

CHAPTER 9 FINANCIAL ANALYSIS

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City of Bend, Oregon
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BROWN AND CALDWELL

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ALTERNATIVE OPTION SELECTION

9.0 Summary

This chapter summarizes the financial analysis that was conducted in conjunction with the City of Bend (City) Water Supply Alternative project. The scope of the financial analysis was to perform the following tasks:

1. Update the previous financial plan model developed by Galardi Consulting in 2008 to reflect current operating and capital budget data, as well as updated assumptions related to future cost and revenue projections (e.g., customer growth and consumption trends and cost escalation) as provided by City finance staff.
2. Evaluate potential financing options for capital improvements in conjunction with Brown and Caldwell (which provided information related to renewable energy construction incentive programs) and the City's finance staff and financial advisor (who provided information on current bond market conditions and existing bond covenants).
3. Determine rate impacts of different capital project alternatives using the updated financial plan model and the relevant package of construction and financing assumptions.
4. Develop documentation and presentation material, including a memorandum and matrix of construction/financing alternatives and corresponding rate impacts.

Over the course of the study, 22 primary scenarios were developed representing different options related to hydropower, treatment technology, timeline (2012 deadline versus 2014 treatment deadline), and penstock construction. Additional scenarios were developed to analyze the impact of alternative debt assumptions (e.g., subordination of debt) and modified operation and maintenance (O&M) and hydropower revenue assumptions. This chapter presents information on the baseline financial plan assumptions, as well as the specific assumptions and findings related to the four primary Bridge Creek alternatives presented to the City Council in August and September 2009.

9.1 Baseline Financial Plan

The financial plan provides annual O&M and capital cost forecasts and projects revenue under existing rates and required annual system-wide revenue increases to meet established financial policies through the City's 5-year capital improvement plan (CIP) period (fiscal year [FY] 2009–10 through FY2013–14). The financial plan model—originally developed for the City in 2008—was updated with the following data:

- FY2009–10 and FY2010–11 adopted budget (O&M line item expenditures, revenues, and transfers)
- FY2009–10 through FY2013–14 CIP
- FY2009–10 through FY2013–14 system development charge (SDC) forecast

The forecast model was also extended through FY2019–20; however, because the City does not have annual projections of capital improvement needs beyond FY2013–14, the rate impact analysis focused on a 5-year window.

9.1.1 Forecast Assumptions

The financial plan relies on a number of assumptions related to future cost and revenue escalation and customer growth and consumption trends. The key assumptions used in the study include the following:

- Rate revenue:
 - FY2010 water consumption adjustment (-15 percent summer; -9 percent annual)
 - Future years' consumption per account: flat
 - FY2010 and FY2011 account growth: 0 percent
 - Post FY2011 annual account growth: 1.5 percent
- Cost escalation (post FY2010 and FY2011 budget):
 - Salaries and wages: 3 to 4 percent per year (based on Financial Consulting Solutions Group [FCSG] report)
 - Benefits: 4.2 percent (per FCSG report)
 - Materials and services: 5 percent
 - Transfers: 5 percent
 - Capital: 0 percent (projects already inflated)
- Interest earnings: 3.0 to 4.5 percent (per FCSG report)
- Other:
 - Contingency: 60 days of O&M
 - Budget spent: 100 percent

9.1.2 CIP

Table 9-1 lists the components of the City's 5-year CIP, excluding the source water project. Total project costs are about \$20.4 million and include improvements to wells, reservoirs, transmission, and distribution, as well as equipment and costs for studies and planning. Construction costs for the project alternatives are presented in Section 9-3.

9.1.3 Capital Financing

The City will use a combination of current revenues (primarily rates and SDCs) and long-term financing to fund the CIP and project costs. Long-term financing options considered include conventional revenue bonds (paid by revenues of the water system; no voter approval required), as well as state and federal loan programs.

The CIP is assumed to be funded from the following sources:

- SDCs (based on projected development activity)
- \$5.6 million in stimulus funding which assumes 50 percent grant and 50 percent loan (repaid at 3 percent interest and a 20-year term)
- Revenue bonds

Table 9-1. Water System CIP						
Project	FY 2009–10, dollars	FY 2010–11, dollars	FY 2011–12, dollars	FY 2012–13, dollars	FY 2013–14, dollars	Total, dollars
CIP: consultants	250,000	200,000	0	0	0	450,000
Water rights acquisition	595,000	250,000	500,000	500,000	500,000	2,345,000
New reservoir, Rock Bluff 2	0	0	1,109,000	725,000	0	1,834,000
Airport well 3 design/drilling	100,000	0	0	0	0	100,000
Automatic meter reading	1,850,000	0	0	0	0	1,850,000
Avion 12-inch	70,000	0	0	0	0	70,000
Water Division Shiloh well	650,000	0	0	0	0	650,000
TBR Road/Murphy 16-inch water	1,253,000	0	0	0	0	1,253,000
Well 4 Pilot Butte control facility	1,610,000	0	0	0	0	1,610,000
WA0808 water modeling	100,000	100,000	100,000	100,000	100,000	500,000
WA09FA optimization	400,000	0	0	0	0	400,000
New projects						
Juniper Ridge reservoir	0	0	150,000	2,704,000	0	2,854,000
Outback 3 reservoir	100,000	0	0	0	0	100,000
Pilot Butte wells (5, 6, 7, 8)	0	0	1,250,000	2,450,000	1,250,000	4,950,000
Tillicum Village projects	515,000	0	0	0	0	515,000
Water management and conservation plan update	50,000	50,000	100,000	0	0	200,000
Water reuse feasibility	0	75,000	0	0	0	75,000
Repair and maintenance						
Communication equipment	0	0	200,000	200,000	200,000	600,000
Total CIP	7,543,000	675,000	3,409,000	6,679,000	2,050,000	20,356,000

In estimating debt service costs for revenue bonds, the following assumptions were used:

- Interest rate: 5.5 percent
- Term: 30 years
- Issuance cost: 1.5 percent (funded with proceeds)
- Required reserve: 8 percent (funded with proceeds)
- Minimum debt service coverage target: 1.5 (with SDCs); 1.0 (without SDCs)
- Timing: just-in-time financing (i.e., separate issues were assumed for each year's funding needs, as opposed to a larger issue earlier in the plan to fund multiple years of construction)
- First year payment: 50 percent for most issues; 2 years' deferral of principal on the largest bond (FY2012)

9.1.4 Operating Costs

Baseline budgeted operating costs are listed in Table 9-2, based on the adopted budget for FY2009–10 and FY2010–11. As listed in Table 9-2, total O&M costs for the 2-year budget period average \$11.4 million. Costs do not include projected additional O&M costs and electrical cost savings associated with the project.

	FY2009–10, dollars	FY2010–11, dollars
Watershed/surface water	129,600	130,552
Wells	801,586	825,961
Disinfection	218,881	224,773
Water resources	482,860	496,570
Reservoirs	171,611	153,679
Distribution mains	1,752,303	1,837,685
Water services	2,905,773	2,930,902
Pumping	342,509	351,985
Administration and support (e.g., legal)	2,417,225	2,567,647
Billed services (e.g, garage, fuel)	441,900	459,900
Transfers (e.g., finance, information and technology)	1,547,777	1,523,300
Capital expansion	83,425	87,553
Total	11,295,450	11,590,507

Based on the escalation factors discussed previously, total baseline O&M costs may increase to \$13.2 million in FY2013–14.

9.2 Bridge Creek Alternatives

Table 9-3 summarizes the results of the financial analysis associated with the Bridge Creek alternatives presented to the City Council in August and September 2009. Financial plans were developed for each alternative, based on the baseline data and analysis described in Section 9.1. In addition, project-specific assumptions were developed for each scenario related to the following issues:

- Total construction costs and financing
- Annual O&M costs and savings
- Hydroelectric power production revenue (if applicable)
- Annual system-wide water rate increase

Alternative	Total construction costs, dollars in millions	Annual O&M cost, dollars	FY2013-2014 hydro revenue, dollars in millions	Annual rate increase, percent
Membrane and penstock only	58.2	502,000	0.0	10.8
UV and penstock only	44.9	190,000	0.0	8.2
Membrane, penstock, and hydroelectric	71.2	502,000	1.3	7.6
UV, penstock, and hydroelectric	57.9	190,000	1.3	4.7

9.2.1 Capital Costs and Financing

As listed in Table 9-3, construction costs for the Bridge Creek alternatives range from \$44.9 million (UV treatment and penstock only) to \$71.2 million (membrane treatment, penstock, and hydroelectric). Funding for the treatment costs are assumed to be a combination of SDCs, rates, and revenue bond funding, as described in Section 9-2 for the 5-year CIP projects.

In addition, the hydroelectric project may be eligible for state and federal loan, grant, and tax credit programs targeted specifically for renewable energy projects. The following funding was assumed for the hydroelectric and penstock (pipeline) project costs (\$41.4 million):

- City will obtain partner funding up-front to utilize state and federal energy tax credits (worth about \$7.8 million discounted) to reduce the amount that needs to be financed to \$33.6 million.
- \$12.4 million will be in the form of federal government grants (Federal Business Energy Investment Tax Credit).
- \$6 million will be in the form of state loans (Oregon Department of Energy) that assume 3 percent interest, no reserves, 20-year term, and subordinated obligations.

More detailed information about the project financing assumptions for the hydroelectric scenarios is provided in Appendix 9-A.

The City's current water system debt service is limited to about \$0.3 million annually for the series 2000 revenue bonds. Annual debt service costs are projected to increase significantly under all of the Bridge Creek alternatives—in part to fund a portion of costs associated with the 5-year CIP—ranging from about \$4.2 million for the UV scenarios to about \$5.1 million for the membrane scenarios.

9.2.2 Operating Costs

Operating costs vary for the alternatives, based on the assumed treatment technology. Annual operating costs for membrane treatment are estimated to be \$502,000 in FY2013–14 (the first full year of operation). The annual costs for UV treatment are \$190,000. Some reductions in baseline operating costs are projected for the membrane treatment alternatives, due to reduced energy costs (about \$55,000) associated with reduced reliance on the wells.

9.2.3 Revenue

Revenue under existing rates is projected to be about \$11.4 million in FY2009–10. As debt service costs increase significantly to fund the project, as well as the other CIP costs, revenue requirements from rates are projected to increase to between \$14.0 million (for the UV, penstock and hydroelectric scenario) and \$18.0 million (for the membrane and penstock only scenario).

The revenue requirements from rates reflect projected revenues from other sources of funds, including hydroelectric revenues, which are available to fund a portion of the debt service and operating costs of the water system. Hydroelectric revenues are assumed to be about \$1.3 million in FY2013–14, and help mitigate water rate increases for the hydroelectric alternatives. As listed in Table 9-3, the annual rate increase needed for the Bridge Creek options through FY2013–14 range from 4.7 percent (for the UV, penstock, and hydroelectric scenario), to 10.8 percent (for the membrane and penstock only scenario). Additional rate increases will likely be needed in subsequent years to fund additional capital improvements and normal increases in operating costs.

9.2.4 2014 Scenarios

The City is currently operating under the assumption that the project construction will need to be completed in 2012. However, some other communities are pursuing delayed construction schedules through 2014. Additional scenarios were developed to examine the impact of delaying the treatment plant construction for 2 years. Table 9-4 lists the revised rate increases based on the delayed schedule.

Alternative	Annual rate increase, percent
Membrane and penstock only	8.8
UV and penstock only	7.2
Membrane, penstock, and hydroelectric	5.85
UV, penstock, and hydroelectric	4.1

9.3 Conclusion

The City has a longstanding practice of adjusting water rates annually based on a long-term financial plan to avoid large single-year rate adjustments. The City last adopted a water system financial plan in 2008, and projected the need for an annual rate increase of 8.25 percent through FY2012–13; the City implemented the first two rate increases from that plan in FY2008–09 and FY2009–10. The updated financial plan projects rate increases of 4.7 percent to 10.8 percent for FY2010–11 through FY2013–14, to fund the City’s current adopted 5-year, projected baseline O&M costs, as well as projected construction and O&M costs associated with a Bridge Creek water supply and treatment alternative. The hydroelectric options significantly mitigate projected rate increases, due to the additional revenue projected from the sale of hydroelectric power, as well as significant construction cost incentives. All of the Bridge Creek alternatives will greatly increase the City’s debt service costs, and therefore will require a long-term commitment from the City to maintain sufficient rates and charges to meet bond covenants.

The rate increases projected herein are based on available information on costs and revenues as of May 2009, and include a number of assumptions related to future financing eligibility and market conditions. Changes in these assumptions may warrant modifications to the rate increases. Furthermore, continued economic challenges will require close monitoring of revenues and expenses, and possible future revisions to rate increases if customer growth and consumption drop below projected levels.

Source Project Financing Assumptions

**Source Project Financing Assumptions
Scenario**

Membrane Treatment with Powerhouse and Penstock

	Total		FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14
Construction Costs							
WTP	\$29,750,000		\$925,000	\$4,550,000	\$22,300,000	\$1,975,000	
Powerhouse & Penstock	\$41,400,000		\$725,000	\$14,275,000	\$13,750,000	\$12,650,000	\$0
Total	\$71,150,000		\$1,650,000	\$18,825,000	\$36,050,000	\$14,625,000	\$0
Construction Funding Sources							
	Total	Discounted Value					
		6%					
Construction Incentives -- Grants/Partner Financing							
WTP	\$0		\$0	\$0	\$0	\$0	\$0
Powerhouse & Penstock							
Federal Business Energy Inv Tax Credit (ITC)	\$12,420,000	\$12,420,000	\$0	\$0	\$6,398,559	\$6,021,441	\$0
0% Unused	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal Renewable Energy Grants	\$400,000	\$335,848	\$0	\$117,867	\$113,532	\$104,449	\$0
Oregon Energy Business Tax Credits (OBETC)	\$10,000,000	\$7,497,978	\$0	\$2,631,435	\$2,534,657	\$2,331,885	\$0
0% Energy Trust of Oregon Open Solicitation Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ETO non Open Solicitation Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0% USDA Rural Energy for America Program (REAP) Grants	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$22,820,000	\$20,253,825	\$0	\$2,749,302	\$9,046,748	\$8,457,775	\$0
Net Construction Financing							
WTP	\$29,750,000	\$29,750,000	\$925,000	\$4,550,000	\$22,300,000	\$1,975,000	\$0
Powerhouse & Penstock	\$18,580,000	\$21,146,175	\$725,000	\$11,525,698	\$4,703,252	\$4,192,225	\$0
Total	\$48,330,000	\$50,896,175	\$1,650,000	\$16,075,698	\$27,003,252	\$6,167,225	\$0
Construction Incentives -- Loans							
WTP							
Powerhouse & Penstock							
Clean Renewable Energy Bonds (CREBs)	\$0		\$0	\$0	\$0	\$0	\$0
Qualified Energy Conservation Bonds (QECBs)	\$0		\$0	\$0	\$0	\$0	\$0
0% USDA Rural Energy for America Program (REAP) Loan	\$0		\$0	\$0	\$0	\$0	\$0
Oregon Small Scale Loan Program	\$0		\$0	\$0	\$0	\$0	\$0
Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0
O&M							
WTP			\$0	\$0	\$0	\$362,000	\$502,000
Powerhouse & Penstock			\$0	\$0	\$0	\$25,500	\$53,000
Reduction in Electricity Costs						-\$55,000	-\$57,750
Total	\$0	\$0	\$0	\$0	\$0	\$332,500	\$497,250

Source Project Financing Assumptions**Scenario***Membrane Treatment with Powerhouse and Penstock*

	Total	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	
O&M and Debt Funding Sources -- Hydro							
mWh produced hydro					4,475	9,260	
mWh produced Total					4,475	9,260	
Rate -- PP&L					\$0.071	\$0.074	
Rate -- Green Tags					\$0.022	\$0.023	
Rate -- Hydro Production Incentive					\$0.022	\$0.023	
Power Production Payment - PP&L rate schedule					\$317,725	\$684,314	
Green Tags					\$98,450	\$215,332	
Hydro Production Incentive					\$98,450	\$211,869	
Renewable Energy Production Tax Credits					\$98,450	\$203,720	
Total				\$0	\$0	\$613,075	\$1,315,235

Source Project Financing Assumptions
Scenario
UV Treatment w/Penstock and Powerhouse

	Total		FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14
Construction Costs							
WTP	\$16,500,000		\$500,000	\$2,475,000	\$12,375,000	\$1,150,000	
Powerhouse & Penstock	\$41,400,000		\$725,000	\$14,275,000	\$13,750,000	\$12,650,000	\$0
Total	\$57,900,000		\$1,225,000	\$16,750,000	\$26,125,000	\$13,800,000	\$0
Construction Funding Sources							
	Total	Discounted Value					
		6%					
Construction Incentives -- Grants/Partner Financing							
WTP	\$0		\$0	\$0	\$0	\$0	\$0
Powerhouse & Penstock							
Federal Business Energy Inv Tax Credit (ITC)	\$12,420,000	\$12,420,000	\$0	\$0	\$6,398,559	\$6,021,441	\$0
0% Unused	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal Renewable Energy Grants	\$400,000	\$335,848	\$0	\$117,867	\$113,532	\$104,449	\$0
Oregon Energy Business Tax Credits (OBETC)	\$10,000,000	\$7,497,978	\$0	\$2,631,435	\$2,534,657	\$2,331,885	\$0
0% Energy Trust of Oregon Open Solicitation Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ETO non Open Solicitation Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0% USDA Rural Energy for America Program (REAP) Grants	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$22,820,000	\$20,253,825	\$0	\$2,749,302	\$9,046,748	\$8,457,775	\$0
		\$20,253,825					
Net Construction Financing							
WTP	\$16,500,000	\$16,500,000	\$500,000	\$2,475,000	\$12,375,000	\$1,150,000	\$0
Powerhouse & Penstock	\$18,580,000	\$21,146,175	\$725,000	\$11,525,698	\$4,703,252	\$4,192,225	\$0
Total	\$35,080,000	\$37,646,175	\$1,225,000	\$14,000,698	\$17,078,252	\$5,342,225	\$0
Construction Incentives -- Loans							
WTP							
Powerhouse & Penstock							
Clean Renewable Energy Bonds (CREBs)	\$0		\$0	\$0	\$0	\$0	\$0
Qualified Energy Conservation Bonds (QECBs)	\$0		\$0	\$0	\$0	\$0	\$0
0% USDA Rural Energy for America Program (REAP) Loan	\$0		\$0	\$0	\$0	\$0	\$0
Oregon Small Scale Loan Program	\$0		\$0	\$0	\$0	\$0	\$0
Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0
O&M							
WTP			\$0	\$0	\$0	\$95,000	\$190,000
Powerhouse & Penstock			\$0	\$0	\$0	\$25,500	\$53,000
Reduction in Electricity Costs							

Source Project Financing Assumptions**Scenario***UV Treatment w/Penstock and Powerhouse*

	Total		FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14
Total	\$0	\$0	\$0	\$0	\$0	\$120,500	\$243,000
O&M and Debt Funding Sources -- Hydro							
mWh produced hydro						4,475	9,260
mWh produced Total						4,475	9,260
Rate -- PP&L						\$0.071	\$0.074
Rate -- Green Tags						\$0.022	\$0.023
Rate -- Hydro Production Incentive						\$0.022	\$0.023
Power Production Payment - PP&L rate schedule						\$317,725	\$684,314
Green Tags						\$98,450	\$215,332
Hydro Production Incentive						\$98,450	\$211,869
Renewable Energy Production Tax Credits						\$98,450	\$203,720
Total			\$0	\$0	\$0	\$613,075	\$1,315,235

Source Project Financing Assumptions
Scenario
Membrane Treatment with Powerhouse and Penstock (2014)

	Total		FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Construction Costs								
WTP	\$29,750,000				\$925,000	\$4,550,000	\$22,300,000	\$1,975,000
Powerhouse & Penstock	\$41,400,000		\$725,000	\$14,275,000	\$13,750,000	\$12,650,000	\$0	
Total	\$71,150,000		\$725,000	\$14,275,000	\$14,675,000	\$17,200,000	\$22,300,000	\$1,975,000
Construction Funding Sources								
	Total	Discounted Value						
		6%						
Construction Incentives -- Grants/Partner Financing								
WTP	\$0		\$0	\$0	\$0	\$0	\$0	\$0
Powerhouse & Penstock								
Federal Business Energy Inv Tax Credit (ITC)	\$12,420,000	\$12,420,000	\$0	\$0	\$6,398,559	\$6,021,441	\$0	\$0
0% Unused	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal Renewable Energy Grants	\$400,000	\$335,848	\$0	\$117,867	\$113,532	\$104,449	\$0	\$0
Oregon Energy Business Tax Credits (OBETC)	\$10,000,000	\$7,497,978	\$0	\$2,631,435	\$2,534,657	\$2,331,885	\$0	\$0
0% Energy Trust of Oregon Open Solicitation Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ETO non Open Solicitation Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0% USDA Rural Energy for America Program (REAP) Grants	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$22,820,000	\$20,253,825	\$0	\$2,749,302	\$9,046,748	\$8,457,775	\$0	\$0
Net Construction Financing								
WTP	\$29,750,000	\$29,750,000	\$0	\$0	\$925,000	\$4,550,000	\$22,300,000	\$1,975,000
Powerhouse & Penstock	\$18,580,000	\$21,146,175	\$725,000	\$11,525,698	\$4,703,252	\$4,192,225	\$0	\$0
Total	\$48,330,000	\$50,896,175	\$725,000	\$11,525,698	\$5,628,252	\$8,742,225	\$22,300,000	\$1,975,000
Construction Incentives -- Loans								
WTP								
Powerhouse & Penstock								
Clean Renewable Energy Bonds (CREBs)	\$0		\$0	\$0	\$0	\$0	\$0	\$0
Qualified Energy Conservation Bonds (QECBs)	\$0		\$0	\$0	\$0	\$0	\$0	\$0
0% USDA Rural Energy for America Program (REAP) Loan	\$0		\$0	\$0	\$0	\$0	\$0	\$0
Oregon Small Scale Loan Program	\$0		\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
O&M								
WTP			\$0	\$0	\$0	\$0	\$0	\$362,000
Powerhouse & Penstock			\$0	\$0	\$0	\$25,500	\$53,000	\$55,253
Reduction in Electricity Costs						-\$55,000	-\$57,750	-\$60,060
Total	\$0	\$0	\$0	\$0	\$0	-\$29,500	-\$4,750	\$357,193
O&M and Debt Funding Sources -- Hydro								
mWh produced hydro						4,475	9,260	9,450
mWh produced Total						4,475	9,260	9,450

Source Project Financing Assumptions**Scenario***Membrane Treatment with Powerhouse and Penstock (2014)*

	Total	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Rate -- PP&L					\$0.071	\$0.074	\$0.076
Rate -- Green Tags					\$0.022	\$0.023	\$0.025
Rate -- Hydro Production Incentive					\$0.022	\$0.023	\$0.024
Power Production Payment - PP&L rate schedule					\$317,725	\$684,314	\$718,200
Green Tags					\$98,450	\$215,332	\$232,276
Hydro Production Incentive					\$98,450	\$211,869	\$224,865
Renewable Energy Production Tax Credits					\$98,450	\$203,720	\$207,900
Total		\$0	\$0	\$0	\$613,075	\$1,315,235	\$1,383,241

Source Project Financing Assumptions

Scenario

UV Treatment with Powerhouse and Penstock (2014)

	Total		FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Construction Costs								
WTP	\$16,500,000				\$500,000	\$2,475,000	\$12,375,000	\$1,150,000
Powerhouse & Penstock	\$41,400,000		\$725,000	\$14,275,000	\$13,750,000	\$12,650,000	\$0	
Total	\$57,900,000		\$725,000	\$14,275,000	\$14,250,000	\$15,125,000	\$12,375,000	\$1,150,000
Construction Funding Sources								
	Total	Discounted Value						
		6%						
Construction Incentives -- Grants/Partner Financing								
WTP	\$0		\$0	\$0	\$0	\$0	\$0	\$0
Powerhouse & Penstock								
Federal Business Energy Inv Tax Credit (ITC)	\$12,420,000	\$12,420,000	\$0	\$0	\$6,398,559	\$6,021,441	\$0	\$0
0% Unused	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal Renewable Energy Grants	\$400,000	\$335,848	\$0	\$117,867	\$113,532	\$104,449	\$0	\$0
Oregon Energy Business Tax Credits (OBETC)	\$10,000,000	\$7,497,978	\$0	\$2,631,435	\$2,534,657	\$2,331,885	\$0	\$0
0% Energy Trust of Oregon Open Solicitation Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
ETO non Open Solicitation Program	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0% USDA Rural Energy for America Program (REAP) Grants	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$22,820,000	\$20,253,825	\$0	\$2,749,302	\$9,046,748	\$8,457,775	\$0	\$0
Net Construction Financing								
WTP	\$16,500,000	\$16,500,000	\$0	\$0	\$500,000	\$2,475,000	\$12,375,000	\$1,150,000
Powerhouse & Penstock	\$18,580,000	\$21,146,175	\$725,000	\$11,525,698	\$4,703,252	\$4,192,225	\$0	\$0
Total	\$35,080,000	\$37,646,175	\$725,000	\$11,525,698	\$5,203,252	\$6,667,225	\$12,375,000	\$1,150,000
Construction Incentives -- Loans								
WTP								
Powerhouse & Penstock								
Clean Renewable Energy Bonds (CREBs)	\$0		\$0	\$0	\$0	\$0	\$0	\$0
Qualified Energy Conservation Bonds (QECBs)	\$0		\$0	\$0	\$0	\$0	\$0	\$0
0% USDA Rural Energy for America Program (REAP) Loan	\$0		\$0	\$0	\$0	\$0	\$0	\$0
Oregon Small Scale Loan Program	\$0		\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
O&M								
WTP			\$0	\$0	\$0	\$0	\$0	\$95,000
Powerhouse & Penstock			\$0	\$0	\$0	\$25,500	\$53,000	\$55,253
Reduction in Electricity Costs								
Total	\$0	\$0	\$0	\$0	\$0	\$25,500	\$53,000	\$150,253
O&M and Debt Funding Sources -- Hydro								
mWh produced hydro						4,475	9,260	9,450
mWh produced Total						4,475	9,260	9,450

Source Project Financing Assumptions**Scenario***UV Treatment with Powerhouse and Penstock (2014)*

	Total	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15
Rate -- PP&L					\$0.071	\$0.074	\$0.076
Rate -- Green Tags					\$0.022	\$0.023	\$0.025
Rate -- Hydro Production Incentive					\$0.022	\$0.023	\$0.024
Power Production Payment - PP&L rate schedule					\$317,725	\$684,314	\$718,200
Green Tags					\$98,450	\$215,332	\$232,276
Hydro Production Incentive					\$98,450	\$211,869	\$224,865
Renewable Energy Production Tax Credits					\$98,450	\$203,720	\$207,900
Total		\$0	\$0	\$0	\$613,075	\$1,315,235	\$1,383,241