

## EXHIBIT D – PROJECT COSTS AND FINANCING

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### D.1 CONSTRUCTION COSTS

The estimated cost of restoration of hydropower generation at Enloe Dam is shown on Table D-1. The estimate is based on January 2007 price levels. The estimated costs of Project Protection, Mitigation, and Enhancement Measures are summarized in Appendix D.1.

The estimate includes cost allowances for access road modifications, environmental protection mitigation and enhancement measures. Construction contingency allowances are included in estimated direct costs. The cost estimate excludes sunk costs of previous licensing applications, and sales taxes.

Land necessary to the development of the Project is used by the District under a right-of-way agreement with the Bureau of Land Management. The Washington Department of Natural Resources has jurisdiction over the river bedlands and shorelands to the pre-inundation ordinary high water mark. However, the DNR has not finalized a request to the District regarding use of the State's land.

Water rights necessary to the development of the Project are either already owned by the District or would be acquired by application to the Washington Department of Ecology. Application fees are very nominal; however costs may be associated with the provision of environmental benefits to obtain expedited processing of the water right application. No project has been identified to provide environmental benefits, but such a project would be scaled to be proportionate to the size of this small hydroelectric project. An example might be providing infiltration galleries for cool groundwater to benefit rearing ponds downstream. Such a project might cost approximately \$50,000.

**Table D-1**  
**Restoration of Enloe Hydroelectric Project**  
**Preliminary Construction Cost Estimate**

FERC Electric Plant Account		Amounts	Subtotals	Totals
<b>PRODUCTION PLANT</b>				
<b>Hydraulic Production</b>				
330	Land and Land Rights	\$0		
331	Structures and Improvements	\$3,016,000		
332	Reservoirs Dams and Waterways	\$6,547,000		
333	Waterwheels Turbines and Generators	\$9,505,000		
334	Accessory Electrical Equipment	\$330,000		
335	Miscellaneous Powerplant Equipment	\$330,000		
336	Roads Railroads and Bridges	\$244,000		
	<b>Subtotal - Hydraulic Production Plant</b>		<b>\$19,972,000</b>	
<b>TRANSMISSION PLANT</b>				
352	Structures and Improvements	\$104,000		
353	Station Equipment	\$587,000		
	<b>Subtotal - Transmission Plant</b>		<b>\$691,000</b>	
<b>OTHER COSTS</b>				
	Environmental Protection, Mitigation and Enhancement Measures	\$2,533,000		
	<b>Subtotal - Other Costs</b>		<b>\$2,533,000</b>	
<b>INDIRECT COSTS</b>				
	Engineering and Construction Management	\$3,250,000		
	Environmental Studies	\$2,700,000		
	Owners Administrative and Legal Cost	\$930,000		
	Interest During Construction	\$1,128,000		
	<b>Subtotal - Indirect Costs</b>		<b>\$8,008,000</b>	
<b>ESTIMATED PROJECT CONSTRUCTION COST (Jan 2007 price levels - rounded)</b>				<b>\$31,204,000</b>

## D.2 COST OF PREVIOUSLY CONSTRUCTED UNLICENSED FACILITIES

This section is required only for previously constructed, unlicensed facilities. Enloe is no longer licensed and is applying for a new license, but was previously licensed. The original construction cost of Enloe Dam, which was completed in 1923, is not known.

## D.3 COMPENSATION FOR TAKEOVER

This section is required only if the applicant is not a municipality or state. The applicant is a municipality so this section does not apply.

#### D.4 ANNUAL COST

The estimated annual cost of electric generation from the Enloe Hydroelectric Project is shown on Table D-2.

**Table D-2  
Enloe Hydroelectric Project Estimated Annual Costs (2007 \$)**

Item		Qty	Cost		
			(\$)	(\$/kW)	(\$/kWh)
<b>Generation Data</b>					
	Plant Capacity (MW)	9			
	Net Average Annual Generation (GWh)	45			
	Capacity Factor (%)	57.0%			
<b>Plant Investment</b>					
	Plant Investment Cost		\$31,204,000	\$3,467	
<b>Annual Cost</b>					
I. Capital Costs					
	a. Interest on Capital	4.50%	\$1,404,180	\$156	\$0.0312
	b. Capital recovery cost (40yr, 4.5%)	0.93%	\$291,544	\$32	\$0.0065
	Total Capital Costs		\$1,695,724	\$188	\$0.0377
	II. Insurance	0.20%	\$62,408	\$7	\$0.0014
	III. Taxes - Privilege Tax (% of first 4 mills/kWh)	5.35%	\$9,630	\$1	\$0.0002
	IV. Operation and Maintenance		\$600,000	\$67	\$0.0133
	V. Environmental Measures		\$19,500	\$2	\$0.0004
	VI. Administrative and General/Contingency	35%	\$216,825	\$24	\$0.0048
	<b>Total Generation Cost</b>		<b>\$2,604,087</b>	<b>\$289</b>	<b>\$0.0579</b>

The annual capital cost components shown in Table D-2 (I.a. and I.b.) are based on a financing interest rate of 4.5% on invested capital, which is equivalent to current interest rates on municipal revenue bonds, over the expected Project life and license term of 40 years. The interest on capital investment is the annual interest paid on the total plant investment cost. The capital recovery cost is the annualized (or levelized) cost of the total plant investment over the 40-year life. Therefore, in essence, the Total Capital Costs include the equivalent of annualized principal and interest for the Project over the full life of the Project.

The initial cost of energy from the project in 2007 dollars is estimated to be \$.058/kWh or \$58/MWh which is comprised of \$.038/kWh in fixed capital related costs and \$.020/kWh in variable annual operating, maintenance and administrative costs.

## **D.5 VALUE OF PROJECT POWER**

The Project is expected to generate an average of 45.0 GWh annually. This Project has both an economic and a financial value. While this section primarily focuses on the financial value as it is quantified, the economic value is qualitative. The economic value of restoring the Project is two-fold. First, it is the best use of an aging asset by the District, and the restoration extends the life of this asset as a benefit to the District. Second, this small hydroelectric project is not a fossil-fuel burning project, and relies on a renewable resource. Therefore, this Project leaves no carbon footprint and can contribute to reduced emissions when compared to alternative power projects.

The annual financial value of this power is estimated based on a trend projection of the Mid-Columbia bulk power price as the lowest cost alternative source of power. This project is run-of-river, and as such is not a peaking plant. Therefore, average between on-peak and off-peak monthly prices were used to value this power.

### **ANNUAL VALUE**

The projected Mid-Columbia bulk power price were estimated using the trend growth (excluding outliers) over the period 2002 through September 2007 for on-peak high, on-peak low, off-peak high, and off-peak low prices. In order to make the most reliable estimates, the trend was progressed over three years, and the projected prices were averaged and held constant in real terms. The estimated monthly and average annual value of the Project power is presented in Table D-3. Depending on the month, the estimated average prices range from a low of \$42.83 per MWh in March to a high of \$81.40 per MWh in December, with an average annual cost of \$63.35 per MWh.

### **ON PEAK VALUE**

The monthly average projected on-peak cost of bulk power at the Mid-Columbia hub over the time period discussed above is shown in Table D-3. The range is between \$46.63 per MWh in March and \$106.70 per MWh in July.

### **OFF PEAK VALUE**

The monthly average projected off-peak cost of bulk power at the Mid-Columbia hub over the time period discussed above is shown in Table D-3. These prices range from \$30.01 per MWh to \$77.10 per MWh, for the months of April and December, respectively.

**Table D-3  
Mid-Columbia Projected Average Prices**

Month	On-Peak Price	Off-Peak Price	Average Price
<b>January</b>	\$63.20	\$56.84	\$60.02
<b>February</b>	\$70.98	\$64.44	\$67.71
<b>March</b>	\$46.63	\$39.03	\$42.83
<b>April</b>	\$59.75	\$30.01	\$44.88
<b>May</b>	\$63.36	\$51.19	\$57.28
<b>June</b>	\$95.04	\$62.64	\$78.84
<b>July</b>	\$106.70	\$43.30	\$75.00
<b>August</b>	\$78.13	\$42.50	\$60.32
<b>September</b>	\$61.99	\$51.12	\$56.56
<b>October</b>	\$66.69	\$59.19	\$62.94
<b>November</b>	\$79.71	\$65.20	\$72.46
<b>December</b>	\$85.71	\$77.10	\$81.40
<b>Annual Average</b>	<b>\$73.16</b>	<b>\$53.55</b>	<b>\$63.35</b>

**Source:** ENTRIX elaborations on Mid-Columbia hub weekly prices from Energy NewsData, Western Price Survey, available at: <http://www.newsdata.com/wps/archives.html>.

## TOTAL VALUE OF PROJECT POWER

Using projected average monthly power prices based on the trend over the period 2002-2007, the total value of the power produced by the Project is estimated to be over \$2.8 million annually, as Table D-4 shows. This value takes into account the intra-year, or monthly average price variations, discussed above, and defined by the District load curves in Exhibit B.

**Table D-4  
Restoration of Enloe Hydroelectric Project  
Total Value of Project Power**

Month	Average Energy (MWh)	Average Price \$/MWh	Value (\$)
<b>January</b>	2,634	\$60.02	\$158,091
<b>February</b>	2,494	\$67.71	\$168,869
<b>March</b>	3,003	\$42.83	\$128,621
<b>April</b>	4,707	\$44.88	\$211,258
<b>May</b>	5,889	\$57.28	\$337,304
<b>June</b>	5,684	\$78.84	\$448,128
<b>July</b>	5,689	\$75.00	\$426,669
<b>August</b>	3,494	\$60.32	\$210,748
<b>September</b>	2,396	\$56.56	\$135,514
<b>October</b>	2,763	\$62.94	\$173,895
<b>November</b>	3,212	\$72.46	\$232,736
<b>December</b>	2,998	\$81.40	\$244,046
<b>Total</b>	<b>44,963</b>		<b>\$2,875,881</b>
<b>Annual Average</b>		<b>\$63.35</b>	
<b>Source:</b> ENTRIX elaborations on Mid-Columbia hub weekly prices from Energy NewsData, Western Price Survey, available at: <a href="http://www.newsdata.com/wps/archives.html">http://www.newsdata.com/wps/archives.html</a> .			

## D.6 OTHER ELECTRIC ENERGY ALTERNATIVES

Restoration of the Enloe Hydroelectric Project would meet load growth in North Okanogan County. The District has not developed a specific electric energy alternative that would be pursued if the Project were not licensed. If a license were not granted, the District could increase market purchases from the Bonneville Power Administration (BPA), if available, and other sources. Because demand now exceeds system supply, BPA will allocate system resources ("Tier 1" low cost hydropower from the existing system) to its existing customers in 2011. New load growth would need to be met by non-BPA power purchases or by "Tier 2" purchases (new, more expensive power resources) to be developed by BPA.

If a new large capital project were considered to replace market purchases, natural gas or coal-fired generation would be the most likely preferred sources.

## D.7 CONSEQUENCES OF DENIAL OF THE LICENSE APPLICATION

If the Enloe License Application were denied, the project site would continue to be managed as it is today. The District would continue to monitor dam safety under the jurisdiction of the State of Washington and clear log jams.

The District would pursue other sources of electric power generation to meet its customers' future needs, including new generation or purchased power. Since few new hydroelectric projects are being licensed and constructed and relicensing of hydropower projects is causing an overall reduction of hydroelectric power generation, it is unlikely that the replacement electric power will come from new or existing hydropower generation in the United States. The source of replacement electric power may be conventional natural gas or coal fired generation or renewables depending on availability and cost. If replacement generation comes from a natural gas fired power plant, the estimated green house gas emissions are equivalent to 20,000 tons of CO<sub>2</sub> per year. If replacement generation comes from a coal fired power plant, the estimated green house gas emissions are equivalent to 44,000 tons of CO<sub>2</sub> per year.

The District's Emergency Action Program will soon provide remote video monitoring of the site via a high-speed communication link, enabling 911 dispatchers to visually inspect and verify an emergency situation in real-time. If the license application is denied, the District would continue to implement its Emergency Action Program.

The east bank upstream of the dam has historically been used for informal access and camping along the Similkameen River and this use would likely continue.

The original powerhouse and appurtenant facilities have been vandalized and have deteriorated. If these structures are left in place and not rehabilitated, further deterioration will occur. This would be considered an "adverse effect" under Section 106 of the National Historic Preservation Act.

Sediment has accumulated behind the dam, and occasionally log jams occur during storm flows. Sediment quality is not expected to represent an ongoing source of contamination to the river.

Economic consequences of license denial would depend on the continued status of the undeveloped project site, which would be determined in consultation with BLM. If the District license application were denied, the District could potentially face such costs for site restoration as might be required by the federal land owner and by the Department of Ecology Division of Dam Safety.

Depending on the nature of the issues leading to denial of the license application, the District may maintain the site and its options to license the Project in the future, and continue to seek resolution of issues. Present unknowns and uncertainties, such as load growth in northern Okanogan County or the potential effects of climate change, could increase interest in the Enloe project again in the future.

As a consequence of denial of the license application the following would not occur:

- Restoration of hydroelectric generation at Enloe Dam.

- Incremental environmental impacts of construction and operation of the new power plant.
- Beneficial use of 45.0 GWh/year of renewable and sustainable hydroelectric generation potential at Enloe Dam.
- Economic benefits to the local community in the form of employment in construction and operation of the Enloe power plant.
- Recreation and environmental enhancements proposed by the applicant.
- Anticipated power generation benefits to District customers resulting from current investment in engineering feasibility and environmental studies of the Project.

#### **D.8 SOURCES AND EXTENT OF FINANCING**

The proposed source of financing will be revenue-backed municipal bonds. The District intends to finance the capital cost associated with this Project using a combination of bonds and revenues from power rates.

#### **D.9 COST TO DEVELOP LICENSE APPLICATION**

The District estimates that approximately \$3.0 M has been spent on internal costs and contracts (engineering, consulting) to develop the Draft License Application.

#### **D.10 VALUE OF ON-PEAK AND OFF-PEAK POWER**

This section is not required. Run of river operations are exempted. The Enloe Hydroelectric Project will operate as a run-of-river project.