capacity of the Project is based on the lowest monthly average power output occurring during winter since this is the critical peak electrical load period in the Northwest. The critical stream flow used to determine dependable capacity occurred in January 1930, when the monthly average flow was 215 cfs. The dependable capacity at 215 cfs is about 1140 kW.

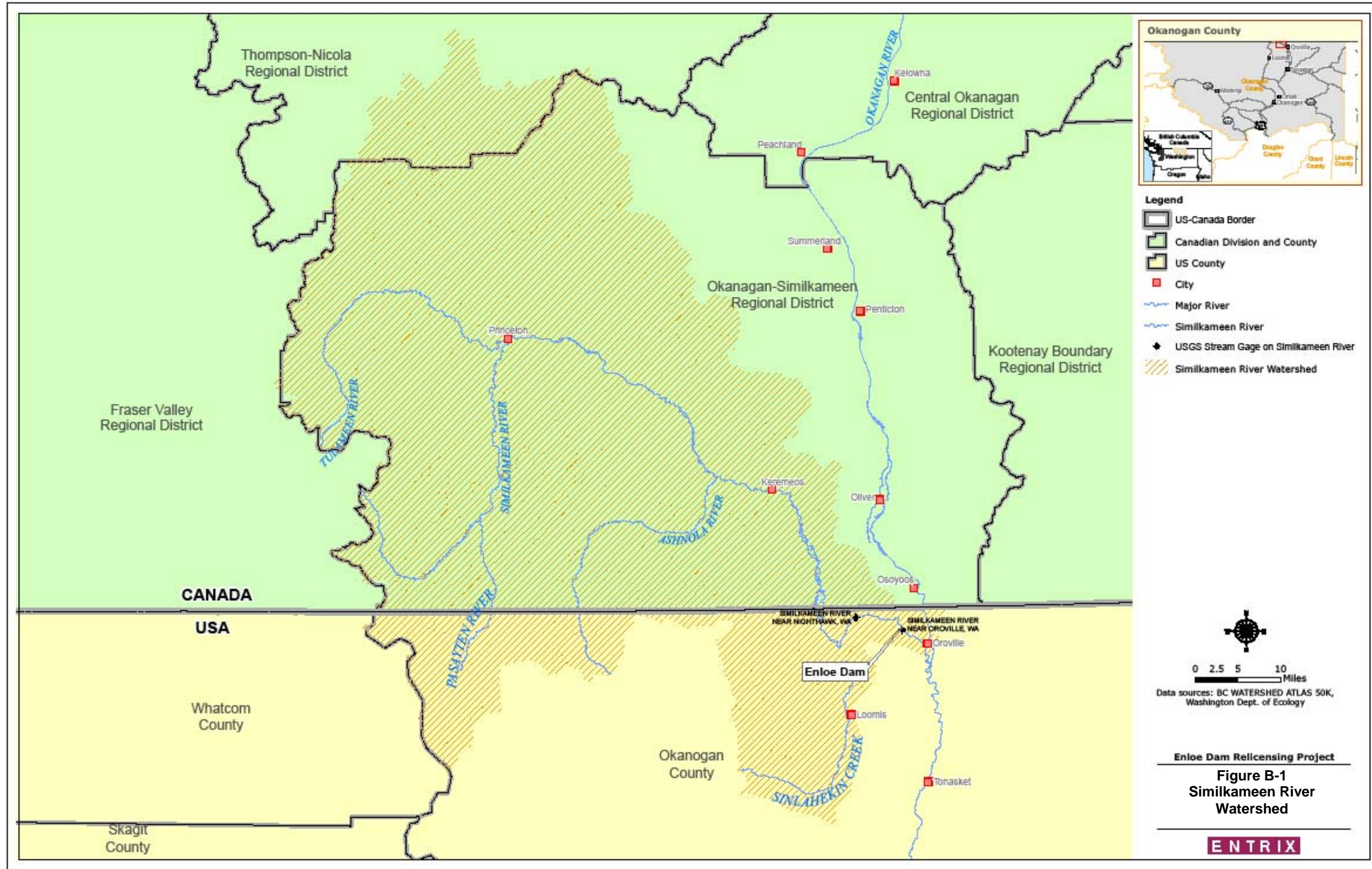
The estimated gross average annual energy generation (excluding losses) based on flow data from October 1, 1928 through September 30, 2006 is 47.3 GWh annually. The estimated net average annual generation including a 5 percent allowance for station service, unscheduled outages, and transformer losses is 45.0 GWh annually.

### **STREAMFLOW DATA**

The Similkameen River joins the Okanogan River in Oroville in north central Washington, approximately eight miles south of the Canadian border. Enloe Dam is located on the Similkameen River 8.8 miles upstream from the confluence. The majority of both river basins are located in British Columbia. At their confluence, the Okanogan and Similkameen River basins are similar in size (3,150 mi<sup>2</sup> and 3,592 mi<sup>2</sup>, respectively) but the mean annual flow of the Similkameen River is, on average, more than 3.3 times the mean annual flow of the Okanogan. The Similkameen is also a more variable river; although its median daily flow is only 1.3 times as high as that of the Okanogan, peak flows on the Similkameen River are on average more than 8 times as high.

The Similkameen River basin drains the eastern side of the Cascades in Washington and British Columbia and the Thompson (or Interior) Plateau of British Columbia (see Figure B-1). The river is fed by three main tributaries, which include the Pasayten River near Manning Park, BC (most of which is in northern Washington), the Tulameen River at Princeton, BC and the Ashnola River near Keremos, BC. Downstream of the international border at Chopaka, the Similkameen River receives almost all of its incremental flow within Washington from the Palmer Lake/Sinlahekin Creek watershed. Flows at high stages are regulated somewhat by a natural diversion into and release from Palmer Lake.

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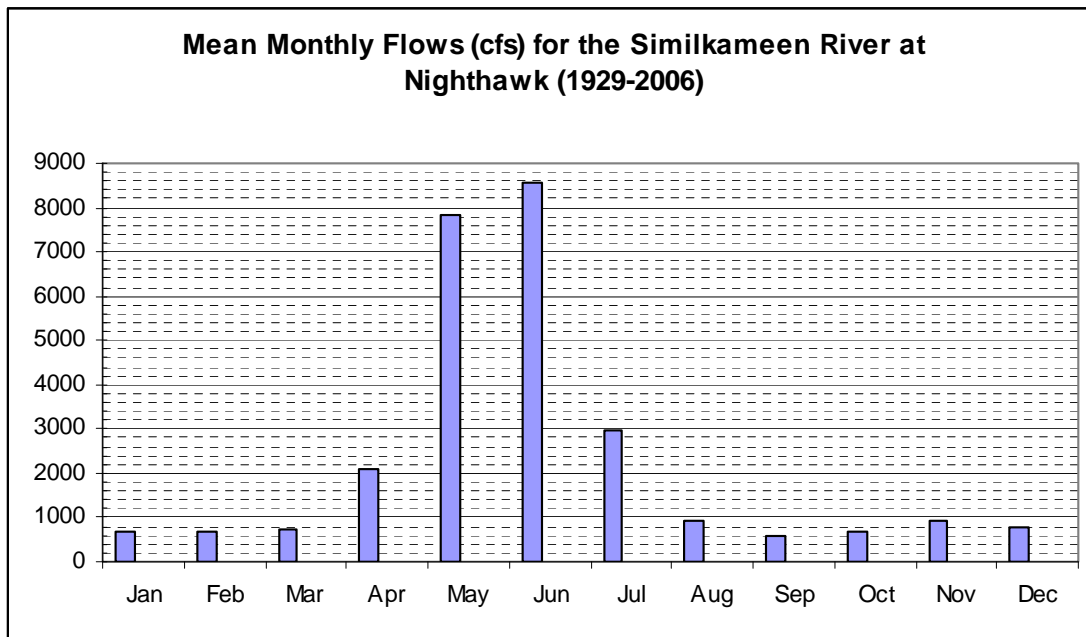
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Much of the watershed is rugged with high relief, especially along the southern and western boundaries, where elevations range upwards from 7,000 to 8,600 feet along the western divide. The major river valley bottoms range from about 2,300 feet at Princeton, BC to 900 feet at Oroville. From Princeton, BC to Palmer Lake, WA (at 1,160 feet), the Similkameen River flows through a predominately wide, flat-bottomed, low-gradient (dropping approximately two feet per thousand) U-shaped valley reflecting geologically recent glaciation. Downstream of Palmer Lake, the river takes an abrupt northward turn into a narrow, steep valley descends at a gradient of about 2.4 feet per thousand to Shanker's Bend, at the upstream end of the Enloe impoundment. At this point the river channel turns southeastward toward Enloe Dam and on towards Oroville. Prior to dam construction the river channel narrowed and steepened considerably to a gradient of approximately seven feet per thousand (including the drop over Similkameen Falls). As a consequence, the resulting impoundment is very narrow, long and sinuous. Below Similkameen Falls, the river descends at a gradient of about 2.8 feet per thousand over the lower 8.7 river miles into Oroville.

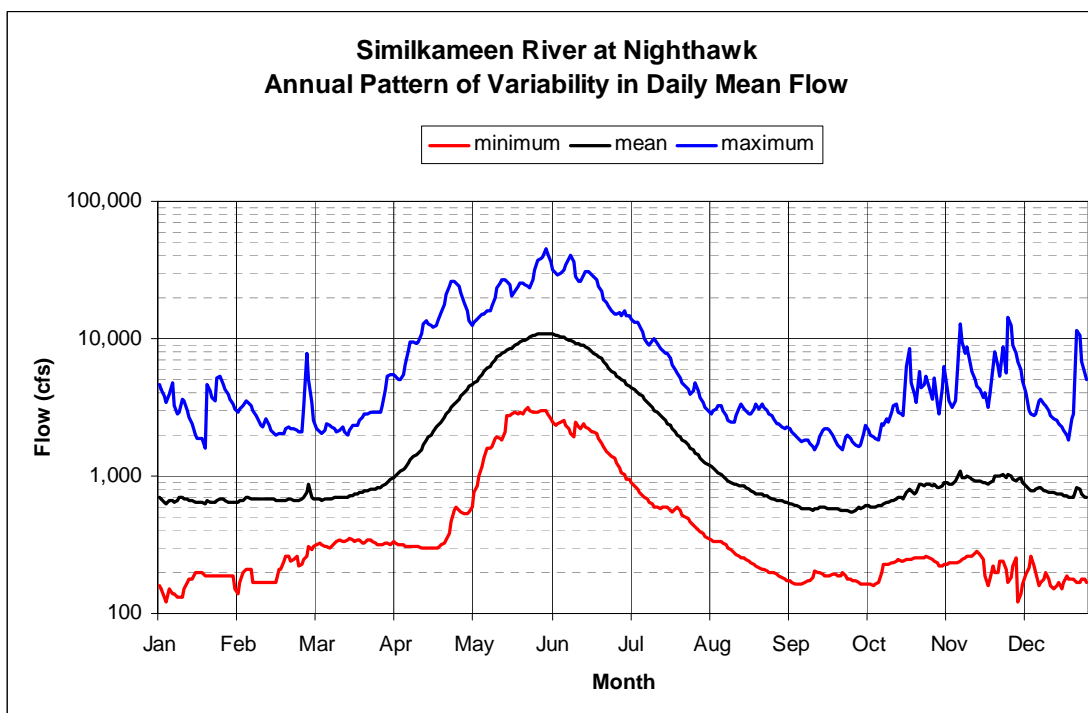
Continuous daily flows in the Similkameen River have been recorded by the USGS since 1911. From 1911 to 1928 USGS gaging stations 12443500 and 12443600 were located downstream of the Similkameen Falls at various locations near Oroville. Since then, the USGS gaging station 12442500 has been located at river mile 15.8 about three miles downstream from Nighthawk and seven miles upstream from Enloe Dam. More recently (since October 1996), the Washington State Department of Ecology (Ecology) has recorded continuous daily flows in the Similkameen at station 49B070 in Oroville at river mile 5.0. The additional drainage area between the Nighthawk gage and the dam is only 25 square miles, adding only 0.7 percent to the total. Because this small area adds an insignificant flow to the river flow at the dam, the long-term gage data at Nighthawk provides the best representation of historical flows at Enloe Dam.

From hydrologic years 1929-2006, mean annual flows have ranged from 1,038 cfs in 2001 to 4,831 cfs in 1972, with an overall average of 2,290 cfs. Average monthly flows have been lowest in September (592 cfs) and relatively low from August through March, ranging up to 910 cfs. Flows have increased substantially during the spring runoff period beginning in April and peaking in May (7,830 cfs) or June (8,570 cfs). The maximum average monthly flow was 24,900 cfs in June 1972, while the minimum average monthly flow was 191 cfs in September 2003. Figure B-2 depicts the mean monthly hydrograph from 1929-2006, while Figure B-3 shows the variation in recorded mean, minimum, and maximum daily mean flows within each month. Annual flood and daily mean flow exceedence curves are shown in Figure B-4. Individual monthly exceedence charts are provided in Appendix B.1.

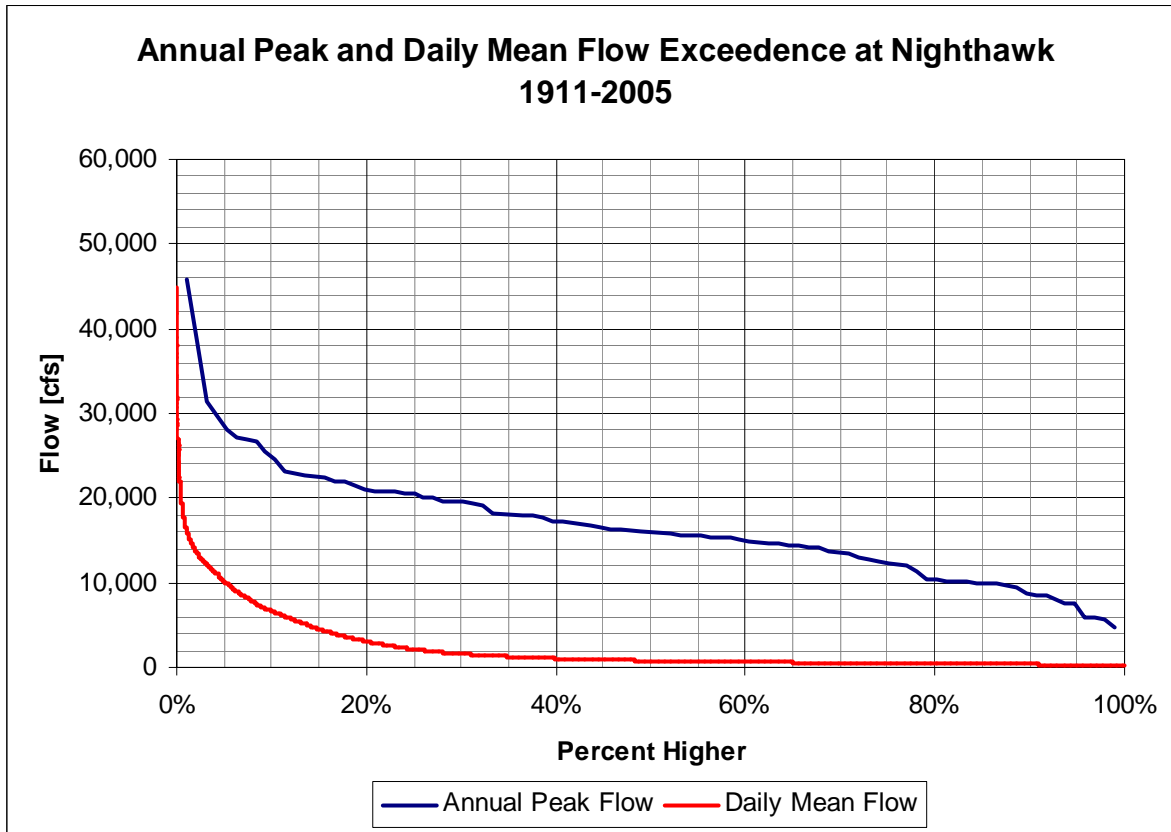
**Figure B-2: Mean Monthly Flows (cfs) for the Similkameen River at Nighthawk (1929-2006)**



**Figure B-3  
Intra-Annual Variation in Daily Mean Flow at Nighthawk (1929-2006)**



**Figure B-4: Annual Peak and Daily Mean Flow Exceedence at Enloe Dam (1911-2005)**



The minimum, maximum and mean instantaneous and daily average flows recorded at the USGS gage 12442500 at Nighthawk during the period October 1, 1928 through September 30, 2006 are shown in Table B-1.

**Table B-1: Characteristic Similkameen River Flows at Nighthawk**

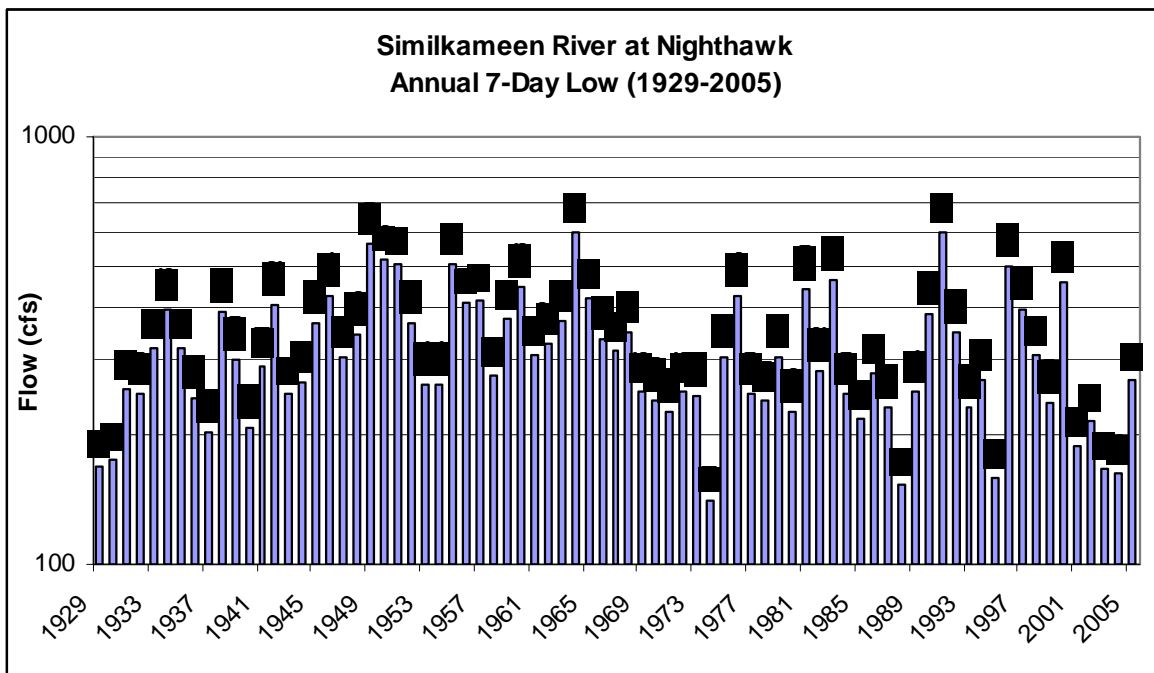
FLOW	CFS
Maximum Average Daily Flow (06/01/1972) (cfs)	44,800
Maximum Instantaneous Flow (06/01/1972) (cfs)	45,800
Minimum Average Daily Flow (01/04/1988 and 12/04/1994) (cfs)	120
Minimum Instantaneous Flow (01/03/1974) (cfs)	65
Mean Daily Flow (10/01/1928 to 09/30/2006) (cfs)	2290

The median annual 7-day low flow over the period of record (1929-2005) is 300 cfs, and has ranged from 141 cfs in 1974 to 601 in 1964 (Figure B-5 and Figure B-6). Since 1974, however, the mean and median annual 7-day low flows have been significantly (14% and 22%, respectively) lower (Table B-2).

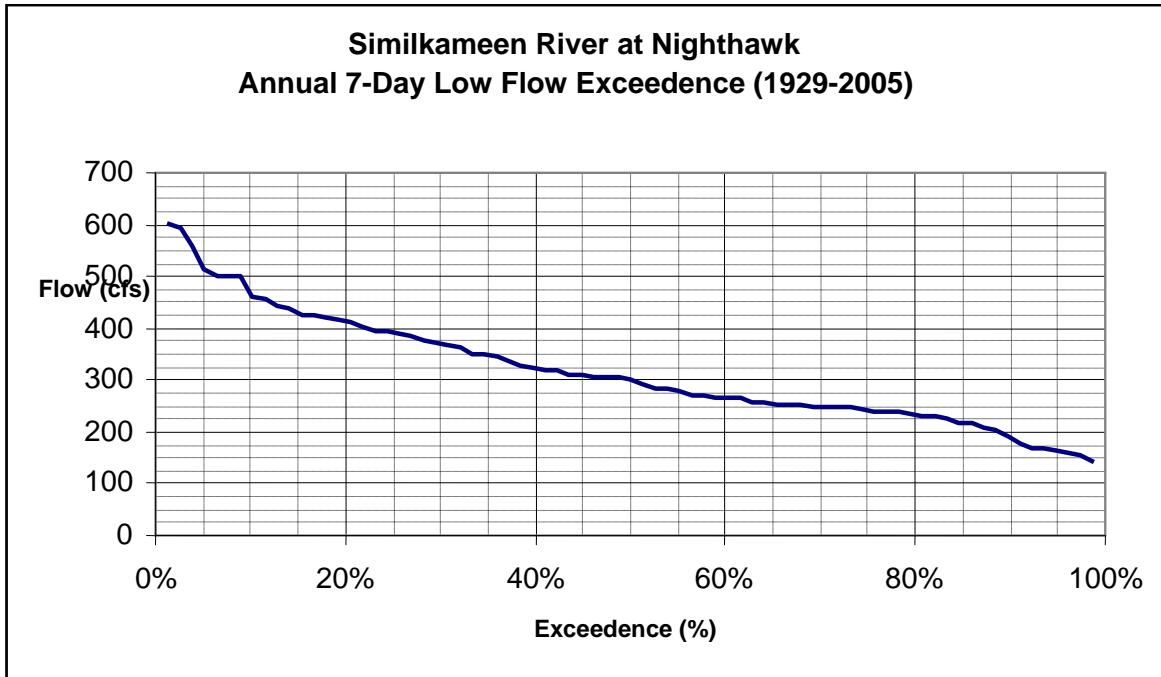
**Table B-2: Comparison of Annual 7-Day Low Flows for Pre and Post 1974**

	Mean	Median	Max	Min
<b>1929-2005</b>	317	300	601	141
<b>1929-1973</b>	334	319	601	170
<b>1974-2005</b>	292	262	595	141

**Figure B-5: Similkameen River at Nighthawk Annual 7-Day Low (1929-2005)**

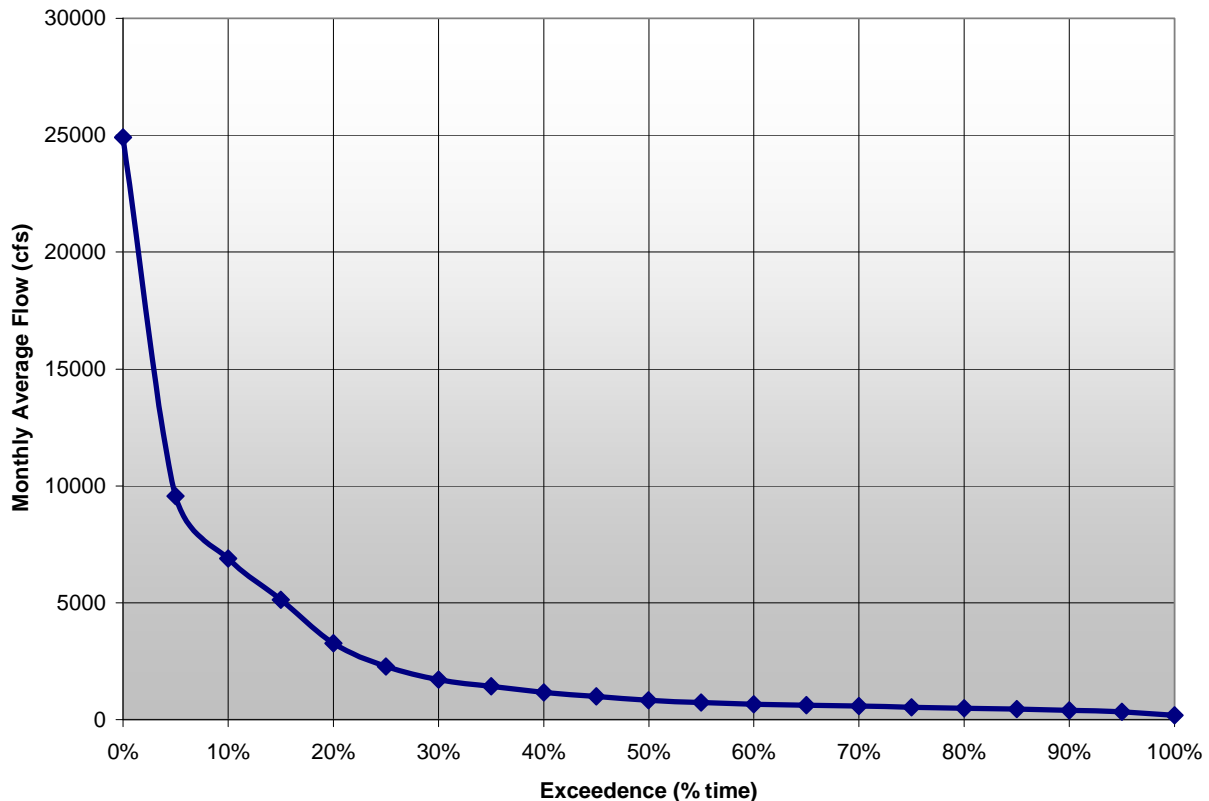


**Figure B-6: Similkameen River at Nighthawk Annual 7-Day Low Flow Exceedence (1929-2005)**



A monthly flow duration curve compiled from USGS gage data at Nighthawk in the period October, 1928 through September 2006 is shown on Figure B-7.

**Figure B-7: Monthly Flow Duration Curve**



## STORAGE CAPACITY AND RULE CURVE

Enloe Reservoir provides the headpond for the hydroelectric development. Impoundment storage capacity at various elevations is described in Exhibit A.2. The area-capacity curve for the Project is shown in Figure B-8.

At present, the reservoir surface water level is controlled by stream flow, the hydraulic rating curve of the spillway crest, and the backwater curve extending upstream from the impoundment.

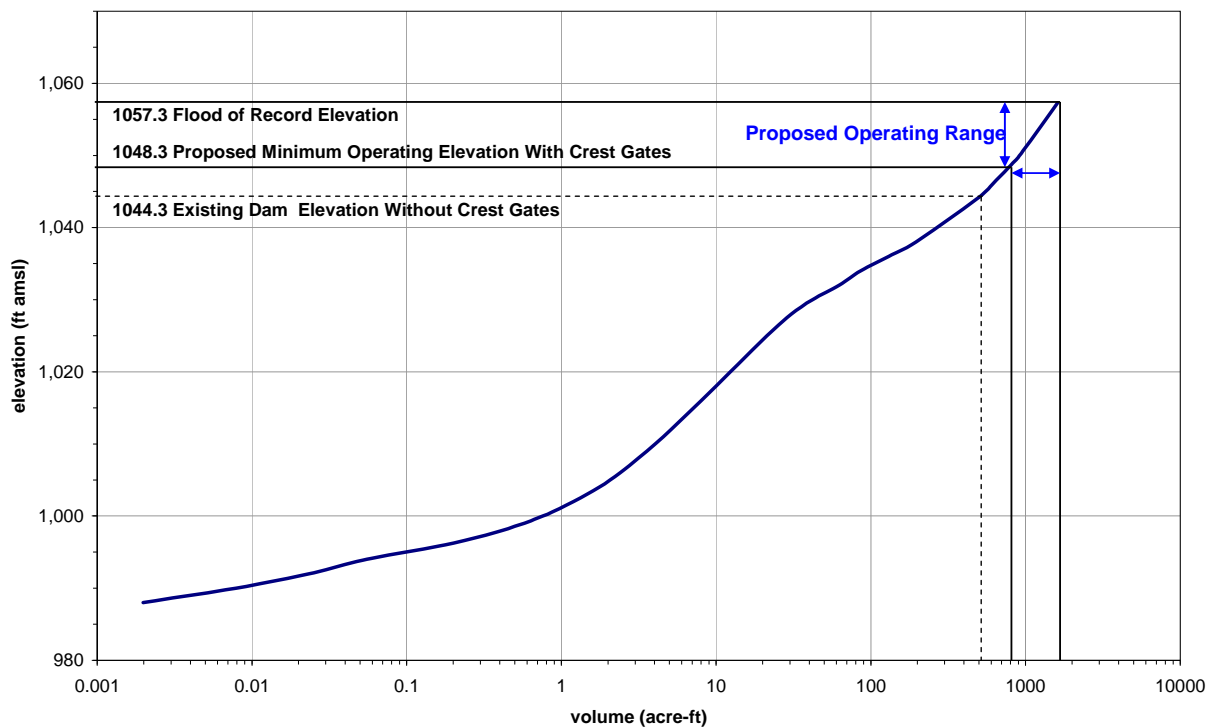
The current minimum water-surface elevation is set by the existing spillway crest of Enloe Dam (El. 1044.3 feet). The top of the proposed crest gates will be at El. 1049.3 feet. With the proposed crest gates in place the normal minimum operating water level in the reservoir will be maintained at El. 1048.3 feet by adjusting the flow through the intake structure. As river flow increases beyond the hydraulic capacity of the plant, water-surface elevation will be maintained at or below 1050.3 feet by lowering the crest gates.

During high peak flows, when the crest gates have been completely lowered, water-surface elevation will be determined by the river.

Figure B-8 shows the relationship between impoundment volume and water-surface elevation for water-surface elevations between El. 1044.3 (existing spillway crest) and El. 1057.3 (flood of record). Table B-3 lists the reservoir and usable storage volumes for the proposed operation.

**Figure B-8: Enloe Reservoir Area-Capacity Curve**

Enloe Impoundment Storage Volume vs. Water-Surface Elevation



**Table B-3: Reservoir Volumes for Existing and Proposed Conditions**

Elevation Constraint	Water-Surface Elevation <i>ft amsl</i>	Surface Area <i>acres</i>	Average Depth <i>ft</i>	Reservoir Volume <i>acre-ft</i>	Usable Volume <i>acre-ft</i>
Approach channel invert	1038.0	39.8	4.9	196	--
Existing dam-crest	1044.3	60.1	8.4	507	311
Existing mean flow	1046.0	67.1	9.1	613	417
Proposed minimum elevation	1048.3	76.6	10.1	775	579
Proposed spill elevation	1050.3	88.3	10.6	938	742
Flood of record	1057.3	103	15.7	1614	1418

With the Project in operation, the reservoir surface water level will depend on stream flow, the hydraulic capacity of the powerplant, crest gate operation, and the rating curve of the spillway crest. However, The District proposes to operate the Project in the run-of-river mode using a water level sensor in Enloe Reservoir that will regulate the flow through the powerplant to balance reservoir inflow and outflow, keeping the reservoir near full.

At times when the flow in the river is less than the powerplant hydraulic capacity of 1,600 cfs (about 70% of the time), the normal operating level of the reservoir (El. 1048.3 feet) will be about one foot below the top of the spillway crest gates (El. 1049.3) to avoid spill.

During high flow periods, when streamflow is between 1,600 cfs and 16,500 cfs (about 29% of the time), water will spill over the gates and the water level would be automatically regulated by a water level controller to keep water level within the range of El. 1049.3 feet to 1050.3 feet.

During very high flow periods when streamflow exceeds 16,500 cfs (about 1% of the time), the crest gates on the spillway crest will be fully lowered and the water level on the reservoir will be controlled by the hydraulic rating curve of the spillway crest.

## POWERPLANT CAPACITY AND EFFICIENCY

Table B-4 shows the estimated hydraulic capacity, efficiency and electric power output at the generator terminals for the proposed Enloe powerplant.

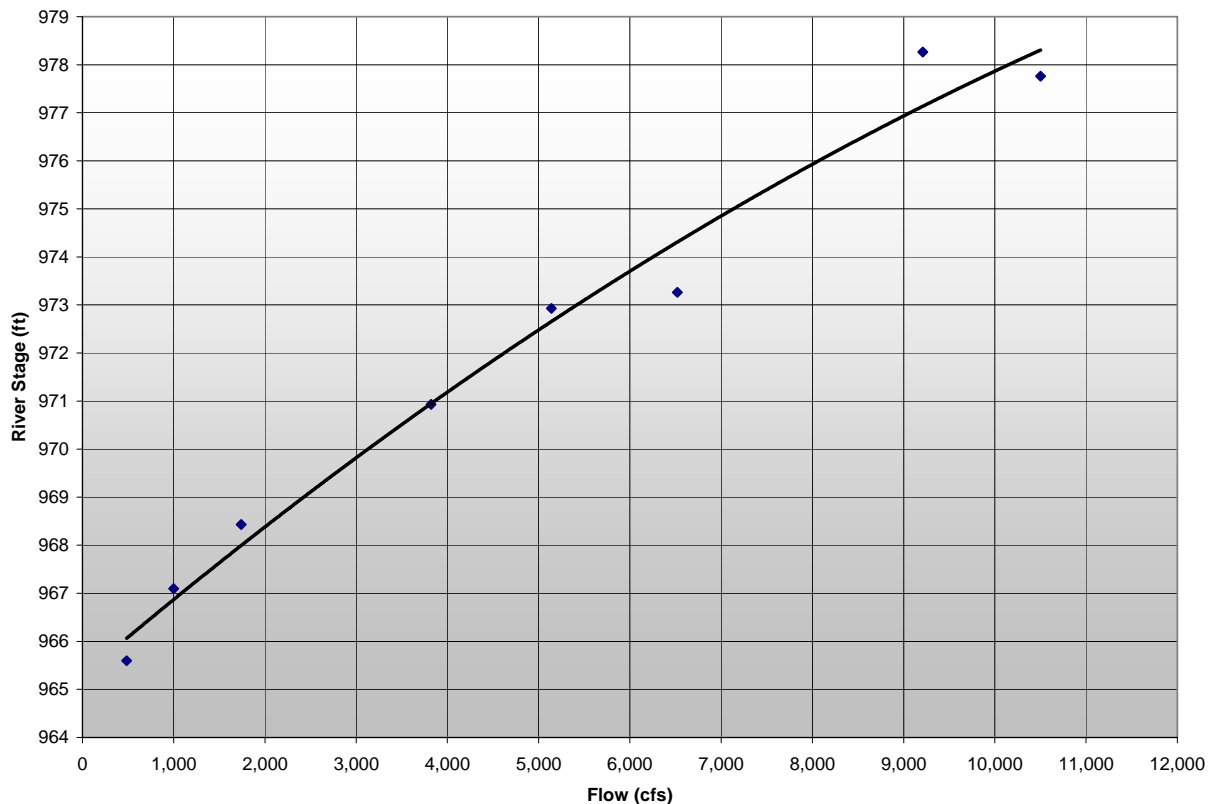
**Table B-4: Enloe Hydroelectric Project Hydraulic Capacity, Plant Efficiency and Generator Output**

Description	Turbine Gate Opening		
	100%	50%	Best Efficiency <sup>1</sup>
Powerplant Hydraulic Capacity (cfs)	1600	960	800
Plant Efficiency (%)	86.3%	88.4%	88.6%
Estimated Generator Output (kW)	9000	5750	4840

<sup>1</sup>Best efficiency is the gate opening at which the Kaplan turbine generator operates at peak efficiency.

## TAILWATER RATING CURVE

The estimated tailwater rating curve at the exit of the tailrace channel is shown on Figure B-9. The rating curve has been developed from a series of tailwater elevations taken in the location of the proposed tailrace exit below Similkameen Falls in the period June through August 2007.

**Figure B-9: Tailwater Rating Curve**

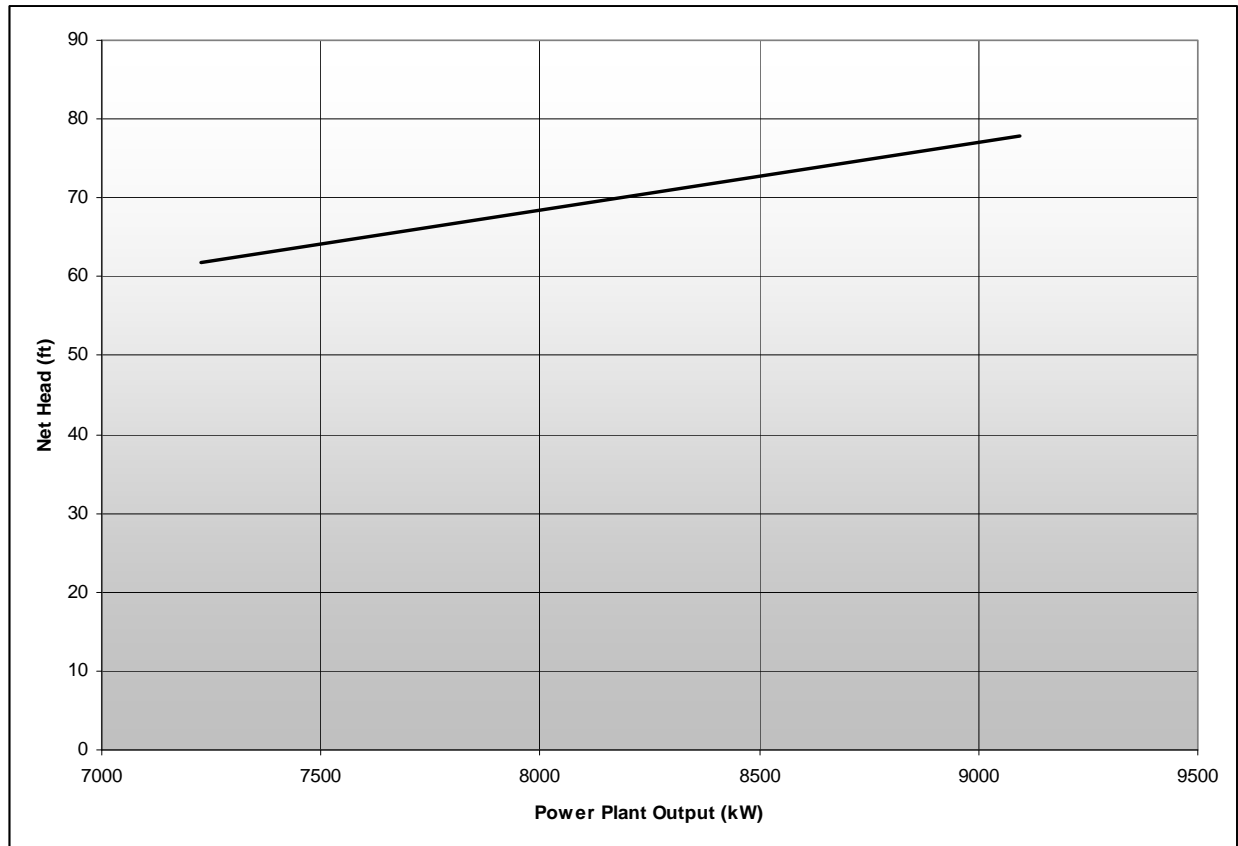
## POWERPLANT CAPABILITY

The maximum powerplant output capability versus net hydraulic head is shown on Figure B-10.

The hydraulic head is controlled by fluctuations in headwater and tailwater levels upstream and downstream of Enloe Dam. Net head at the plant was estimated based on mathematical modeling of plant operations using daily average flow data from the upstream gage (No. 12442500 Similkameen River near Nighthawk) from Water Year 1928 to Water Year 2006.

The maximum net head of 82.6 feet occurred on January 6, 1930 when the crest gates were raised and daily average flow through the powerhouse was 150 cfs. The estimated minimum net head is 64 feet which occurred during flood flows on June 6, 1972. The normal net head (based on the median of the data) is 80.7 feet.

**Figure B-10: Maximum Powerplant Output Capability Versus Net Hydraulic Head**



## B.5 SYSTEM AND REGIONAL POWER NEEDS

Power generated by the Project is necessary for the District to fully serve its customers. A need exists in the region for the Project power, as the community is steadily growing, and the District can use the power generated by the Project to displace power it currently purchases from other suppliers and in the power market. The greatest increase in power needs in the region is occurring in the residential sector. There also has been some commercial growth, but very little industrial load growth.

The Districts' largest load is currently the sawmill, operated by the Colville Tribe (Colville Indian Precision Division), comprising approximately 10 percent of the total District load.

The Project is located in the Douglas load control area, at the end of the District's transmission system, and would provide additional benefits by reducing transmission losses and increasing the efficiency of energy delivery to its customers.

## LOAD INFORMATION

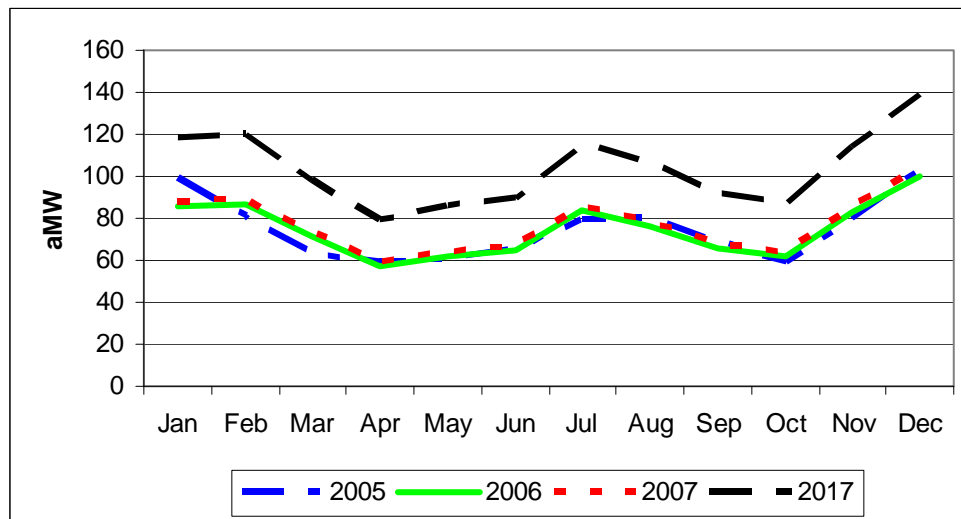
Historical and projected average monthly loads are depicted in Table B-5 and Table B-6, respectively, as well as in Figure B-11. Projected loads are based both on historical load growth and on anticipated growth in the District's service area.

**Table B-5: Historical District Load (aMW)**

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Jan	74.9	77.7	90.9	78.3	107.3	81.9	91.1	100.1	109.0	100.3	93.9	97.2	96.5	85.7	77.5	95.8	99.3	85.5
Feb	83.4	77.4	66.1	66.4	92.2	83.4	80.3	92.0	95.7	81.1	87.7	89.4	91.9	80.5	72.7	81.0	80.8	86.4
Mar	61.5	58.2	62.3	56.7	74.7	62.8	69.6	68.4	79.7	67.3	73.9	72.7	67.1	75.0	59.0	60.0	63.3	71.0
Apr	47.6	51.5	53.9	63.8	60.5	51.7	62.9	57.8	63.6	60.3	64.4	59.8	52.7	55.9	52.4	55.7	59.1	57.0
May	53.4	51.3	55.5	67.3	64.6	57.4	59.3	63.3	61.4	62.8	68.2	67.1	56.9	58.4	56.7	59.4	59.7	62.1
June	64.7	53.8	56.9	71.1	62.7	62.0	66.1	61.0	55.4	64.5	71.2	72.4	61.1	66.6	65.4	69.6	66.0	64.3
July	68.3	65.3	66.4	60.4	59.2	79.5	73.0	73.6	70.7	78.8	77.2	78.8	73.0	73.5	78.1	80.2	78.6	83.4
Aug	62.0	64.3	65.8	71.6	65.6	73.3	66.9	71.8	71.3	78.7	78.2	80.6	76.2	70.4	74.9	75.6	80.0	76.2
Sept	63.0	63.7	64.3	66.8	65.0	73.2	67.8	65.1	64.1	72.9	70.3	68.6	68.7	61.2	65.5	63.7	68.4	66.0
Oct	67.0	58.1	67.3	60.8	64.4	70.2	63.8	72.6	68.0	68.7	73.0	70.0	65.3	60.1	60.5	60.6	59.4	62.4
Nov	64.4	65.6	69.5	69.3	85.4	83.4	75.3	85.0	76.1	74.3	72.2	88.5	70.0	67.3	81.4	74.4	79.7	82.5
Dec	74.1	92.1	73.0	96.5	89.1	91.2	90.1	111.1	91.2	99.5	87.5	106.0	86.5	73.4	91.0	86.1	101.6	100.4
Ann Ave	65.4	64.9	66.0	69.1	74.2	72.5	72.2	76.8	75.5	75.8	76.5	79.3	72.2	69.0	69.6	71.8	74.7	74.8

**Table B-6: Projected District Load (aMW)**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>January</b>	88.1	90.7	93.5	96.3	99.2	102.1	105.2	108.3	111.6	114.9	118.4
<b>February</b>	89.0	91.7	94.4	97.2	100.2	103.2	106.3	109.4	112.7	116.1	119.6
<b>March</b>	73.1	75.3	77.6	79.9	82.3	84.8	87.3	90.0	92.7	95.4	98.3
<b>April</b>	58.7	60.5	62.3	64.1	66.1	68.0	70.1	72.2	74.3	76.6	78.9
<b>May</b>	63.9	65.8	67.8	69.8	71.9	74.1	76.3	78.6	81.0	83.4	85.9
<b>June</b>	66.3	68.3	70.3	72.4	74.6	76.8	79.1	81.5	84.0	86.5	89.1
<b>July</b>	85.9	88.4	91.1	93.8	96.6	99.5	102.5	105.6	108.8	112.0	115.4
<b>August</b>	78.5	80.8	83.2	85.7	88.3	91.0	93.7	96.5	99.4	102.4	105.4
<b>September</b>	68.0	70.0	72.1	74.3	76.5	78.8	81.2	83.6	86.1	88.7	91.4
<b>October</b>	64.2	66.2	68.1	70.2	72.3	74.5	76.7	79.0	81.4	83.8	86.3
<b>November</b>	85.0	87.6	90.2	92.9	95.7	98.5	101.5	104.5	107.7	110.9	114.2
<b>December</b>	103.5	106.6	109.8	113.1	116.4	119.9	123.5	127.2	131.1	135.0	139.0
<b>Annual Average</b>	<b>77.0</b>	<b>79.3</b>	<b>81.7</b>	<b>84.2</b>	<b>86.7</b>	<b>89.3</b>	<b>92.0</b>	<b>94.7</b>	<b>97.6</b>	<b>100.5</b>	<b>103.5</b>

**Figure B-11: The District's Average Monthly Load**

## CONSERVATION PROGRAMS

The District has an active conservation program which continues to save more than 1,000 MWh each year. The program saved more than 5,000 MWh in 2004, as shown in Figure B-12. The District's conservation program includes conservation loans to encourage the use of energy-efficient products and services, such as insulation, Energy

Star heat pumps and windows, and air-sealing. It also includes rebates to customers who purchase energy-efficient appliances and manufactured homes, as well as free home energy audits and compact fluorescent light bulbs.

**Figure B-12: Megawatt Hours Saved**

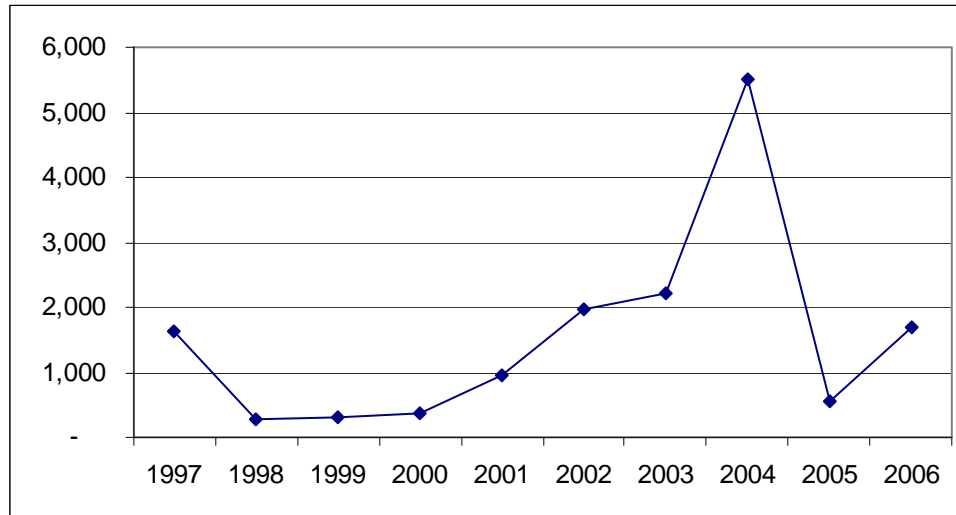


Figure B-12 clearly shows there have been times of growth and decline over the past decade, but at all times there has been energy saved through implementation of the District's conservation programs. Although the annual energy savings realized from the District's conservation programs will vary, they will continue to reduce system loads into the future.

## **SALE OF POWER**

Annual net generation is expected to average 44,150 MWh (just over 5 MWa). The Project does not produce any ancillary services. Of the gross power generated, one percent will be required for station service, equivalent to approximately 465 MWh annually. Another four percent (1,859 MWh) is planned as an allowance for plant outages and bus/transformer losses. The remainder will be used entirely to serve the District's customer load.

## **B.6 APPLICANT'S PLANS FOR FUTURE DEVELOPMENT OF THE PROJECT**

The District has no plans for future development at the Enloe Project Site beyond the proposal put forward in the License Application.

The Columbia River Water Resources Program Policy Advisory Group, coordinated by the Washington State Department of Ecology, is implementing a program to receive

applications and screen potential water storage projects. Early consideration was given to several projects, including a multi-purpose (water storage, flood control, hydroelectric) project upstream of the Enloe Hydroelectric Project on the Similkameen River, at Shanker's Bend (FERC No. 12804-000). The site offers potential regional water storage benefits, hydroelectric generation, and flood control, as well as the potential to improve fish habitat in the Okanogan Basin.

In June 2007, the State of Washington announced funding of an "appraisal study" to review the site. The size and configuration of a Shanker's Bend project is undetermined, pending completion of that study. The District has filed an application with the Federal Energy Regulatory Commission for a Preliminary Permit under Section 4(f) of the Federal Power Act (FPA). If the State's appraisal study of the Shanker's Bend site is positive the District would consider whether to proceed with seeking a license for the hydroelectric capability of the project from FERC. The District anticipates that its examination of the Shanker's Bend project will include an analysis of potential impacts on the Enloe Hydroelectric Project; however, at this time it does not appear that the two projects are incompatible.