



Water & Wastewater Rate Analysis Final Report

Prepared by



In association with



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Prepared for



City of Silverton, Oregon
 Water & Wastewater Rate Analysis & Wastewater SDC Methodology Update 2008



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Executive Summary

This study addresses the levels and structure of rates needed to support current and future infrastructure investments along with the operations and maintenance of the water and wastewater utilities in Silverton. The focus for the rate study is for years covering the period fiscal 2008 through fiscal 2013. The wastewater system development charge (SDC) methodology update relied on the newly adopted *Wastewater System Facility Master Plan* buildout planning period of fiscal 2008 through fiscal 2030. A detailed discussion of the wastewater SDC recommendations is contained in the body of this report. The recommended schedule of future water and wastewater rates are contained in Tables 1 and 2 below. The recommended schedules for residential and commercial/industrial SDCs are contained in Tables 3 and 4. Please note, all recommended future rate adjustments are assumed to be implemented on July 1 of each year (i.e., the first day of each forecasted fiscal year).

Recommended Water and Wastewater Rates

Table 1 - Current and Recommended Water Rates

City of Silverton, Oreg Water System Rate Study Update 2008 Current and Proposed Schedule of Water Rates						
Line Item Description	Current Rates	Forecast				
		2009	2010	2011	2012	2013
Inside City:						
Base charge (monthly)	\$ 11.5100	\$ 9.1866	\$ 9.3162	\$ 9.4470	\$ 9.5791	\$ 9.7124
Use (commodity) charge						
Residential - full price						
Base		1.0716	1.0862	1.1035	1.1295	1.1487
Extra capacity - maximum day		0.5105	0.5169	0.5252	0.5063	0.5166
Extra capacity - maximum hour		0.1054	0.1077	0.1108	0.1503	0.1532
Total	1.2900	1.6875	1.7108	1.7396	1.7862	1.8185
Residential - summer discount (over 10 Ccf)						
Base		0.5358	0.5431	0.5518	0.5648	0.5743
Extra capacity - maximum day		0.2553	0.2585	0.2626	0.2532	0.2583
Extra capacity - maximum hour		0.0527	0.0539	0.0554	0.0752	0.0766
Total	0.6450	0.8438	0.8554	0.8698	0.8931	0.9092
Commercial/Industrial:						
Base		1.0716	1.0862	1.1035	1.1295	1.1487
Extra capacity - maximum day		0.5105	0.5169	0.5252	0.5063	0.5166
Extra capacity - maximum hour		0.1054	0.1077	0.1108	0.1503	0.1532
Total	1.2900	1.6875	1.7108	1.7396	1.7862	1.8185
Outside City:						
Base charge (monthly)	\$ 17.2650	\$ 13.7799	\$ 13.9743	\$ 14.1705	\$ 14.3686	\$ 14.5686
Use (commodity) charge						
Residential:						
Base		1.6074	1.6293	1.6553	1.6943	1.7230
Extra capacity - maximum day		0.7658	0.7754	0.7879	0.7595	0.7748
Extra capacity - maximum hour		0.1581	0.1616	0.1663	0.2255	0.2298
Total	1.9350	2.5313	2.5663	2.6094	2.6792	2.7277
Commercial/Industrial:						
Base		1.6074	1.6293	1.6553	1.6943	1.7230
Extra capacity - maximum day		0.7658	0.7754	0.7879	0.7595	0.7748
Extra capacity - maximum hour		0.1581	0.1616	0.1663	0.2255	0.2298
Total	1.9350	2.5313	2.5663	2.6094	2.6792	2.7277

Table 2 - Current and Recommended Wastewater Rates

City of Silverton, Oregon Wastewater Rate Study Update - 2008 Schedule of Current and Recommended Wastewater Rates ¹						
Line Item Description	Current Rates	Forecast				
		2009	2010	2011	2012	2013
<i>Customer Account Service (BASE) Charges:</i>						
Inside City monthly	5.87000	13.54514	13.69945	13.85552	14.01337	14.17301
<i>Commodity (USE) Charges:</i>						
Residential						
Sanitary flow and I&I		2.91618	2.97200	3.02187	2.98301	3.03087
Strength - BOD		1.01936	1.03203	1.04768	1.10244	1.11069
Strength - TSS		0.85627	0.86692	0.88007	0.92606	0.93299
Total - \$/Ccf	5.38000	4.79180	4.87095	4.94962	5.01151	5.07456
Commercial I						
Sanitary flow and I&I		2.91618	2.97200	3.02187	2.98301	3.03087
Strength - BOD		1.01936	1.03203	1.04768	1.10244	1.11069
Strength - TSS		0.85627	0.86692	0.88007	0.92606	0.93299
Total - \$/Ccf	5.38000	4.79180	4.87095	4.94962	5.01151	5.07456
Commercial II						
Sanitary flow and I&I		2.91618	2.97200	3.02187	2.98301	3.03087
Strength - BOD		3.05807	3.09610	3.14305	3.30732	3.33208
Strength - TSS		2.56881	2.60075	2.64020	2.77818	2.79898
Total - \$/Ccf	6.53000	8.54306	8.66885	8.80512	9.06850	9.16193
Commercial III						
Sanitary flow and I&I		2.91618	2.97200	3.02187	2.98301	3.03087
Strength - BOD		5.09678	5.23842	5.23842	5.51219	5.55346
Strength - TSS		4.28135	4.40033	4.40033	4.63030	4.66497
Total - \$/Ccf	8.71000	12.29431	12.61075	12.66062	13.12550	13.24930
Industrial						
Sanitary flow and I&I - \$/Ccf	N/A	2.91618	2.97200	3.02187	2.98301	3.03087
BOD - \$/lb	N/A	0.81679	0.82695	0.83949	0.88336	0.88998
TSS - \$/lb	N/A	0.68611	0.69465	0.70518	0.74204	0.74759

¹ Per §13.56.110 of the Silverton Municipal Code: "Schedule S-2 (Outside Corporate Limits). One and one-half times the rates of similar classifications in Schedule S-1 (Inside Corporate Limits)..."

Recommended Schedules of SDCs

Table 3 - Recommended Schedule of Residential SDCs

City of Silverton Draft Schedule of Proposed Residential Wastewater System Development Charges Wastewater SDC Update - 2008						
Meter Size	AWWA Rated Flow (GPM)*	Flow Factor Equivalence	Proposed Schedule of Wastewater SDCs			
			Reimbursement	Improvement	Administration	Total
% & ¼ inch	15	1.00	1,818	2,517	44	4,378
1 inch	25	1.67	3,029	4,195	73	7,297
1½ inch	50	3.33	6,059	8,390	146	14,595
2 inch	80	5.33	9,694	13,424	234	23,352
3 inch	160	10.67	19,387	26,848	468	46,703
4 inch	250	16.67	30,293	41,950	731	72,974
6 inch	500	33.33	60,586	83,900	1,461	145,947
8 inch	800	53.33	96,937	134,240	2,338	233,516
10 inch	1,250	83.33	151,464	209,750	3,653	364,868
12 inch	2,160	144.00	261,730	362,449	6,313	630,492

* Recommended maximum rate for continuous operations; per American Water Works Association standards effective January 1, 2003 for cold water meters- displacement type, bronze main case. ANSI approval October 11, 2002. American Water Works Association ANSI/AWWA C700-02 (Revision of ANSI/AWWA C700-95).

Table 4 - Recommended Schedule of Commercial/Industrial SDCs

City of Silverton Draft Schedule of Proposed Commercial/Industrial Wastewater System Development Charges Wastewater SDC Update - 2008					
Section 1 - Proposed SDCs for Commercial Classes:					
A. Imputed strength of wastewater discharge by class:					
	Customer Class Pollutant Loading Assumptions				
	Residential	Commercial I	Commercial II	Commercial III	
BOD (mg/l)	200	200	600	1,000	
TSS (mg/l)	200	200	600	1,000	
BOD load factor	1	1	3	5	
TSS load factor	1	1	3	5	
B. Allocation of SDC components to service demands:					
	Flow (Q)	BOD	TSS	Growth ERUs	
Reimbursement fee:					
Net utility plant-in-service basis available to serve future customers	\$ 3,282,273	\$ 1,519,055	\$ 1,122,607	3,259	
SDC per ERU	1,007	466	344		
Improvement fee:					
Future project costs planned to serve growth	\$ 5,142,332	\$ 1,530,619	\$ 1,530,619	3,259	
SDC per ERU	1,578	470	470		
C. Derivation of SDC by customer class:					
	Residential	Commercial I	Commercial II	Commercial III	
Reimbursement fee	\$ 1,818	\$ 1,818	\$ 3,439	\$ 5,060	
Improvement fee	2,517	2,517	4,395	6,274	
Subtotal	4,335	4,335	7,834	11,334	
add: administrative cost recovery	44	44	79	115	
Total SDC per strength weighted Equivalent ERU	\$ 4,378	\$ 4,378	\$ 7,913	\$ 11,448	
Billing factor by class	1.0000	1.0000	1.8073	2.6147	
Section 2 - Proposed SDCs for Industrial Class:					
A. ERU assumptions (per master plan) and conversion factors:					
Gallons of wastewater generated per capita per day	88.20				
Persons per dwelling unit	2.70				
Gallons per dwelling unit (ERU) per day	238.14				
Strength of discharge conversions:					
Given: 1 gram/liter =	0.008341131	lbs/gallon	Source: Chemical Engineers' Handbook		
Therefore: 200 mg/l BOD =	0.001668226	lbs/gallon	0.397271381	lbs/day/ERU	
Therefore: 200 mg/l TSS =	0.001668226	lbs/gallon	0.397271381	lbs/day/ERU	
B. Schedule of proposed industrial SDCs					
	Reimbursement	Improvement	Total		
Flow (Q) - dollars per gallon per day	\$ 4.2289	\$ 6.6254	\$ 10.8542		
BOD - dollars per pound per day	1,173.1873	1,182.1187	2,355.3061		
TSS - dollars per pound per day	867.0056	1,182.1187	2,049.1244		

Snapshot of the Results of the Study

The project team presented the results of the study to the Silverton City Council on March 3, 2008. The high points of the presentation are capsulated below in Table 5:

Table 5 - Summary of Cost of Service Analysis

Water Rates	Wastewater Rates	Wastewater SDCs
<ul style="list-style-type: none"> FY 2008-09 revenue requirements up 3.7%; would have been up 20.8% if not for the use of SDCs to pay debt service 	<ul style="list-style-type: none"> FY 2008-09 revenue requirements up 3.1%; would have been up 20.7% w/o the benefit of SDCs and Oregon Garden revenue 	<ul style="list-style-type: none"> Proposed residential equivalent wastewater SDC at \$4,378, down \$14 from current fee based on new data from Master Plan
<ul style="list-style-type: none"> Proposed rates – Base down from the current rate of \$11.51 to \$9.19; Use charge up from \$1.29 per Ccf to \$1.69 per Ccf. Assumes summer discount program in effect. Under this structure, high volume users will pay more. 	<ul style="list-style-type: none"> Recommendation to Council - direct Staff to investigate the feasibility of refinancing some or all of wastewater long term debt outstanding. Market rates are now in favor of the City. 	<ul style="list-style-type: none"> Proposal made to City SDC Advisory Committee on January 16, 2008. Committee agreed, no more meetings required.
<ul style="list-style-type: none"> Summer discount program causes low volume users to subsidize high volume users by \$0.1706 per Ccf; could cost a low volume user as much as \$6.82 per year or 57¢ per month. City Council briefed on this development; prefer to continue with program 	<ul style="list-style-type: none"> Key cost shift from flow to customer accounts due to the treatment of general fund transfers. Base charge goes from \$5.87 to \$13.55 per month; Use charge goes down from \$5.38/Ccf to \$4.79/Ccf 	
<ul style="list-style-type: none"> Last summer, there were 1,180 in-City residential customers who consumed 1,000 cf or less per month; there were 1,553 in-City residential customers who consumed more than 1,000 cf during summer months. 	<ul style="list-style-type: none"> Low volume winter average residential customers will see their sewer bills increase in excess of the general increase in revenue requirements; high strength customers will also see their bills increase in excess of general revenue requirements increases 	
	<ul style="list-style-type: none"> Propose to combine the Commercial IV class with the Industrial class; Set sub-fees for flow, pounds BOD, and pounds TSS 	

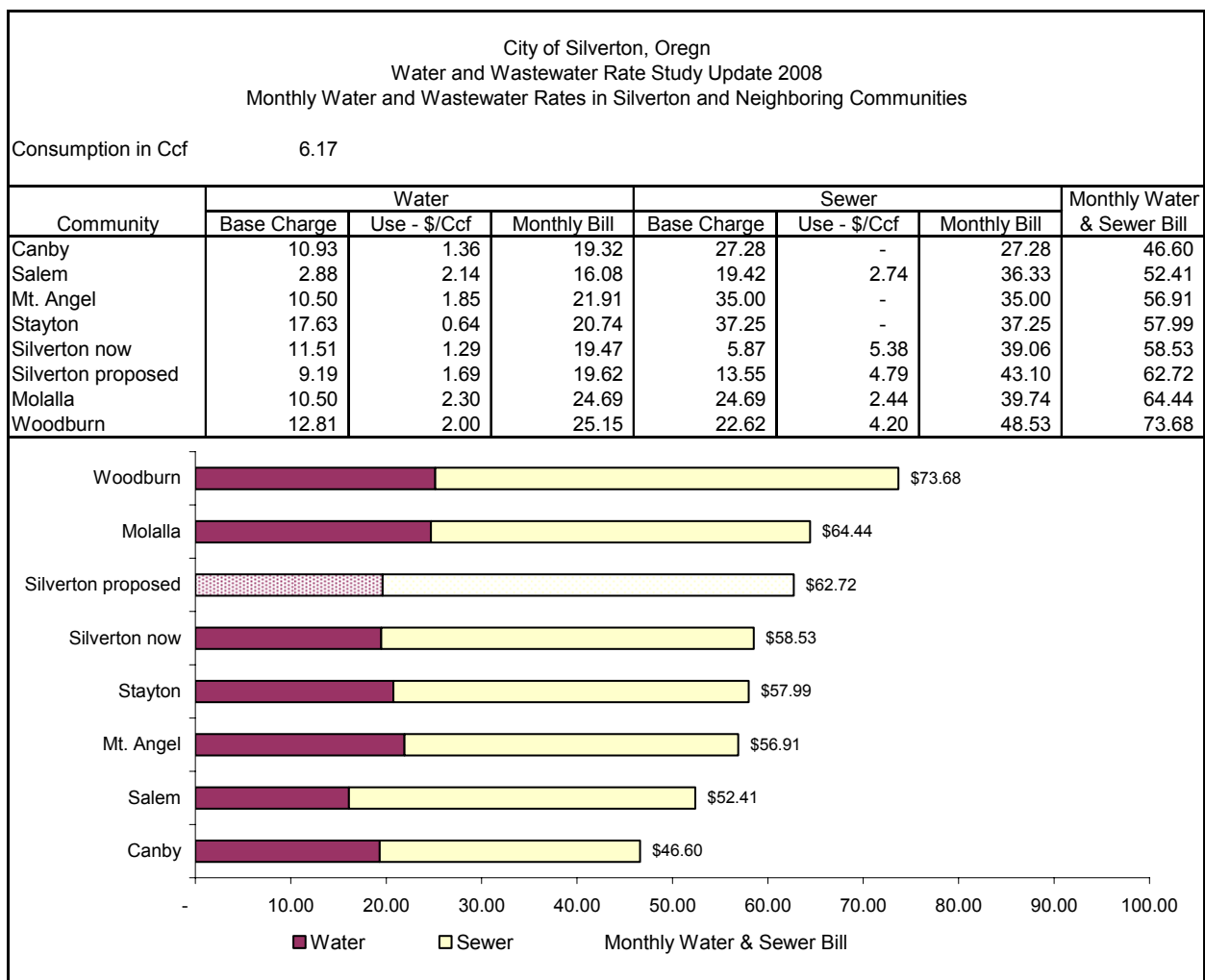
Summary of Consultant Recommendations

- ✦ Over the past five years, the City has made significant positive progress in the areas of funding contingencies and reserves for asset replacement. It is recommended the City continue working toward full depreciation funding in both the water and wastewater utilities. This reflects the City's commitment to setting aside reasonable amounts annually for future replacements to the City's water and sewer infrastructure.
- ✦ A fundamental underpinning for the water and wastewater forecast of revenue requirements is the use of SDCs in support of debt service. At their January, 2008 meeting, the City Council debated the merits of this approach, and agreed with the Project Team that a prudent use of SDCs in support of debt service was in the best interests of rate payers. SDC revenues can and should be used to service debt for both water and sewer capital improvements. Historically, these receipts have not been used for debt service payment thereby transferring the entire cost of borrowing to utility rates. It is recommended that proportionate transfers from the SDC funds be made to balance the rate impacts of debt repayment for the City's utility customers.
- ✦ This analysis assumes the City will proceed with the wastewater treatment plan digester expansion and biosolids handling project. This project is planned to be funded from the proceeds of a new twenty year revenue bond issuance. It is recommended the City proceed with this funding plan in fiscal 2008-09. It is further recommended the City explore the feasibility of securing state, and/or federal grant funding support for this project.
- ✦ The water rate analysis is predicated on a funding plan for capital projects that are not identified in a current water system master plan. It is recommended the City embark on a water system master plan update within the next fiscal year.
- ✦ The City's policy of reducing residential water use charges by 50% for consumption over 10 Ccf during the summer months (June – September) was implemented to encourage outdoor irrigation. The City Council was briefed on the potential adverse impacts to eligible customers who do not participate in the discount program, and chose to continue the program for other policy reasons. It is recommended the City Staff continue to monitor the participation in this program, and regularly report back to the Council with findings.
- ✦ The City is carrying a significant amount of very long term debt in the form of four, 40-year revenue bonds. While this longer-term debt effectively reduces immediate cash flow requirements, they do carry with them significantly higher total interest costs. It is also the case that most infrastructure improvements funded through these bonds will likely have a useful life of 20 years rather than 40. Given current interest rates, the City should evaluate the feasibility of replacing or advance refunding these 40-year bonds with shorter term securities.
- ✦ The City currently charges an SDC of \$4,392 for a new single family residence to connect to the wastewater system. The results of this study indicate that the City should reduce this charge by \$14, resulting in a new single family residential sewer SDC of \$4,378.

- ✦ The Consultant team has reviewed the City's current methodology for calculating its wastewater SDC and found that it complies with statutory construction requirements for the reimbursement and improvement fees. There is no need to modify this current methodology.
- ✦ Some of the most significant revisions to ORS 223 since its inception in 1991 have dealt with record keeping and notification requirements. Under ORS 223.311 the City must prepare by, January 1 of each year, an accounting of SDC receipts and expenditures. This accounting should be reported to the Council on an annual basis and made available for public inspection.

Water and Wastewater Rates in Neighboring Communities

Figure 1 - Neighboring Communities Water and Wastewater Bill Comparison



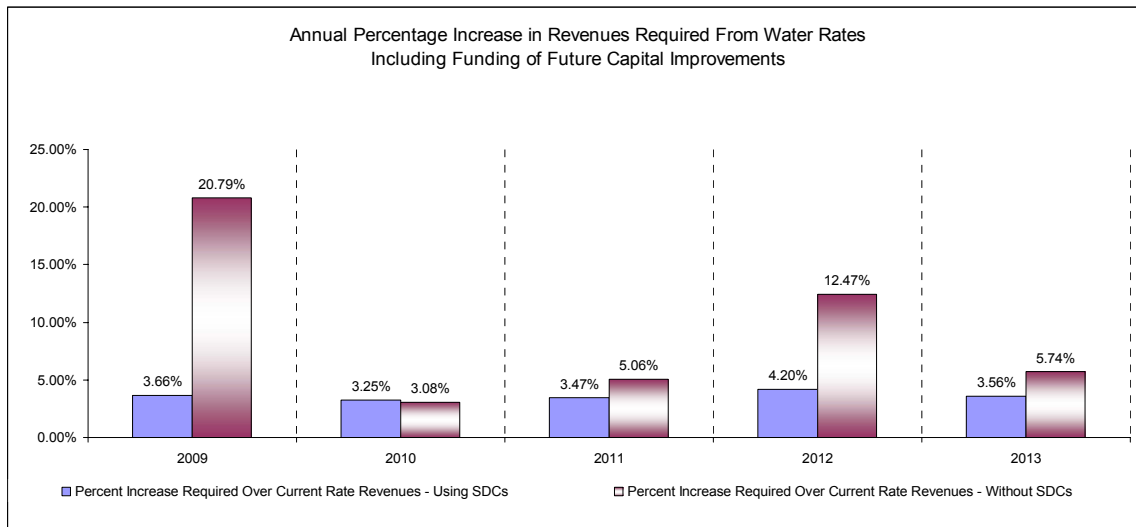


Analysis Section

Water Revenue Requirements and Rates

Two financial planning scenarios were modeled for the water system. The first assumed system development charges (SDCs) would not be used in support of debt service. This case resulted in a 21% increase in revenues required from rates for fiscal 2008-09, and was deemed unacceptable. The second case assumed the prudent use of SDCs in support of debt service, and produced a series of annual increases in revenue requirements starting out at 3.7% in fiscal 2008-09 and ending with a 3.6% increase in fiscal 2012-13. The graphical outcomes of these two scenarios are shown in figure 2.

Figure 2 - Forecast of Annual Changes in Water System Revenue Requirements



Both of these planning scenarios assumed the entire \$6.4 million five year water capital improvement plan (CIP) would be fully funded from the proceeds of new 20 year revenue bonds issued in 36 month cycles (to minimize issuance costs) starting in fiscal 2008-09.

The “Use SDCs to Fund Debt Service” scenario became the base case for the rate analysis. The ratemaking methodology that was used is called the “base-extra capacity method”, and is consistent with the methodology the City has employed since 1982. Under this methodology, costs of service are separated into three primary cost components: (1) base costs, (2) extra capacity costs, and, (3) customer costs.

Base costs are those that tend to vary with the total quantity of water used plus those operations and maintenance (O&M) expenses and capital costs associated with service to customers under average load conditions, without the elements of cost incurred to meet water use variations and resulting peaks in demand. Base costs include O&M expenses of supply, treatment, pumping, and distribution facilities. Base costs also include capital costs related to water plant investment associated with serving customers to the extent required for a constant, or average, annual rate of demand/usage.

Extra capacity costs are those associated with meeting rate of use requirements in excess of average and include O&M expenses and capital costs for system capacity beyond that required

for average rate of use. These costs have been subdivided into costs necessary to meet maximum-day extra demand, and maximum-hour demand in excess of maximum day demand.

Customer costs comprise those costs associated with serving customers, irrespective of the amount or rate of water use. They include meter reading, billing, and customer accounting and collection expense, as well as maintenance and capital costs related to meters and services.

As the data in Table 6 below shows, based on the cost of service allocations that have been developed in consultation with City staff, I am proposing to reduce the current base charge from \$11.51 per month to \$9.19 per month. This reduction is offset by a proposed increase in the commodity rate. For fiscal 2008-09, the proposed commodity rate would be \$1.69 per Ccf vs. the current rate of \$1.29 per Ccf.

Table 6 - Draft Schedule of Current and Proposed Water Rates

Customer Class and Rate Component	Current Rates	Proposed for Fiscal 2009
Inside City:		
Base charge (monthly)	\$ 11.5100	\$ 9.1866
Use (commodity) charge		
Single Family Residential - full price		
Base		1.0716
Extra capacity - maximum day		0.5105
Extra capacity - maximum hour		0.1054
Total	1.2900	1.6875
Single Family Residential - summer discount (over 10 Ccf)		-
Base		0.5358
Extra capacity - maximum day		0.2553
Extra capacity - maximum hour		0.0527
Total	0.6450	0.8438
Multifamily/Commercial/Industrial:		
Base		1.0716
Extra capacity - maximum day		0.5105
Extra capacity - maximum hour		0.1054
Total	1.2900	1.6875
Outside City:		
Base charge (monthly)	\$ 17.2650	13.7799
Use (commodity) charge		
Residential:		
Base		1.6074
Extra capacity - maximum day		0.7658
Extra capacity - maximum hour		0.1581
Total	1.9350	2.5313
Commercial/Industrial:		
Base		1.6074
Extra capacity - maximum day		0.7658
Extra capacity - maximum hour		0.1581
Total	1.9350	2.5313

The data in table 6 also shows rates for the in-City single family residential summer commodity rate discount program, and for outside City customers (billed at 1.5 times the in-City rate).

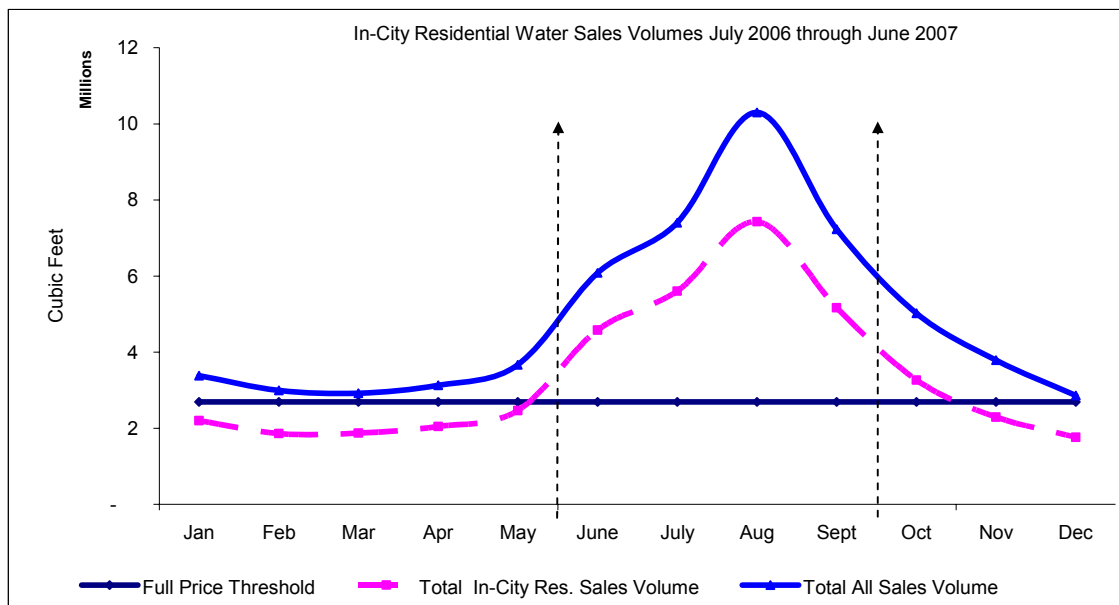
Analysis of the Summer Water Discount Program

In December, 2007 when the project team gave a kickoff presentation to the Council, the team was concerned this summer discount program could have deleterious fiscal impacts on the water system customers. The Mayor requested a detailed investigation of this assumption and report back to the Council with any hard information that was uncovered. To facilitate this investigation, the project team studied the program from two sides, the cost side, and the revenue recovery side.

On the cost side, City Staff undertook an exhaustive analysis of how costs are incurred over the year for labor, materials & services, and capital outlays. The results of this analysis indicated there are no spikes in cost incursion due to the summer water commodity discount program. In essence, water system costs are incurred uniformly throughout the year. The principal reason for this uniformity is the absence of peak purchased water costs. Silverton is blessed to own raw water resources well in excess of their peaking demands. Many Cities are not in this enviable position, and have to purchase water from neighboring communities to meet their peak day and peak hour demands (often times at a significant pricing premium). However, the project team did find that revenues are recovered from customers disproportionately as a result of the summer discount program.

Figure 3 is a chart of water sales volumes by month for the fiscal year 2006-07. The fiscal data (i.e., July 2006 through June 2007) is displayed in calendar format for ease of viewing.

Figure 3 - Water Sales In Silverton



In Figure 3, the amount of water sold at the discount (between June and September) is represented as the area beneath the dashed curve but above the solid horizontal full price threshold line. Numerically, 17% of all water sold in fiscal 2006-07 was sold at a discount.

From a cost of service perspective, revenue lost from discounted commodity sales has to be made up from the “full price” commodity rate billed over the entire year. This data was loaded into the water rates model, and the project team came up with the following conclusions:

- ✦ For the forecast year 2008-09, the October-May full price commodity rate calculated out to \$1.6875 per Ccf. If the discount program was eliminated, the full year commodity rate would drop to \$1.5169 per Ccf.

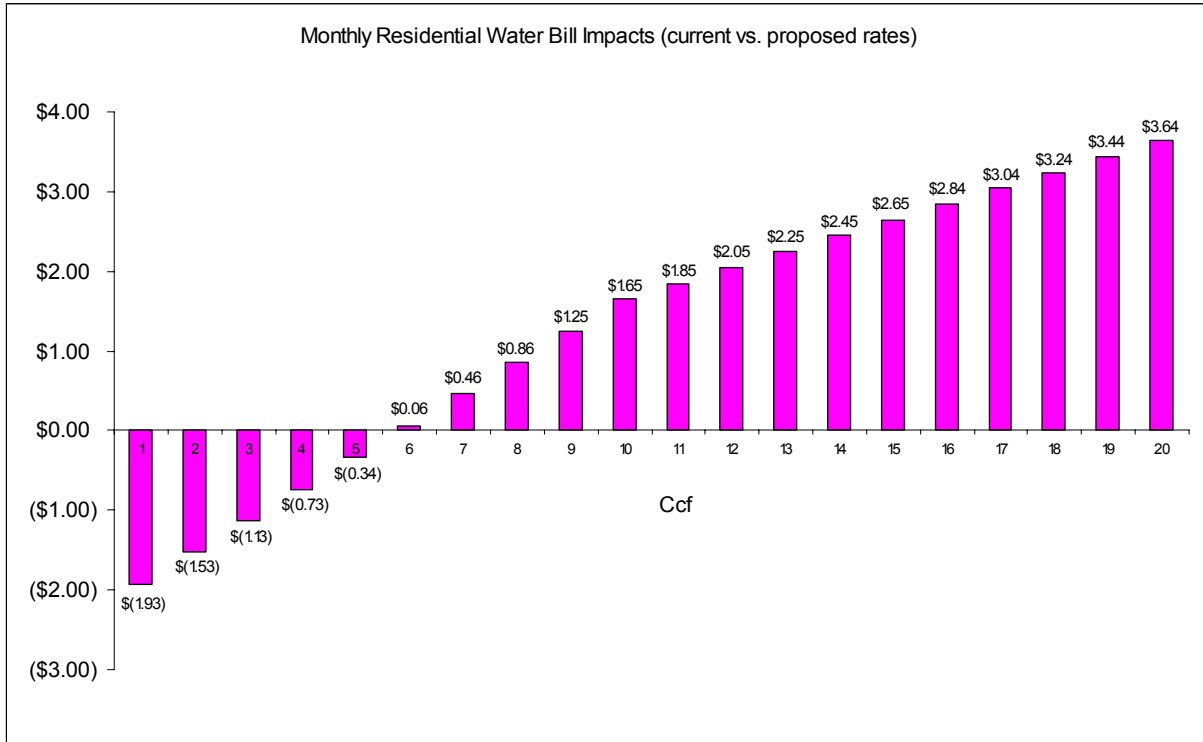
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- ✦ Under the current discount program guidelines, and for the forecast year fiscal 2008-09, a customer that uses exactly 1,000 cubic feet of water in each month from June to September, will be subsidizing high volume users by \$0.1706 per 100 cubic foot unit.
 - ✦ This subsidy could amount to a maximum of \$6.8240 from the low volume customer to the high volume customer over the fiscal year (i.e., \$0.5687 per month).
 - ✦ City billing records indicate that for the June through September 2007 summer period, on average, 1,180 in-City residential customers consumed 1,000 or less cubic fee per month. Conversely, for the same period, on average, 1,553 in-City residential customers consumed 1,000 or more cubic feet per month. Based on this data, a significant percentage of in-City customers (i.e., 43%) do not participate in the discount pricing program, but pay for it through higher non-summer commodity prices.

On March 3, 2008, the City Council was briefed on this analysis. After discussion and deliberation, the Council chose to continue the summer water commodity discount program for reasons not driven by the cost analysis discussed above. The reasoning behind this policy is: if customers get rate relief in the summer, they will be more inclined to increase outdoor irrigation. This behavior will then promote green lawns and increase the appeal of Silverton to visitors and enhance the quality of life to residents.

Impact of Recommended Water Rates on Monthly Water Bills

Figure 4 contains a forecast of monthly water bills impacts over a range of water sales (expressed in Ccf) now and under the draft proposed rates for fiscal 2008-09. As the data in Figure 3 shows, customers on the very low end of the consumption range will see monthly purchased water costs decrease because of the proposed reduction in the base fee from the current rate of \$11.51 to the proposed rate of \$9.19 per meter per month. Once a customer consumes six or more Ccf in a month, the total bill begins to increase versus current commodity rates.

Figure 4 - Forecast of Changes in Summer Monthly Water Bills



Wastewater Revenue Requirements and Rates

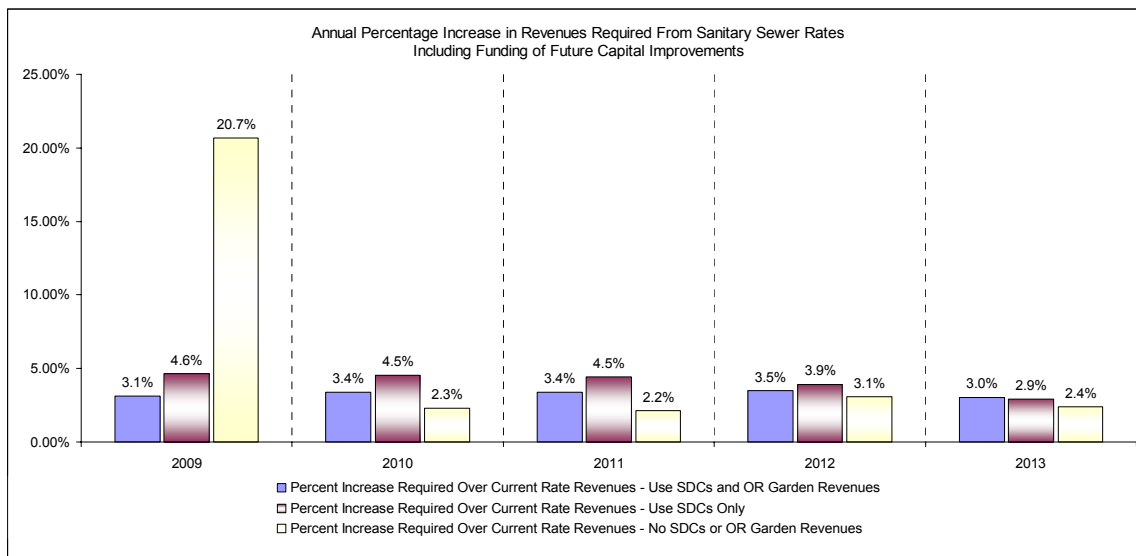
Financial planning for the wastewater system consisted of three potential scenarios. These scenarios were:

- ✦ Status Quo – Under this scenario, the project team followed the current City policy of using SDCs only in support of capital construction. O&M expenses, transfers to other funds, and debt service costs, had to be recovered from rates. Modeling of this scenario resulted in a first year increase in revenue requirements of 21%, and was deemed unacceptable.
- ✦ Use SDCs in support of debt service – As in the case for water, this scenario assumes SDCs will be used in support of debt service obligations. Modeling of this scenario produced annual percentage increases in revenue requirements at around 4.5% per year for the first three years of the forecast, with the last two years coming in at 3.9% and 2.4% respectively.
- ✦ Use SDCs and Oregon Garden Revenues – This scenario uses the SDCs in support of debt service, but also assumes additional resources would become available to buy down wastewater system revenue requirements as follows:

- ✦ Tourism tax receipts from the Oregon Gardens at \$30,000 per year
- ✦ Proceeds from the sale of land to the Oregon Garden Hotel at \$77,000 per year

Modeling of this scenario produced the most favorable forecast, starting at a 3.1% increase in system revenue requirements for fiscal 2008-09, and around 3.5% per year thereafter. This scenario also produced the best fit when taking fund balances and cash reserves into account. Figure 5 shows the three scenarios graphically over the five year forecast horizon.

Figure 5 - Forecast of Annual Increases in Wastewater System Revenue Requirements



This last planning scenario became the base case for ratemaking. All three of these planning scenarios assumed the entire \$9.8 million, Master Plan wastewater system capital improvement plan (CIP) would be fully funded from the proceeds of new 20 year revenue bonds issued in 36 month cycles (to minimize issuance costs) starting in fiscal 2008-09. Most of the master plan CIP is targeted for the bio-solids handling and treatment project (i.e., \$6.5 million out of the \$9.8 million total), and it is currently scheduled to be constructed in the next 24 months.

For wastewater ratemaking, the project team used a functional cost allocation methodology. Under this approach, system costs by budget line item are allocated to cost components using purpose-based, cost-causative factors. We relied on interviews with knowledgeable public works staff to provide estimates of percentages of O&M expenses that are allocated to the wastewater cost centers of flow, biochemical oxygen demand (BOD), total suspended solids (TSS), and customer accounts. It should also be pointed out this methodology has been used by the City for the development of wastewater rates for the last twenty five years.

In this year's rate study, the project team is proposing to make a significant change in the cost allocation strategy. This change centers on the ratemaking treatment of the budgeted transfers from the Sewer Operating fund (030) to the General Fund (010) for services. In past rate studies, 100% of this cost was assigned to the wastewater flow cost center, and hence would be captured in the use or commodity portion of the rate structure. For this fiscal year, transfers to the General Fund are budgeted at \$420,551 (i.e., 17% of budgeted wastewater system rate revenues). A breakdown of this total is shown below:

Breakdown of FY08 General Fund Transfer:

Sources of Funds:		
	Transfer from Sewer (030)	<u>\$ 420,551</u>
Uses of Funds:		
012	City Council	17,699
013	Administration	86,257
015	Finance	73,338
151	Planning	69,541
156	Code Enforcement	12,453
190	Facilities Maintenance	81,602
300	Computer Services	14,128
011	Non Departmental	<u>65,533</u>
Total Uses of Funds		<u>\$ 420,551</u>

A detailed analysis of the components of this transfer indicate that all of these costs are either fixed (i.e., do not vary with flow), or are incurred to provide customer services such as billing, code enforcement, or general administration. For this reason, I am recommending that 100% of this budget line item be assigned to the customer accounts cost center. This will result in a significant increase in the base (fixed) portion of the rate structure. The current customer account (base) charge is \$5.87 per account per month. This analysis proposes to increase this fixed charge to \$13.55 per account per month. The entire proposed schedule of wastewater rates for fiscal 2008-09 is shown below in Table 7:

Table 7 - Current and Proposed Schedule of Wastewater Rates

Class	Commodity Charge (use rate) \$/100 cubic feet		Customer Account Charge (base rate) \$/account/month	
	Current	Proposed	Current	Proposed
Residential	\$5.38	\$4.79	\$5.87	\$13.55
Commercial I	5.38	4.79	5.87	13.55
Commercial II	6.53	8.54	5.87	13.55
Commercial III	8.71	12.29	5.87	13.55
Commercial IV & Industrial:			5.87	13.55
Flow - \$/Ccf		2.9162		
BOD - \$/pound		0.8168		
Tss - \$/pound		0.6861		

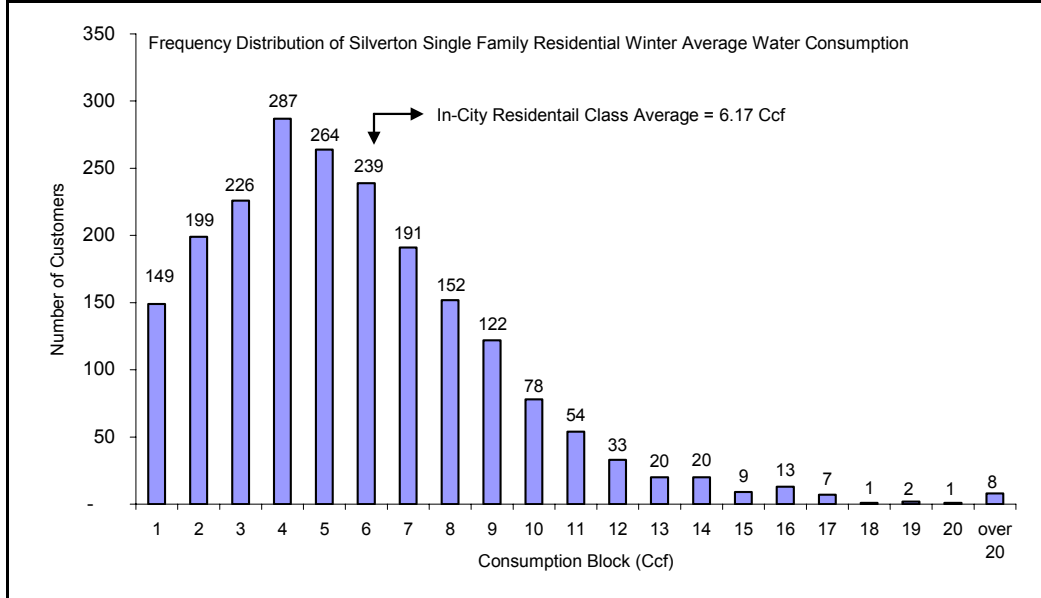
Impact of Recommended Wastewater Rates on Monthly Wastewater Bills

As discussed above, for fiscal 2008-09, overall wastewater system revenue requirements are forecasted to increase by 3.1% versus this fiscal year. However, due to the proposed change in the assignment of general fund transfer costs to customer accounts (i.e., base charge) the rate impacts to customers will be significantly different. This cost shift is particularly evident in the estimated monthly bills for the residential class of customers.

Table 8 contains the data that creates the frequency distribution of monthly winter average water consumption for in-city residential customers. In statistics, a frequency distribution is a list of the values that a variable takes in a sample. It is usually a list, ordered by quantity, showing the number of times each value appears. In this case, the data shows the number of customers that have the same winter average water consumptions (expressed in Ccf) over a list range of water consumption from zero to 20 Ccf. This tool is extremely helpful in rate making because it helps analysts evaluate trends in consumption and measures of central tendency for each customer class.

Table 8 - Frequency Distribution of In-City Residential Winter Water Consumption

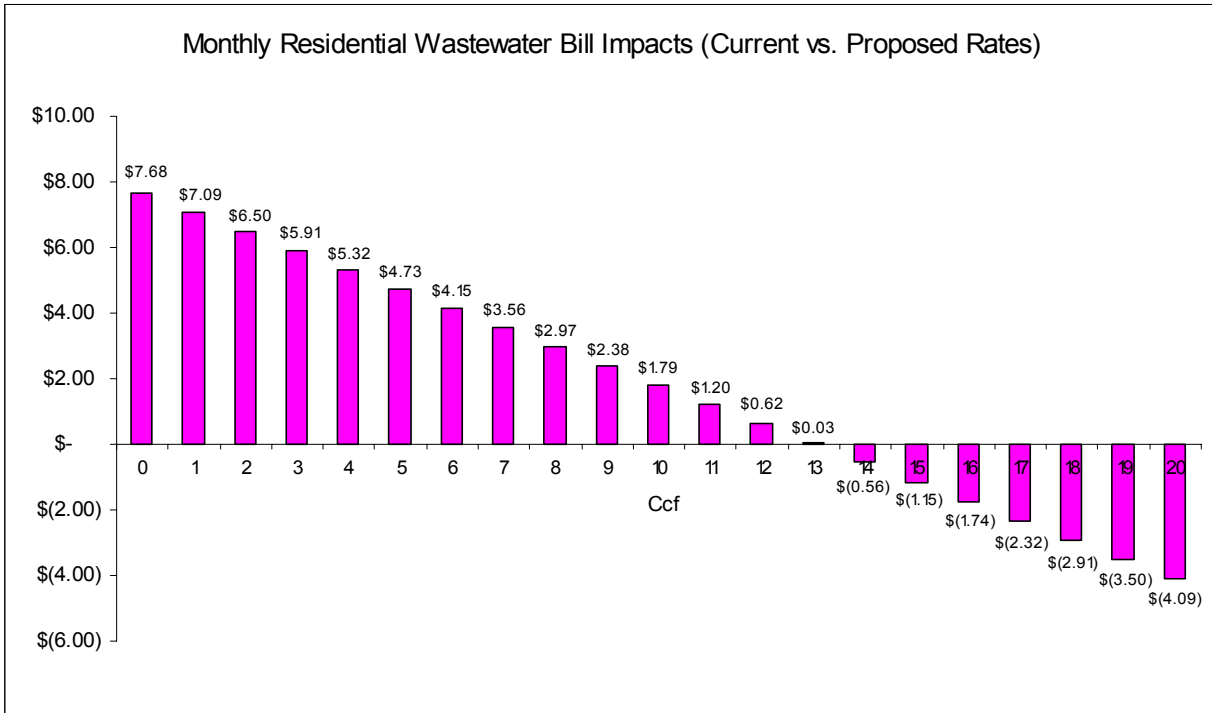
Ccf	Number of Customers	Block %	Cumulative %	Class Measures of Central Tendency			Standard Deviation
				Average	Median	Mode	
0	15	0.72%	0.72%				
1	149	7.13%	7.85%				
2	199	9.52%	17.37%				
3	226	10.81%	28.18%				
4	287	13.73%	41.91%				
5	264	12.63%	54.55%				
6	239	11.44%	65.98%				
7	191	9.14%	75.12%				
8	152	7.27%	82.39%				
9	122	5.84%	88.23%				
10	78	3.73%	91.96%				
11	54	2.58%	94.55%				
12	33	1.58%	96.12%				
13	20	0.96%	97.08%				
14	20	0.96%	98.04%				
15	9	0.43%	98.47%				
16	13	0.62%	99.09%				
17	7	0.33%	99.43%				
18	1	0.05%	99.47%				
19	2	0.10%	99.57%				
20	1	0.05%	99.62%				
over 20	8	0.38%	100.00%				
	2,090	100.00%		6.17	5.65	4.39	3.91



As the data in Table 8 shows, roughly 66% of all in-City residential customers have a winter average of six (6) or less Ccf. The shift from a monthly base rate of \$5.87 to \$13.55 will adversely impact these customers. However, this revised cost allocation is justified, and grounded in cost of service principals. It is appropriate for these low volume customers to bear their proportionate share of the fixed costs of the wastewater system through the increased base charge.

Figure 6 contains estimated changes in monthly wastewater bills for in-City residential customers over a range of winter average water consumption from zero to twenty Ccf.

Figure 6 – Forecast of Changes in Monthly Residential Wastewater Bills



As expected, low volume customers will experience significant rate increases due to the cost shifts from flow (use) and to customer accounts (base). Conversely, any customer who has a winter average consumption of eight or more Ccf will see rate increases at the overall rate of increase in wastewater system revenue requirements or less.

Concerning the commercial and industrial customer classes, the project team is proposing to keep the distinctions of Class I through Class III commercial customers based on their imputed wastewater strength per prior rate studies. However, the team is proposing to combine the Commercial Class IV customers with the Industrial Class and establish three distinct sub-rates for this combined class. For fiscal 2008-09, these rates are proposed to be::

- ✦ Flow charge – expressed in \$/Ccf
- ✦ BOD charge – expressed in \$/pound
- ✦ TSS charge – expressed in \$/pound

Table 9 shows the Fiscal 2008-09 proposed new rates for the combined Commercial IV/Industrial class, with a comparison to an average of like charges in neighboring communities:

Table 9 - Proposed Fiscal 2008-09 Industrial Rates and Industrial Wastewater Rates in Neighboring Communities

Jurisdiction	Flow \$/Ccf	Strength of Discharge \$/lb.	
		BOD	TSS
Clean Water Services (Washington County): over 800 mg. per liter over 400 mg. per liter	2.17	0.11	0.17
Vancouver, WA - Industrials	4.00		
Vancouver, WA - Electronics Manufacturers	3.09		
Portland	1.99	0.45	0.48
Salem	1.75	0.34	0.24
Wilsonville	2.52	0.64	0.64
Woodburn	1.42	0.95	0.28
Peer Group Average	\$ 2.42	\$ 0.50	\$ 0.36
Silverton (COSA)	\$ 2.92	\$ 0.82	\$ 0.69

Wastewater System Long Term Debt Analysis

The consultant team has been asked to review the City’s policy concerning the length (i.e. term) of long term debt instruments used to finance water and wastewater infrastructure investments. Prudent use of debt is a sound management practice and is used throughout the utility industry. Referred to as “leverage”, long term debt often represents 55% to 60% of a well run utility’s total capitalization. In the municipal bond market, terms vary widely, and are subject to negotiation between lender and borrower. Generally, the term for new, unsubsidized municipal water and sewer revenue bonds in Oregon is 20 to 25 years. The reason for this is that the term of the loan generally matches up with the useful lives of the assets that are going to be purchased with the proceeds of the loan.

Throughout the development of the financial planning scenarios, existing wastewater system debt service has been a key requirement to be funded. For this fiscal year, the wastewater system is budgeted to pay \$581,225 in debt service, nearly one-quarter of the total system revenue requirement from rates. As of June 30, 2007, there is approximately \$8 million in principal outstanding on wastewater system long term debt. This long term debt is comprised of the following issues:

- ✦ Note payable – OECDD, original issue amount \$1,349,460 in 1997, ~\$800k current principal outstanding, 20 year term, 5.1409% interest.
- ✦ Note payable – OECDD, original issue amount \$270,592 in 1997, deferred P and I until 2006, installments over ten years at ~\$30k, 6.0% interest.
- ✦ Revenue bond – USDA RUS, original issue amount ~\$5.3m in 2000, annual payments ~\$306k, 40 year term, 4.875% interest.
- ✦ Revenue bond – USDA RUS, original issue amount \$2m in 2000, annual payments ~\$119k, 40 year term, 5.125% interest.
- ✦ Revenue bond – USDA RUS, original issue amount \$350k in 2004, annual payments ~\$19k, 40 year term, 4.375% interest.

Current credit market conditions have recently turned in favor of the City relative to refinancing some or all of this debt. Today, market rates on 20 year revenue bonds are below 4.5%. In consultation with City Staff and the Council, the project team is recommending to the Council to direct Staff to investigate the feasibility of refinancing some or all of the debt. It is further recommended the City propose a restructuring strategy that would keep debt service payments roughly the same, but hopefully, significantly reduce the life of the bonds outstanding.

Wastewater SDC Methodology Update

On January 16, 2008 the project team made a presentation to the City’s SDC Advisory Committee concerning the methodology update for the wastewater SDC. In essence, the team updated the City’s current wastewater SDC methodology with new data and planning assumptions from the 2007 City of Silverton Wastewater System Facility Plan, February, 2007 (the Plan). The Committee was engaged, and gave useful comments to bolster the draft analysis. The most important comment from the Committee was to increase our proposed improvement fee to include the cost of the Master Plan. That cost was \$150,000, and by Committee agreement, 53% of that cost was assigned to growth, and hence increased the overall improvement fee by \$24.

Overall, the committee approved the calculation of the single family residential equivalent wastewater SDC at \$4,378, down \$14 from the current fee. Table 10 gives a component breakdown for the current and proposed residential equivalent SDC, and Table 11 shows the entire proposed schedule of residential wastewater SDCs by meter size:

Table 10 - Component Breakdown of the Proposed Residential Equivalent Wastewater SDC

City of Silverton Comparison of Current and Proposed Wastewater SDCs by Fee Type For a Standard Residential 3/4" Meter Wastewater SDC Update - 2008				
Line Item Description	Reimbursement	Improvement	Administrative Cost Recovery	Total
Current	2,472	1,920	-	4,392
Draft Proposed	1,818	2,517	44	4,378
Difference	(654)	597	44	(14)

Table 11 - Proposed Schedule of Residential Wastewater SDCs by Meter Size

City of Silverton Draft Schedule of Proposed Residential Wastewater System Development Charges Wastewater SDC Update - 2008						
Meter Size	AWWA Rated Flow (GPM)*	Flow Factor Equivalence	Proposed Schedule of Wastewater SDCs			
			Reimbursement	Improvement	Administration	Total
¾ & ¼ inch	15	1.00	1,818	2,517	44	4,378
1 inch	25	1.67	3,029	4,195	73	7,297
1½ inch	50	3.33	6,059	8,390	146	14,595
2 inch	80	5.33	9,694	13,424	234	23,352
3 inch	160	10.67	19,387	26,848	468	46,703
4 inch	250	16.67	30,293	41,950	731	72,974
6 inch	500	33.33	60,586	83,900	1,461	145,947
8 inch	800	53.33	96,937	134,240	2,338	233,516
10 inch	1,250	83.33	151,464	209,750	3,653	364,868
12 inch	2,160	144.00	261,730	362,449	6,313	630,492

* Recommended maximum rate for continuous operations; per American Water Works Association standards effective January 1, 2003 for cold water meters- displacement type, bronze main case. ANSI approval October 11, 2002. American Water Works Association ANSI/AWWA C700-02 (Revision of ANSI/AWWA C700-95).

Commercial and industrial SDCs are based on the City’s current methodology, and are shown below in Table 12:

Table 12 - Proposed Schedule of Commercial and Industrial Wastewater SDCs

City of Silverton Draft Schedule of Proposed Commercial/Industrial Wastewater System Development Charges Wastewater SDC Update - 2008				
Section 1 - Proposed SDCs for Commercial Classes:				
A. Imputed strength of wastewater discharge by class:				
	Customer Class Pollutant Loading Assumptions			
	Residential	Commercial I	Commercial II	Commercial III
BOD (mg/l)	200	200	600	1,000
TSS (mg/l)	200	200	600	1,000
BOD load factor	1	1	3	5
TSS load factor	1	1	3	5
B. Allocation of SDC components to service demands:				
	Flow (Q)	BOD	TSS	Growth ERUs
Reimbursement fee:				
Net utility plant-in-service basis available to serve future customers	\$ 3,282,273	\$ 1,519,055	\$ 1,122,607	3,259
SDC per ERU	1,007	466	344	
Improvement fee:				
Future project costs planned to serve growth	\$ 5,142,332	\$ 1,530,619	\$ 1,530,619	3,259
SDC per ERU	1,578	470	470	
C. Derivation of SDC by customer class:				
	Residential	Commercial I	Commercial II	Commercial III
Reimbursement fee	\$ 1,818	\$ 1,818	\$ 3,439	\$ 5,060
Improvement fee	2,517	2,517	4,395	6,274
Subtotal	4,335	4,335	7,834	11,334
add: administrative cost recovery	44	44	79	115
Total SDC per strength weighted Equivalent ERU	\$ 4,378	\$ 4,378	\$ 7,913	\$ 11,448
Billing factor by class	1.0000	1.0000	1.8073	2.6147
Section 2 - Proposed SDCs for Industrial Class:				
A. ERU assumptions (per master plan) and conversion factors:				
Gallons of wastewater generated per capita per day	88.20			
Persons per dwelling unit	2.70			
Gallons per dwelling unit (ERU) per day	238.14			
Strength of discharge conversions:				
Given: 1 gram/liter =	0.008341131	lbs/gallon	Source: Chemical Engineers' Handbook	
Therefore: 200 mg/l BOD =	0.001668226	lbs/gallon	⇔	0.397271381 lbs/day/ERU
Therefore: 200 mg/l TSS =	0.001668226	lbs/gallon	⇔	0.397271381 lbs/day/ERU
B. Schedule of proposed industrial SDCs				
	Reimbursement	Improvement	Total	
Flow (Q) - dollars per gallon per day	\$ 4.2289	\$ 6.6254	\$ 10.8542	
BOD - dollars per pound per day	1,173.1873	1,182.1187	2,355.3061	
TSS - dollars per pound per day	867.0056	1,182.1187	2,049.1244	

The framework for SDC calculation is established by Oregon Revised Statute (ORS) 223.297-314 which is the basis for this review. Under statute, SDC's are one-time fees imposed on new development and have two components: reimbursement and improvement.

The reimbursement fee considers the cost of existing facilities, prior contributions by existing users of those facilities, the value of the unused/available capacity, and generally accepted ratemaking principles. The objective is “future system users contribute no more than an equitable share to the cost of existing facilities.” The reimbursement fee can be spent on capital costs or debt service related to the systems for which the SDC is applied.

The improvement fee portion of the SDC is based on the cost of planned future facilities that expand the system’s capacity to accommodate growth or increase its level of performance. In developing an analysis of the improvement portion of the fee, each project in the City’s capital improvement plan is evaluated to exclude costs related to correcting existing system deficiencies or upgrading for historical lack of capacity. An example is a facility which improves collection system capacity to better serve current customers. The costs for this type of project must be eliminated from the improvement fee calculation. Only capacity increasing/level of performance costs provide the basis for the SDC calculation. The improvement SDC is calculated as a function of the estimated number of additional equivalent residential units to be served by the City’s facilities over the planning period. Such a fee represents the greatest potential for future SDC changes.

For this review, the City has stated a number of objectives:

- ✦ Review the basis for the charge to ensure a consistent methodology with the benefit of the data contained in the newly adopted Wastewater System Facility Master Plan;
- ✦ Review the City’s current rationale for the reimbursement and improvement elements of the SDC;
- ✦ Review the City’s current sanitary sewer SDC methodology to be sure that is consistent with the City’s approach to charges for other City-delivered services (SDCs);
- ✦ Consider possible revisions to the structure or basis of the charge that might improve equity or proportionality to demand; and
- ✦ Provide clear, orderly documentation of the assumptions, methodology, and results, so that City staff can, by reference, respond to questions or concerns from the public.

SDC Legal Authorization

SDCs are authorized by Oregon Revised Statute (ORS) 223.297-314. The statute is specific in its definition of system development charges, their application, and their accounting. In general, an SDC is a one-time fee imposed on new development or expansion of existing development, and assessed at the time of development approval or increased usage of the system. SB 939, passed by the 2003 legislature, included many procedural adjustments and clarifications to ORS 223. Overall, the statute is intended to promote equity between new and existing customers by

recovering a proportionate share of the cost of existing and planned/future capital facilities that serve the developing property.

Statute further provides the framework for the development and imposition of SDCs and establishes that SDC receipts may only be used for capital improvements and/or related debt service.

The methodology used to determine the improvement fee portion of the SDC must consider the cost of projected capital improvements needed to increase system capacity or level of performance. In other words, the cost of planned projects that correct existing deficiencies or do not otherwise increase capacity would not be SDC eligible. The improvement fee must also provide a credit for construction of a qualified public improvement.

SDC Methodology

Existing and Future Water Demand

Existing wastewater service demand was derived from the 2007 Plan. Based on this data, it is estimated that as of fiscal 2005, the City served a total of 6,257 equivalent residential units (ERUs). After establishing existing demand conditions, the next step was to forecast future demand based on the criteria established in the Plan. Based on the data contained in the Plan, ERUs are projected to grow at a compounded annualized rate of 1.84% per year over the forecast horizon (i.e., out to fiscal 2030). This was the growth projection approved by the City in consultation with the City's engineers.

Itemized in Table 13 are the calculations that have been used to arrive at the ERUs that will need to be served by the City to the buildout condition (assumed to be 2030):

Table 13 - Future Wastewater Demand Forecast

Silverton estimated 2007 population per PSU - Population Research Center July, 1, 2007
 Forecasted population 2030 per Wastewater System Facility Master Plan, February, 2007

	2007	2030
	9,205	14,000

Compound annualized population growth rate 1.84%

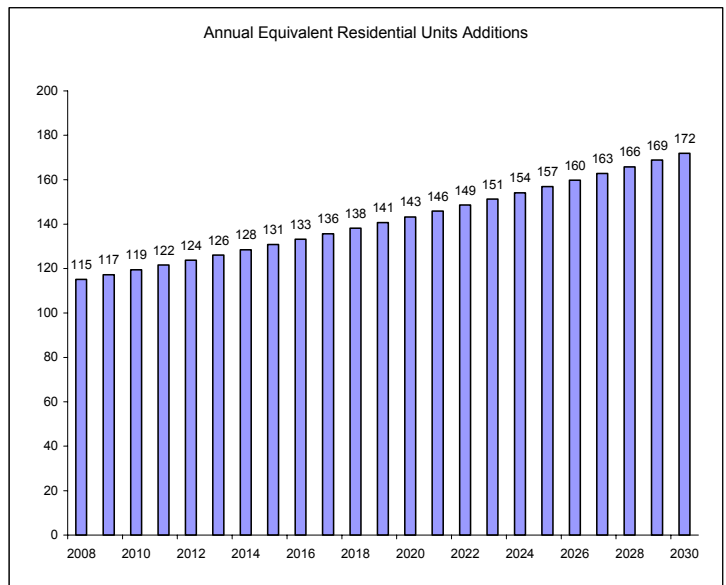
Estimation of base year (i.e., FY08) ERUs per Table 4-1, 4-3 and 4-4: WW Facility System Master Plan:

Year	Average Dry Weather Flow (MGD)			GPD Per Capita*	Density People/RU	MMDWF (MGD)** DEQ Method	Estimated ERUs
	Total	Industrial	Residential				
2001	n/a	n/a	n/a	106.00			
2002	n/a	n/a	n/a	80.00			
2003	0.69	0.10	0.59	74.00	2.70	1.48	
2004	0.76	0.10	0.66	82.00	2.70	0.88	
2005	0.91	0.10	0.81	99.00	2.70	1.49	
				88.20	2.70	1.49	6,257

* 2001 and 2002 values based on annual I&I monitoring report (2004 calendar year activities)

** MMDWF = Maximum Month Dry Weather Flows DEQ Method. Statistical correlation between plant flow and precipitation data.

Equivalent Residential Units (ERUs)			
Fiscal Year	Beginning	Additions	End of Year
2008	6,257	115	6,372
2009	6,372	117	6,489
2010	6,489	119	6,609
2011	6,609	122	6,730
2012	6,730	124	6,854
2013	6,854	126	6,980
2014	6,980	128	7,108
2015	7,108	131	7,239
2016	7,239	133	7,372
2017	7,372	136	7,508
2018	7,508	138	7,646
2019	7,646	141	7,787
2020	7,787	143	7,930
2021	7,930	146	8,076
2022	8,076	149	8,225
2023	8,225	151	8,376
2024	8,376	154	8,530
2025	8,530	157	8,687
2026	8,687	160	8,847
2027	8,847	163	9,010
2028	9,010	166	9,175
2029	9,175	169	9,344
2030	9,344	172	9,516
		3,259	



Reimbursement Fee Methodology

The reimbursement fee represents a buy-in to the cost, or value, of wastewater capacity within the existing system. Generally, if a system were adequately sized for future growth, the reimbursement fee might be the only charge imposed, since the new customer would be buying existing capacity. However, staged system expansion is needed, and an improvement fee is imposed to allocate those growth related costs. Even in those cases, the new customer also relies on capacity within the existing system, and a reimbursement component is warranted.

In order to determine an equitable reimbursement fee to be used in conjunction with an improvement fee, two points should be highlighted:

- First, the cost of the system to the City’s customers may be far less than the total plant-in-service. This is due to the fact that elements of the existing system may have been

contributed, whether from developers, governmental grants, and other sources. Therefore, the net investment by the customer/owners is less.

- ✦ Second, the value of the existing system to a new customer is less than the value to an existing customer, since the new customer must also pay, through an improvement fee, for expansion of some portions of the system.

The method used for determining the reimbursement fee accounts for both of these points.

- ✦ First, the charge is based on the net investment in the system, rather than the gross cost. Therefore, donated facilities, typically including collection lines, local facilities, and grant-funded facilities, would be excluded from the cost basis. Also, the charge should be based on investments clearly made by the current users of the system, and not already supported by new customers. Tax supported activities fail this test since funding sources have historically been from general revenues, or from revenues which emanate, at least in part, from the properties now developing.
- ✦ Second, the cost basis is allocated between used and unused capacity, or capacity available to serve growth. In the absence of a detailed asset by asset analysis, it is appropriate to allocate the cost of existing facilities between used and available capacity proportionally based on the forecasted population growth as converted to meter equivalents over the planning period. This approach reflects the philosophy, consistent with the City's Updated Master Plan, that facilities have been sized to meet the demands of the customer base within the established planning period.

Table 14 contains the data that was used to derive the recommended wastewater reimbursement fee SDC (expressed in \$/ERU).

Table 14 – Wastewater Reimbursement Fee Methodology

City of Silverton, Oregon Wastewater System Development Charge Methodology Study - 2008 Update Reimbursement Fee Calculations Financial Data as of Fiscal Year Ended June 30, 2007 ¹					
	Original Cost	Percent Available to Serve Growth ³	Net Basis for Reimbursement Fee Calculation	Growth ERUs	Unit Reimbursement Fee Cost
Utility plant-in-service:					
Land & Improvements	\$ 2,219,929	51.5%	\$ 1,143,779		
Buildings & Improvements	1,349,488	51.5%	695,299		
Plant & equipment	16,719,011				
less: biosolids and control building (at capacity)	<u>(735,000)</u>				
Net Plant & equipment	15,984,011	51.5%	8,235,474		
Sewer lines	5,558,189	37.0%	2,056,530		
Construction in progress	98,485	51.5%	<u>50,743</u>		
Subtotal	25,210,102	48.3%	12,181,824		
less:					
Grants and contributed capital ²	6,198,188	37.0%	2,293,330		
Principal outstanding on long term debt:					
OEDD 1997 bond 5.14% & 6.00% - principal	1,021,775				
USDA RUS 2000 bond 5.13% - principal	1,868,742				
USDA RUS 2000 loan 4.88% - principal	4,973,917				
USDA RUS 2005 loan 4.38% - principal	<u>340,162</u>				
Subtotal principal outstanding on long term debt	8,204,596	48.3%	<u>3,964,559</u>		
Net utility plant-in-service basis available to serve future customers			\$ 5,923,935		
Estimated ERU additions (fiscal 2008 through fiscal 2030)				3,259	
Calculated reimbursement fee - \$/Equivalent Residential Unit (ERU)					<u>\$ 1,818</u>

¹ Source: City of Silverton audit work papers and Certified Annual Financial Report for the fiscal year ended June 30, 2007; Boldt, Carlisle & Smith LLC Certified Public Accountants

² Source: City of Silverton System Development Charge Study for the Transportation, Water & Sewer Services; August, 2005; FCS Group, Inc., in association with DKS Associates, and LDC Design Group

³ Source: City of Silverton, Department of Public Works analysis; January, 2008

Improvement Fee Methodology

The improvement fee represents a proportionate share of the cost to expand the system to accommodate growth. This charge is based on the capital improvement plan established by the City in the Plan and specifically on costs allocable to growth. Statute requires that the capital improvements used as a basis for the charge be part of an adopted capital improvement schedule, whether as part of a system plan or independently developed, and that the improvements included for SDC eligibility be capacity or level of service expanding. The improvement fee is intended to protect existing customers from the cost burden and impact of expanding a system that is already adequate for their own needs in the absence of growth.

The key step in determining the improvement fee is identifying capital improvement projects that expand the system and the share of those projects attributable to growth. Some projects may be entirely attributable to growth, such as a collection line that exclusively serves a newly developing area. Other projects, however, are of mixed purpose, in that they may expand capacity, but they also improve service or correct a deficiency for existing customers. An

example might be a pump station that both expands collection capacity and corrects a chronic capacity issue for existing users. In this case, a rational allocation basis must be defined.

The improvement portion of the SDC is based on the proportional approach toward capacity and cost allocation in that only those facilities (or portions of facilities) that either expand the sanitary sewer system's capacity to accommodate growth or increase its level of performance have been included in the cost basis of the fee. As part of the Plan , City Staff and their engineering consultants were asked to review the planned capital improvement list in order to assess SDC eligibility. The criteria in Figure 7 were developed to guide the City's evaluation:

Figure 7 - SDC Eligibility Criteria

CITY OF SILVERTON STEPS TOWARD EVALUATING <u>CAPITAL IMPROVEMENT LISTS FOR SDC ELIGIBILITY</u>	
<u>ORS 223</u>	
1.	Capital improvements mean the facilities or assets used for wastewater collection, transmission, treatment, and disposal. This definition DOES NOT ALLOW costs for operation or routine maintenance of the improvements.
2.	The SDC improvement base shall consider the cost of projected capital improvements needed to increase the capacity of the systems to which the fee is related.
3.	An increase in system capacity is established if a capital improvement increases the "level of performance or service" provided by existing facilities or provides new facilities.
<u>Under the City' approach, the following rules will be followed</u>	
1.	REPAIR COSTS ARE NOT TO BE INCLUDED;
2.	REPLACEMENT COSTS WILL NOT BE INCLUDED UNLESS THE REPLACEMENT INCLUDES AN UPSIZING OF SYSTEM CAPACITY AND/OR THE LEVEL OF PERFORMANCE OF THE FACILITY IS INCREASED;
3.	NEW REGULATORY COMPLIANCE FACILITY REQUIREMENTS FALL UNDER THE LEVEL OF PERFORMANCE DEFINITION AND SHOULD BE PROPORTIONATELY INCLUDED;
4.	COSTS WILL NOT BE INCLUDED WHICH BRING DEFICIENT SYSTEM UP TO ESTABLISHED DESIGN LEVELS.

In developing the improvement fee, the project team in consultation with City staff evaluated each of its CIP projects to exclude costs related to correcting existing system deficiencies or upgrading for historical lack of capacity. Only capacity increasing/level of performance costs were used as the basis for the SDC calculation, as reflected in the capital improvement schedule developed by the City. The improvement fee is calculated as a function of the estimated number of projected additional Equivalent dwelling Units (EDUs) to be served by the City's facilities over the planning horizon. The following table lays out the City's CIP, and the allocation of the costs between existing customers and future customers (i.e., growth):

Table 15 – Project Cost Allocation Table

City of Silverton, Oregon Wastewater System Development Charge Methodology Study - 2008 Update Allocation of Recommended Wastewater Collection, Pumping, and Treatment Plant Projects to Projected Funding Sources ¹													
Cost in FY	Construction Year	Project	Future Cost ²	Funding Source - % per HDR Engineering, Inc. ³					Funding Source - \$ Based on Percentages per HDR Engineering, Inc.				
				Existing Customers	Future Customers	Benefited Properties	Contributed Capital	Total	Existing Customers	Future Customers	Benefited Properties	Contributed Capital	Total
230,000	2008	Collection System Improvements											
		IMP-1 (Westfield street capacity)	230,000	20.00%	80.00%	0.00%	0.00%	100.00%	-	184,000	-	-	230,000
201,000	2008	IMP-2 (Oregon Garden lift station capacity)	201,000	0.00%	0.00%	0.00%	100.00%	100.00%	46,000	-	-	201,000	
215,000	2020	IMP-3 (South James street capacity)	324,880	20.00%	80.00%	0.00%	0.00%	100.00%	64,976	259,904	-	201,000	324,880
70,000	2020	IMP-4 (Sherman street capacity)	105,775	20.00%	80.00%	0.00%	0.00%	100.00%	21,155	84,620	-	-	105,775
284,000	2020	IMP-5 (Adams street capacity)	429,143	20.00%	80.00%	0.00%	0.00%	100.00%	85,829	343,315	-	-	429,143
70,000	2010	IMP-6 (Schlador street condition)	74,986	100.00%	0.00%	0.00%	0.00%	100.00%	74,986	-	-	-	74,986
40,000	2010	IMP-7 (Lone Oaks street condition)	42,849	100.00%	0.00%	0.00%	0.00%	100.00%	42,849	-	-	-	42,849
85,000	2010	IMP-8 (Third street condition)	91,054	100.00%	0.00%	0.00%	0.00%	100.00%	91,054	-	-	-	91,054
46,000	2010	IMP-9 (Meat packers/high school condition)	49,276	100.00%	0.00%	0.00%	0.00%	100.00%	49,276	-	-	-	49,276
4,375	2009	Condition assessment program - forecast year 1	4,528	100.00%	0.00%	0.00%	0.00%	100.00%	4,528	-	-	-	4,528
300,000	2010	Rehab projects as a result of year 1 condition assessment program	321,368	100.00%	0.00%	0.00%	0.00%	100.00%	321,368	-	-	-	321,368
4,375	2010	Condition assessment program - forecast year 2	4,687	100.00%	0.00%	0.00%	0.00%	100.00%	4,687	-	-	-	4,687
300,000	2011	Rehab projects as a result of year 2 condition assessment program	332,615	100.00%	0.00%	0.00%	0.00%	100.00%	332,615	-	-	-	332,615
4,375	2011	Condition assessment program - forecast year 3	4,851	100.00%	0.00%	0.00%	0.00%	100.00%	4,851	-	-	-	4,851
300,000	2012	Rehab projects as a result of year 3 condition assessment program	344,257	100.00%	0.00%	0.00%	0.00%	100.00%	344,257	-	-	-	344,257
4,375	2012	Condition assessment program - forecast year 4	5,020	100.00%	0.00%	0.00%	0.00%	100.00%	5,020	-	-	-	5,020
300,000	2013	Rehab projects as a result of year 4 condition assessment program	356,306	100.00%	0.00%	0.00%	0.00%	100.00%	356,306	-	-	-	356,306
4,375	2013	Condition assessment program - forecast year 5	5,196	100.00%	0.00%	0.00%	0.00%	100.00%	5,196	-	-	-	5,196
300,000	2014	Rehab projects as a result of year 5 condition assessment program	368,777	100.00%	0.00%	0.00%	0.00%	100.00%	368,777	-	-	-	368,777
2,762,875		<i>Subtotal Collection System Improvements</i>	3,296,567	67.46%	26.45%	0.00%	6.10%	100.00%	2,223,729	871,838	-	201,000	3,296,567
		<i>Additional Pump Stations</i>											
928,000	2008	PMP-1 James street pump station	928,000	20.00%	80.00%	0.00%	0.00%	100.00%	185,600	742,400	-	-	928,000
162,000	2009	PMP-2 Pine street pump station	167,670	20.00%	80.00%	0.00%	0.00%	100.00%	33,534	134,136	-	-	167,670
1,038,000	2020	PMP-3 Setness lane pump station	1,568,489	20.00%	80.00%	0.00%	0.00%	100.00%	313,698	1,254,791	-	-	1,568,489
2,128,000		<i>Subtotal Additional Pump Stations</i>	2,664,159	20.00%	80.00%	0.00%	0.00%	100.00%	532,832	2,131,327	-	-	2,664,159
		<i>Wastewater Treatment Plant Improvements</i>											
35,000	2008	Thermodynamic model update	35,000	80.00%	20.00%	0.00%	0.00%	100.00%	28,000	7,000	-	-	35,000
25,000	2008	Wetland optimization study	25,000	80.00%	20.00%	0.00%	0.00%	100.00%	20,000	5,000	-	-	25,000
30,000	2010	Laboratory/admin facility schematic design	32,137	100.00%	0.00%	0.00%	0.00%	100.00%	32,137	-	-	-	32,137
		<i>Project 1 - Phase 1 biosolids expansion</i>											
293,000	2009	Sitework	303,255	35.00%	65.00%	0.00%	0.00%	100.00%	106,139	197,116	-	-	303,255
84,000	2009	Concrete	86,940	35.00%	65.00%	0.00%	0.00%	100.00%	30,429	56,511	-	-	86,940
-	2009	Masonry	-	35.00%	65.00%	0.00%	0.00%	100.00%	-	-	-	-	-
8,000	2009	Metals	8,280	35.00%	65.00%	0.00%	0.00%	100.00%	2,898	5,382	-	-	8,280
10,000	2009	Wood & plastics	10,350	35.00%	65.00%	0.00%	0.00%	100.00%	3,623	6,728	-	-	10,350
-	2009	Thermal & moisture protection	-	35.00%	65.00%	0.00%	0.00%	100.00%	-	-	-	-	-
4,600	2009	Doors & windows	4,761	35.00%	65.00%	0.00%	0.00%	100.00%	1,666	3,095	-	-	4,761
10,000	2009	Finishes	10,350	35.00%	65.00%	0.00%	0.00%	100.00%	3,623	6,728	-	-	10,350
1,000	2009	Specialties	1,035	35.00%	65.00%	0.00%	0.00%	100.00%	362	673	-	-	1,035
1,505,000	2009	Equipment	1,557,675	35.00%	65.00%	0.00%	0.00%	100.00%	545,186	1,012,489	-	-	1,557,675
-	2009	Furnishings	-	35.00%	65.00%	0.00%	0.00%	100.00%	-	-	-	-	-
405,000	2009	Special construction	419,175	35.00%	65.00%	0.00%	0.00%	100.00%	146,711	272,464	-	-	419,175
151,900	2009	Conveying systems	157,217	35.00%	65.00%	0.00%	0.00%	100.00%	55,026	102,191	-	-	157,217
75,000	2009	Mechanical	77,625	35.00%	65.00%	0.00%	0.00%	100.00%	27,169	50,456	-	-	77,625
214,000	2009	Electrical	221,490	35.00%	65.00%	0.00%	0.00%	100.00%	77,522	143,969	-	-	221,490
625,000	2009	Dewatering/lime stabilization building	646,875	35.00%	65.00%	0.00%	0.00%	100.00%	226,406	420,469	-	-	646,875
677,000	2009	Estimator's contingency	700,695	35.00%	65.00%	0.00%	0.00%	100.00%	245,243	455,452	-	-	700,695
284,445	2009	Escalation to mid-point of construction	294,401	35.00%	65.00%	0.00%	0.00%	100.00%	103,040	191,360	-	-	294,401
813,000	2009	Contractor's overhead and profit, Mob and bonds	841,455	35.00%	65.00%	0.00%	0.00%	100.00%	294,509	546,946	-	-	841,455
1,548,284	2009	Engineering, admin., and legal	1,602,474	35.00%	65.00%	0.00%	0.00%	100.00%	560,866	1,041,608	-	-	1,602,474
		<i>Project 2 - Phase 2 biosolids handling & equipment upgrades/lab & admin addition</i>											
160,000	2010	Design	171,396	100.00%	0.00%	0.00%	0.00%	100.00%	171,396	-	-	-	171,396
935,864	2010	Construction	1,002,521	100.00%	0.00%	0.00%	0.00%	100.00%	1,002,521	-	-	-	1,002,521
325,000	2015	Project 3 - Aeration system upgrade	413,491	20.00%	80.00%	0.00%	0.00%	100.00%	82,698	330,793	-	-	413,491
163,000	2015	Project 4 Secondary treatment stress testing/retating	207,382	20.00%	80.00%	0.00%	0.00%	100.00%	41,476	165,905	-	-	207,382
400,000	2014	Project 5 - Effluent filtration upgrade	491,702	80.00%	20.00%	0.00%	0.00%	100.00%	393,362	98,340	-	-	491,702
8,783,093		<i>Subtotal Wastewater Treatment Plant Improvements</i>	9,322,680	45.07%	54.93%	0.00%	0.00%	100.00%	4,202,008	5,120,672	-	-	9,322,680
		<i>Plans and Studies</i>											
		Wastewater System Facility Master Plan - 2007	150,000	46.85%	53.15%	0.00%	0.00%	100.00%	70,268	79,732	-	-	150,000
		<i>Subtotal Plans and Studies</i>	150,000	46.85%	53.15%	0.00%	0.00%	100.00%	70,268	79,732	-	-	150,000
\$ 13,673,968		Wastewater System Facility Master Plan Total	\$ 15,433,407	45.54%	53.15%	0.00%	1.30%	100.00%	\$ 7,028,837	\$ 8,203,570	\$ -	\$ 201,000	\$ 15,433,407

¹ Source: City of Silverton, Final Wastewater System Facility Master Plan; February, 2007; HDR Engineering, Inc., Table 1-9: Recommended Capital Improvements for Silverton Collection System and Treatment Plant Improvements

² Inflation Rate 3.50%

³ Per HDR Engineering, Inc. Memorandum from Mark M. Smith, P.E. to Steve Donovan Re: City of Silverton Wastewater Capital Project. SDC Eligible Costs; Dated December 27, 2007

Once the future costs to serve growth have been segregated (i.e., the numerator), they can be divided into the total number of new ERUs that will use the capacity derived from those investments (i.e., the denominator). The following table shows the calculations that were used to arrive at the unit cost of service per future ERU:

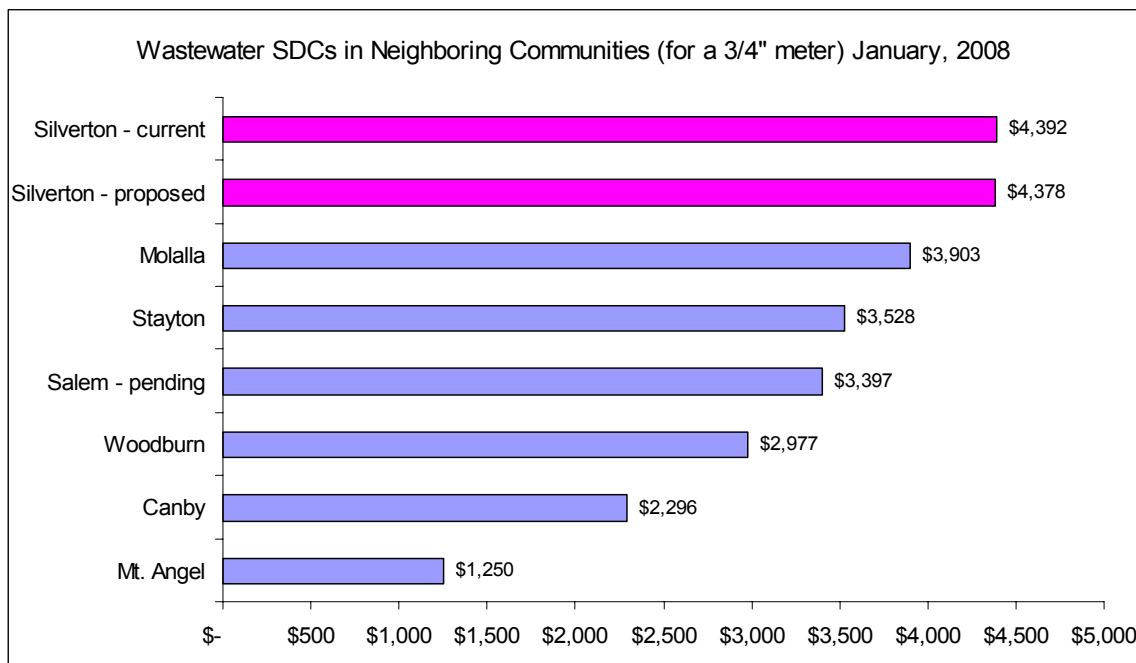
Table 16 – SDC Improvement Fee Calculations

City of Silverton, Oregon Wastewater System Development Charge Methodology Study - 2008 Update Improvement Fee Calculations					
	Existing Customers	Future Customers	Benefited Properties	Contributed Capital	Total
Future Projects Cost Category:					
Collection System Improvements	2,223,729	871,838	-	201,000	3,296,567
Additional Pump Stations	532,832	2,131,327	-	-	2,664,159
Wastewater Treatment Plant Improvements	4,202,008	5,120,672	-	-	9,322,680
Plans and Studies	70,268	79,732	-	-	150,000
Total - \$	\$ 7,028,837	\$ 8,203,570	\$ -	\$ 201,000	\$ 15,433,407
Total - %	45.54%	53.15%	0.00%	1.30%	100.00%
Future project costs planned to serve growth		8,203,570			
Estimated ERU additions (fiscal 2008 through fiscal 2030)		3,259			
Calculated improvement fee - \$/Equivalent Residential Unit (ERU)		<u>\$ 2,517</u>			

Neighboring Communities' Sanitary Sewer SDCs

The following Figure compares the current and proposed sanitary sewer SDC for a single family customer in Silverton to the same charge in similar communities in western Oregon.

Figure 8 – Single Family Residential Sanitary Sewer SDCs in Neighboring Communities



Wastewater SDC Conclusions and Recommendations

- ✦ The City currently charges an SDC of \$4,392 for a new single family residence to connect to the wastewater system. The results of this study indicate that the City would be justified in reducing this charge by \$14, resulting in a new single family residential sewer SDC of \$4,378.
- ✦ The Consultant team has reviewed the City's current methodology for calculating its wastewater SDC and found that it complies with statutory construction requirements for the reimbursement and improvement fees. There is no need to modify this current methodology.
- ✦ Some of the most significant revisions to ORS 223 since its inception in 1991 have dealt with record keeping and notification requirements. Under ORS 223.311 the City must prepare by, January 1 of each year, an accounting of SDC receipts and expenditures. This accounting should be reported to the Council on an annual basis and made available for public inspection.



Technical Appendix A – Water System Revenue Requirements Model Output

Water System Planning and Macroeconomic Assumptions

City of Silverton Summary of Planning and Macroeconomic Assumptions						
	2008	2009	2010	2011	2012	2013
Construction Inflation Rate		3.50%	3.50%	3.50%	3.50%	3.50%
Revenue line item inflation		3.00%	3.00%	3.00%	3.00%	3.00%
Interest Earnings Rate		4.50%	4.50%	4.50%	4.50%	4.50%
Line Item Operations and Maintenance Inflation Factors:						
Personal Services:						
Full time salaries		3.00%	3.00%	3.00%	3.00%	3.00%
Part time salaries		3.00%	3.00%	3.00%	3.00%	3.00%
Worker's compensation insurance		6.00%	6.00%	6.00%	6.00%	6.00%
Social security/medicare		3.00%	3.00%	3.00%	3.00%	3.00%
Health insurance		12.00%	12.00%	12.00%	12.00%	12.00%
Life/disability insurance		3.00%	3.00%	3.00%	3.00%	3.00%
PERS retirement		3.00%	5.00%	5.00%	5.00%	5.00%
Overtime salaries		3.00%	3.00%	3.00%	3.00%	3.00%
Total personal services						
Materials and Services:						
Office supplies		3.00%	3.00%	3.00%	3.00%	3.00%
Publications		3.00%	3.00%	3.00%	3.00%	3.00%
Advertising expense		3.00%	3.00%	3.00%	3.00%	3.00%
Telephone expense		3.00%	3.00%	3.00%	3.00%	3.00%
Postage & freight		3.00%	3.00%	3.00%	3.00%	3.00%
Gas/electric expense		3.00%	3.00%	3.00%	3.00%	3.00%
Permit fees		3.00%	3.00%	3.00%	3.00%	3.00%
Travel, training & meetings		3.00%	3.00%	3.00%	3.00%	3.00%
Dues & memberships		3.00%	3.00%	3.00%	3.00%	3.00%
Equipment maintenance		3.00%	3.00%	3.00%	3.00%	3.00%
Vehicle expense		3.00%	3.00%	3.00%	3.00%	3.00%
Recording fees		3.00%	3.00%	3.00%	3.00%	3.00%
Traffic control supplies		3.00%	3.00%	3.00%	3.00%	3.00%
Safety equipment/protective clothing		3.00%	3.00%	3.00%	3.00%	3.00%
Building/grounds maintenance		3.00%	3.00%	3.00%	3.00%	3.00%
Small tolls		3.00%	3.00%	3.00%	3.00%	3.00%
Equipment rental		3.00%	3.00%	3.00%	3.00%	3.00%
Water system maintenance		3.00%	3.00%	3.00%	3.00%	3.00%
Water reservoir maintenance		3.00%	3.00%	3.00%	3.00%	3.00%
Water meter program		3.00%	3.00%	3.00%	3.00%	3.00%
Legal services		3.00%	3.00%	3.00%	3.00%	3.00%
Contracted services		3.00%	3.00%	3.00%	3.00%	3.00%
Lab/chemical supplies		3.00%	3.00%	3.00%	3.00%	3.00%
Mapping expense		3.00%	3.00%	3.00%	3.00%	3.00%
Abiqua dam maintenance		3.00%	3.00%	3.00%	3.00%	3.00%
Silver creek dam maintenance		3.00%	3.00%	3.00%	3.00%	3.00%
Water tests		3.00%	3.00%	3.00%	3.00%	3.00%
Miscellaneous expense		3.00%	3.00%	3.00%	3.00%	3.00%
System subsidy		3.00%	3.00%	3.00%	3.00%	3.00%
Minor equipment		3.00%	3.00%	3.00%	3.00%	3.00%
Software		3.00%	3.00%	3.00%	3.00%	3.00%
Total materials and services						
Capital Outlays:						
Capital replacement		3.00%	3.00%	3.00%	3.00%	3.00%
Capital - NEW		3.00%	3.00%	3.00%	3.00%	3.00%
Total capital outlays						
Contingencies and Reserves:						
Contingency		3.00%	3.00%	3.00%	3.00%	3.00%
Reserve for debt service		3.00%	3.00%	3.00%	3.00%	3.00%
Total contingency and reserves						
Transfers OUT:						
Transfer to General Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Debt Service Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Reserve Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Building Reserve Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Warn System Project Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Water Line Project Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Fleet Replacement Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Major Equipment Replacement Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Extended Leave Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Total transfers OUT						
Estimated Equivalent Dwelling Units (EDUs)	6,257	6,372	6,489	6,609	6,730	6,854
Unit System Development Charge per EDU:						
Improvement	2,284	2,284	2,284	2,284	2,284	2,284
Reimbursement	1,703	1,703	1,703	1,703	1,703	1,703
Total	3,987	3,987	3,987	3,987	3,987	3,987
Total SDC revenue forecast:						
Improvement		262,919	267,757	272,683	277,700	282,809
Reimbursement		196,038	199,645	203,318	207,059	210,868
Total		458,958	467,402	476,001	484,759	493,677
Reserve Policy:						
Working Capital (contingency in the operating fund) - 45 days of water system operating expenses.						
Water Reserve Fund - 1% of water system fixed assets.						

	2007	2030
Silverton estimated 2007 population per PSU - Population Research Center July, 1, 2007	9,205	
Forecasted population 2030 per Wastewater System Facility Master Plan, February, 2007		14,000
Compound annualized population growth rate	1.84%	

Water Improvement Fee SDC Fund Forecast

City of Silverton Statement of Cash Flow and Changes in Fund Balance - Water Improvement SDC Fund									
Line Item Description	Actual			Budget	Forecast				
	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sources of Funds									
Beginning Fund Balance:									
Calculated beginning fund balance	141,769	202,490	728,476	1,008,370	158,648	1,170,008	1,371,595	1,585,401	1,346,973
Contingency	-	-	-	-	821,439	-	-	-	-
Auditor's adjustments	-	-	-	-	-	-	-	-	-
Net beginning fund balance	141,769	202,490	728,476	1,008,370	980,087	1,170,008	1,371,595	1,585,401	1,346,973
Revenues:									
Miscellaneous revenue:									
Interest earned	3,057	23,243	44,104	25,000	50,383	59,064	68,271	58,004	47,412
Improvement SDCs	284,337	540,637	246,707	250,000	267,919	267,757	272,683	277,700	282,809
Total miscellaneous revenue	287,394	563,880	290,811	275,000	318,302	326,821	340,954	335,704	330,221
Total Sources of Funds	\$ 429,163	\$ 766,370	\$ 1,019,287	\$ 1,283,370	\$ 1,293,389	\$ 1,496,828	\$ 1,712,549	\$ 1,921,104	\$ 1,677,194
Uses of Funds									
Materials and Services:									
Contracted services	-	-	-	80,000	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total materials and services	-	-	-	80,000	-	-	-	-	-
Capital Outlays:									
System capacity improvements	-	-	-	-	-	-	-	-	-
Developer SDC credits	-	-	7,564	150,000	50,000	51,750	53,561	55,436	57,376
Silver Creek water supply project	-	-	-	-	-	-	-	-	-
Total capital outlays	-	-	7,564	150,000	50,000	51,750	53,561	55,436	57,376
Contingencies and Reserves:									
Contingency	-	-	-	821,439	-	-	-	-	-
Total contingency and reserves	-	-	-	821,439	-	-	-	-	-
Transfers OUT:									
Transfer to General Fund	11,607	2,894	3,353	3,283	3,381	3,483	3,587	3,695	3,806
Transfer to Water Operating Fund	-	-	-	-	70,000	70,000	70,000	515,000	515,000
Transfer to Water Reimbursement SDC Fund	-	35,000	-	70,000	-	-	-	-	-
Transfer to Weiby Water Replacement Pjt Fund	27,066	-	-	-	-	-	-	-	-
Transfer to Water Line Project Fund	188,000	-	-	-	-	-	-	-	-
Fund balance in support of master plan projects	-	-	-	-	-	-	-	-	-
Total transfers OUT	226,673	37,894	3,353	73,283	73,381	73,483	73,587	518,695	518,806
Total Expenditures	226,673	37,894	10,917	1,124,722	123,381	125,233	127,149	574,131	576,182
Unappropriated Ending Fund Balance	202,490	728,476	1,008,370	158,648	1,170,008	1,371,595	1,585,401	1,346,973	1,101,012
Total Uses of Funds	\$ 429,163	\$ 766,370	\$ 1,019,287	\$ 1,283,370	\$ 1,293,389	\$ 1,496,828	\$ 1,712,549	\$ 1,921,104	\$ 1,677,194

Water Reimbursement Fee SDC Fund Forecast

City of Silverton Statement of Cash Flow and Changes in Fund Balance - Sanitary Sewer Reimbursement SDC Fund									
Line Item Description	Actual			Budget	Forecast				
	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sources of Funds									
Beginning Fund Balance:									
Calculated beginning fund balance	147,376	183,724	546,727	501,706	13,132	69,054	68,521	67,856	67,048
Contingency	-	-	-	-	54,291	-	-	-	-
Auditor's adjustments	-	-	-	-	-	-	-	-	-
Net beginning fund balance	147,376	183,724	546,727	501,706	67,423	69,054	68,521	67,856	67,048
Revenues:									
Miscellaneous revenue:									
Interest earned	1,950	17,522	32,115	25,000	2,974	2,951	2,922	2,887	2,846
Reimbursement SDCs	167,861	313,375	165,985	170,000	196,038	199,645	203,318	207,059	210,868
Total miscellaneous revenue	169,811	330,897	198,101	195,000	199,012	202,596	206,240	209,946	213,714
Transfers IN:									
Transfer from Water Operating Fund	-	-	-	-	-	-	-	-	-
Transfer from Street Improvement SDC Fund	-	-	-	-	-	-	-	-	-
Transfer from Sewer Improvement SDC Fund	-	35,000	-	70,000	-	-	-	-	-
Total transfers IN	-	35,000	-	70,000	-	-	-	-	-
Total Sources of Funds	\$ 317,187	\$ 549,621	\$ 744,828	\$ 766,706	\$ 266,435	\$ 271,650	\$ 274,762	\$ 277,802	\$ 280,763
Uses of Funds									
Capital Outlays:									
Clarifier equipment	-	-	-	-	-	-	-	-	-
Filter equipment	-	-	55,195	16,700	-	-	-	-	-
Chadwick & Jerome line replacement	-	-	-	113,000	-	-	-	-	-
Chester - Washington line replacement	-	-	167,873	203,000	-	-	-	-	-
Apple, Jerome & Chester line replacement	-	-	-	380,000	-	-	-	-	-
Total capital outlays	-	-	239,769	696,000	-	-	-	-	-
Contingencies and Reserves:									
Contingency	-	-	-	54,291	-	-	-	-	-
Total contingency and reserves	-	-	-	54,291	-	-	-	-	-
Transfers OUT:									
Transfer to General Fund	11,607	2,894	3,353	3,283	3,381	3,483	3,587	3,695	3,806
Transfer to Water Operating Fund	121,856	-	-	-	194,000	199,645	203,318	207,059	210,868
Fund balance in support of master plan projects	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-
Total transfers OUT	133,463	2,894	3,353	3,283	197,381	203,128	206,906	210,754	214,674
Total Expenditures	133,463	2,894	243,122	753,574	197,381	203,128	206,906	210,754	214,674
Unappropriated Ending Fund Balance	183,724	546,727	501,706	13,132	69,054	68,521	67,856	67,048	66,088
Total Uses of Funds	\$ 317,187	\$ 549,621	\$ 744,828	\$ 766,706	\$ 266,435	\$ 271,650	\$ 274,762	\$ 277,802	\$ 280,763

Water Operating Fund Forecast

City of Silverton Statement of Cash Flow and Changes in Fund Balance - Water Operating Fund									
Line Item Description	Actual			Budget	Forecast				
	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sources of Funds									
Beginning Fund Balance:									
Calculated beginning fund balance	255,056	483,670	187,932	466,139	165,104	438,747	438,747	438,747	438,747
Prior year budgeted contingency	-	-	-	-	151,787	-	-	-	-
Prior year reserve for debt service	9	-	-	-	121,856	-	-	-	-
Auditor's adjustments	-	(114,830)	-	-	-	-	-	-	-
Net beginning fund balance	255,056	368,840	187,932	466,139	438,747	438,747	438,747	438,747	438,747
Revenues:									
Fees and permits:									
Water service charges	1,008,153	1,124,071	1,258,515	1,230,000	1,275,057	1,316,558	1,362,280	1,419,509	1,470,095
Inspection fees	57,289	-	44,529	30,000	33,939	34,957	36,006	37,086	38,199
Recording fees	9	-	6,372	-	2,127	2,191	2,255	2,324	2,394
Administration fees	9,160	12,000	11,825	12,000	10,995	11,325	11,665	12,015	12,375
Total fees and permits	1,074,611	1,136,071	1,321,240	1,272,000	1,322,118	1,365,031	1,412,207	1,470,934	1,523,062
Miscellaneous revenue:									
Interest earned	7,340	10,771	16,218	10,000	18,893	18,893	18,893	18,893	18,893
Delinquent/late charges	43,785	56,641	60,562	55,000	53,663	55,273	56,931	58,639	60,398
New water meter connections	-	65,440	43,668	65,000	36,369	37,038	37,720	38,414	39,120
Miscellaneous revenue	13,049	4,477	1,688	1,000	6,405	6,597	6,795	6,999	7,209
Insurance proceeds	7,804	-	-	-	-	-	-	-	-
Total miscellaneous revenue	71,978	137,329	122,136	131,000	115,330	117,801	120,339	122,945	125,620
Transfers IN:									
Transfer from Street Fund	4,775	3,034	1,550	10,310	3,120	3,213	3,310	3,409	3,511
Transfer from Sewer Fund	9,750	3,301	5,550	46,050	6,200	6,200	6,200	6,200	6,200
Transfer from Water Reimbursement SDC Fund	121,856	-	-	-	194,000	199,645	203,318	207,059	210,868
Transfer from Water Improvement SDC Fund	-	-	-	-	70,000	70,000	70,000	70,000	70,000
Total transfers IN	136,381	6,335	7,100	56,360	273,320	279,059	282,828	287,668	290,579
Total Sources of Funds	\$ 1,538,026	\$ 1,648,575	\$ 1,638,408	\$ 1,925,499	\$ 2,149,516	\$ 2,200,639	\$ 2,254,121	\$ 2,264,294	\$ 2,283,010
Uses of Funds									
Personal Services:									
Full time salaries	255,508	258,408	299,898	316,951	326,460	336,253	346,341	356,731	367,433
Part time salaries	6,768	3,699	1,833	8,375	8,626	8,885	9,152	9,426	9,709
Worker's compensation insurance	6,647	7,347	11,584	13,628	14,446	15,312	16,231	17,205	18,237
Social security/medicare	19,932	20,404	23,761	25,853	26,629	27,427	28,250	29,098	29,971
Health insurance	37,831	43,328	51,270	63,368	70,972	79,489	89,027	99,711	111,676
Life/disability insurance	931	956	1,117	134	138	142	146	151	155
PERS retirement	22,269	34,065	38,515	32,388	33,360	35,028	36,779	38,618	40,549
Overtime salaries	6,427	10,595	11,517	12,620	12,999	13,389	13,790	14,204	14,630
Total personal services	356,313	378,802	439,515	473,317	493,628	515,925	539,717	565,144	592,360
Materials and Services:									
Office supplies	1,494	3,360	2,762	2,700	2,781	2,864	2,950	3,039	3,130
Publications	662	702	513	400	412	424	437	450	464
Advertising expense	580	547	867	600	618	637	656	675	696
Telephone expense	9,752	10,124	10,313	10,000	10,300	10,609	10,927	11,255	11,593
Postage & freight	3,381	6,120	6,099	7,500	7,725	7,957	8,195	8,441	8,695
Gas/electric expense	36,795	53,952	51,133	60,000	61,800	63,654	65,564	67,531	69,556
Permit fees	75	484	671	600	618	637	656	675	696
Travel, training & meetings	1,768	4,768	3,142	3,200	3,296	3,395	3,497	3,602	3,710
Dues & memberships	1,208	2,034	3,388	1,800	1,648	1,697	1,748	1,801	1,855
Equipment maintenance	25,964	13,761	3,809	6,000	6,180	6,365	6,556	6,753	6,956
Vehicle expense	8,513	10,789	9,899	10,000	10,300	10,609	10,927	11,255	11,593
Recording fees	952	81	-	100	103	106	109	113	116
Traffic control supplies	-	95	1,071	500	515	530	546	563	580
Safety equipment/protective clothing	1,191	2,105	1,903	1,800	1,854	1,910	1,967	2,026	2,087
Building/grounds maintenance	9,574	10,998	1,473	3,000	3,090	3,183	3,278	3,377	3,478
Small tolls	581	658	1,443	600	618	637	656	675	696
Equipment rental	1,058	1,168	990	800	824	849	874	900	927
Water system maintenance	4,569	5,776	6,520	12,000	12,360	12,731	13,113	13,506	13,911
Water reservoir maintenance	440	205,219	10,495	1,000	1,030	1,061	1,093	1,126	1,159
Water meter program	8,576	3,542	14,258	55,000	80,000	82,400	84,872	87,418	90,041
Legal services	613	-	-	-	-	-	-	-	-
Contracted services	1,235	4,799	7,585	71,000	73,130	75,324	77,584	79,911	82,308
Lab/chemical supplies	18,977	23,683	22,160	28,000	28,840	29,705	30,596	31,514	32,460
Mapping expense	-	133	-	-	-	-	-	-	-
Abiqua dam maintenance	84	333	1,586	1,000	1,030	1,061	1,093	1,126	1,159
Silver creek dam maintenance	911	316	299	10,000	10,300	10,609	10,927	11,255	11,593
Water tests	3,074	2,060	5,073	5,000	5,665	5,835	6,010	6,190	6,376
Miscellaneous expense	-	169	148	200	206	212	219	225	232
System subsidy	43,344	51,382	28,957	60,000	61,800	63,654	65,564	67,531	69,556
Minor equipment	1,302	4,104	3,543	7,470	7,694	7,925	8,163	8,408	8,660
Software	5,512	3,901	2,195	20,350	20,961	21,589	22,237	22,904	23,591
Total materials and services	192,185	427,161	202,296	380,920	415,698	428,169	441,014	454,244	467,871
Capital Outlays:									
Capital replacement	2,522	10,869	25,803	10,900	11,227	11,564	11,911	12,268	12,636
Capital - NEW	6,880	22,207	6,299	56,500	58,195	59,941	61,739	63,591	65,499
Total capital outlays	9,402	33,076	32,102	67,400	69,422	71,505	73,650	75,859	78,135
Contingencies and Reserves:									
Contingency	-	-	-	151,787	-	-	-	-	-
Reserve for debt service	-	-	-	121,856	-	-	-	-	-
Total contingency and reserves	-	-	-	273,643	-	-	-	-	-
Transfers OUT:									
Transfer to General Fund	246,519	286,353	318,173	371,666	382,816	394,300	406,129	418,313	430,863
Transfer to Debt Service Fund	14,055	14,835	14,991	16,160	16,645	17,144	17,658	18,188	18,734
Transfer to Reserve Fund	50,726	25,000	-	-	-	-	-	-	-
Transfer to Building Reserve Fund	-	5,000	10,000	20,000	40,000	41,200	42,436	43,709	45,020
Transfer to Warm System Project Fund	-	75,000	-	-	-	-	-	-	-
Transfer to Water Line Project Fund	50,000	60,000	-	-	-	-	-	-	-
Transfer to Fleet Replacement Fund	-	8,471	8,897	10,369	10,680	11,000	11,330	11,670	12,021
Transfer to Major Equipment Replacement Fund	-	19,750	23,150	23,232	23,929	24,647	25,386	26,148	26,932
Transfer to Extended Leave Fund	4,795	5,466	1,420	1,632	1,681	1,731	1,783	1,837	1,892
Total transfers OUT	366,095	499,875	376,631	443,059	475,751	490,023	504,724	519,866	535,462
Debt Service:									
USDA RUS 1997 bond - principal	26,584	27,879	29,239	30,864	32,159	33,727	35,371	37,095	38,908
USDA RUS 1997 bond - interest	103,777	93,850	92,485	91,192	89,697	88,129	86,485	84,761	82,948
Debt Service on New Serial Revenue Bonds	-	-	-	-	134,413	134,413	134,413	588,578	588,578
Total debt service	130,361	121,729	121,724	122,056	256,269	256,269	256,269	710,434	710,434
Total Expenditures	1,054,356	1,460,643	1,172,268	1,760,395	1,710,768	1,761,891	1,815,374	2,325,547	2,384,263
Unappropriated Ending Fund Balance	483,670	187,932	466,139	165,104	438,747	438,747	438,747	438,747	438,747
Total Uses of Funds	\$ 1,538,026	\$ 1,648,575	\$ 1,638,408	\$ 1,925,499	\$ 2,149,516	\$ 2,200,639	\$ 2,254,121	\$ 2,764,294	\$ 2,823,010

Water System Revenue Requirements Forecast

City of Silverton Projection of Water System Revenue Requirements Sensitivity Case - Funding of Future Capital Improvements									
	Actual			Budget 2008	Forecast				
	2005	2006	2007		2009	2010	2011	2012	2013
Projection of Cash Flow:									
Fees and permits:									
Water service charges	1,008,153	1,124,071	1,258,515	1,230,000	1,230,000	1,275,057	1,316,558	1,362,280	1,419,509
Inspection fees	57,289	-	44,529	30,000	33,939	34,957	36,006	37,086	38,199
Recording fees	9	-	6,372	-	2,127	2,191	2,256	2,324	2,394
Administration fees	9,160	12,000	11,825	12,000	10,995	11,325	11,665	12,015	12,375
Miscellaneous revenue:									
Interest earned	7,340	10,771	16,218	10,000	18,893	18,893	18,893	18,893	18,893
Delinquent/late charges	43,785	56,641	60,562	55,000	53,663	55,273	56,931	58,639	60,398
New water meter connections	-	65,440	43,668	65,000	36,369	37,038	37,720	38,414	39,120
Miscellaneous revenue	13,049	4,477	1,688	1,000	6,405	6,597	6,795	6,999	7,209
Insurance proceeds	7,804	-	-	-	-	-	-	-	-
Transfers IN:									
Transfer from Street Fund	4,775	3,034	1,550	10,310	3,120	3,213	3,310	3,409	3,511
Transfer from Sewer Fund	9,750	3,301	5,550	46,050	6,200	6,200	6,200	6,200	6,200
Transfer from Water Reimbursement SDC Fund	121,856	-	-	-	194,000	199,645	203,318	207,059	210,868
Transfer from Water Improvement SDC Fund	-	-	-	-	70,000	70,000	70,000	515,000	515,000
Subtotal Gross Revenues	1,282,970	1,279,735	1,450,476	1,459,360	1,665,711	1,720,390	1,769,652	2,268,317	2,333,677
less: Operations & Maintenance Expense	557,900	839,039	673,913	1,195,280	978,748	1,015,599	1,054,380	1,095,247	1,138,367
less: Transfers OUT	366,095	499,875	376,631	443,059	475,751	490,023	504,724	519,866	535,462
less: Debt Service - existing	130,361	121,729	121,724	122,056	121,856	121,856	121,856	121,856	121,856
less: Debt Service - new	-	-	-	-	134,413	134,413	134,413	588,578	588,578
less: Use of Water Operating Fund balance	-	(180,908)	-	(301,035)	-	-	-	-	-
Net Cash	228,614	-	278,207	-	(45,057)	(41,501)	(45,721)	(57,230)	(50,585)
Net Deficiency/(Surplus)	(228,614)	-	(278,207)	-	45,057	41,501	45,721	57,230	50,585
Test of Coverage Requirement:									
Total Operations & Maintenance Expense	557,900	839,039	673,913	1,195,280	978,748	1,015,599	1,054,380	1,095,247	1,138,367
Transfers Out	366,095	499,875	376,631	443,059	475,751	490,023	504,724	519,866	535,462
Debt Service on USDA Rural Improvement Bond	130,361	121,729	121,724	122,056	121,856	121,856	121,856	121,856	121,856
Debt Service on New Serial Revenue Bond Debt	-	-	-	-	134,413	134,413	134,413	588,578	588,578
Additional Coverage Required:	-	-	-	-	-	-	-	-	-
Total Revenue Required with Coverage	1,054,356	1,460,643	1,172,268	1,760,395	1,710,768	1,761,891	1,815,374	2,325,547	2,384,263
Gross Revenues Allowable for Coverage Test:									
Fees and permits:	1,074,611	1,136,071	1,321,240	1,272,000	1,277,061	1,323,530	1,366,485	1,413,704	1,472,477
Miscellaneous revenue:	71,978	137,329	122,136	131,000	115,330	117,801	120,339	122,945	125,620
Transfers IN:	14,525	6,335	7,100	56,360	273,320	279,059	282,828	731,668	735,580
System Development Charges:									
Reimbursement	167,861	313,375	165,985	170,000	196,038	199,645	203,318	207,059	210,868
Improvement	284,337	540,637	246,707	250,000	262,919	267,757	272,683	277,700	282,809
Gross Revenues Allowable for Coverage Test	1,613,312	2,133,747	1,863,168	1,879,360	2,124,669	2,187,792	2,245,654	2,753,076	2,827,355
Coverage Recognized	5.29	6.53	6.68	1.97	2.62	2.66	2.68	1.60	1.62
Coverage Required	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Net Deficiency/(Surplus)	(558,956)	(673,104)	(690,900)	(118,965)	(413,901)	(425,901)	(430,280)	(427,529)	(443,092)
Projection of Revenue Sufficiency:									
Maximum Deficiency	-	-	-	-	45,057	41,501	45,721	57,230	50,585
Percent Increase Required Over Current Rate Revenues - Using SDCs				0.00%	3.66%	3.25%	3.47%	4.20%	3.56%
Revenues Recovered From Existing Rates and Charges				1,230,000	1,230,000	1,275,057	1,316,558	1,362,280	1,419,509
add: Revenues Recovered From Rate Increase				-	45,057	41,501	45,721	57,230	50,585
Total Revenues Recovered From Rates & Charges after Increase				1,230,000	1,275,057	1,316,558	1,362,280	1,419,509	1,470,095

Water System Capital Improvement Plan Forecast

City of Silverton Summary of Water System Capital Improvement Plan					
Cost Escalation Rate		3.50%			
Cost in FY 2005	Year	2006 CIP ID No.	Functional Allocation	Project	Future Total
					-
60,137	2009	6	Transmission & distribution	1000lf, Washington, N2nd - Mill	69,008
67,955	2009	10	Transmission & distribution	1130lf, Fifth, Oak - Main	77,979
44,501	2009	11	Transmission & distribution	740lf, Rock, Reserve - Kent, 90% built out	51,066
12,148	2010	12	Transmission & distribution	200lf, Barger, Central - Johnson, 90% built out	14,428
18,041	2010	13	Transmission & distribution	300lf, Barger, Johnson - Cowing, built out	21,427
22,852	2010	14	Transmission & distribution	380lf, Cowing, S Water - Madison, built out	27,141
5,412	2010	15	Transmission & distribution	90lf, Coolidge, Charles - end of 2", built out	6,428
53,522	2010	16	Transmission & distribution	890lf, Fisk, W Main - Charles, built out	63,567
9,141	2010	17	Transmission & distribution	152lf, Johnson, Barger - end, 90% built out	10,856
33,977	2010	18	Transmission & distribution	565lf, Madison, Central - Smith, built out	40,354
21,048	2010	19	Transmission & distribution	350lf, Olsen, Water - end	24,998
126,287	2010	20	Transmission & distribution	1800lf, S. Water, Ike Mooney - UGB, (0.3)(0.5)	149,990
30,970	2009	21	Transmission & distribution	515lf, Edgewood, Weiby - Ross	35,539
93,713	2009	22	Transmission & distribution	1100lf, Eureka, Keene - end, main feed from reservoir, (note 3)	107,538
24,957	2009	23	Transmission & distribution	415lf, Hazel, Ross - Keene, built out	28,638
85,244	2009	25	Transmission & distribution	1215lf, Westfield, W Main - end, 90% built out	97,819
40,292	2011	26	Transmission & distribution	670lf, Fosholm, Short - McClaine	49,529
28,866	2011	27	Transmission & distribution	480lf, Grant, S of Western - end,trans. to UGB, (note 3)	35,483
176,802	2011	29	Transmission & distribution	1800lf, Hobart, Quarry Ave., to west end, trans. to UGB, (note 3)	217,335
38,588	2011	30	Transmission & distribution	550lf, N 2nd, Hobart - City Limits, addit. 50% to UGB exp., (note 3)	47,434
6,916	2013	31	Transmission & distribution	115lf, Filbert, Walnut - end, built out	9,107
452,905	2013	32	Transmission & distribution	6025lf, Water St., A St. - Peach, 90% built out	596,390
95,417	2015	33	Transmission & distribution	1120lf, Eureka, Keene - W Main, main trans. From reservoir, (note 3)	134,595
253,276	2015	34	Transmission & distribution	2000lf, Quarry Rd., Hobart - end @ UGB, (note 3)	357,271
105,871	2015	35	Transmission & distribution	740lf, Setness, Hobart - end, (note 3)	149,341
701,596	2009	37	Source of Supply - Treatment	Silver Creek P.S. & 3400lf, 14"Supply Line	805,098
601,368	2012	38	Source of Supply - Treatment	4MGD Solids Contact Clarifier	765,108
300,684	2012	40	Source of Supply - Treatment	Filter Backwash Sedimentation Basin	382,554
1,603,648	2014	41	Transmission & distribution - reservoir	Victor Point Rd. Reservoir w/Hydroneumatic Tank, (note 3)	2,185,608
601,368	2014	42	Transmission & distribution - reservoir	High Level Feeder Line,5700lf, 10", (note 3)	819,603
500,000	2012	45	Transmission & distribution	Low level Distribution Feeder, 5000 lf, 12"	636,140
150,000	2009	46	Transmission & distribution - reservoir	High Level Backup Pump Station w/Aux. Power	172,128
					-
\$6,367,501				Net Construction Cost	\$7,632,259

Water System Capital Funding Plan Forecast

City of Silverton Summary of Funding Options for Water Capital Improvements					
Assumptions: Fund Earnings % 4.50% Issuance Cost: Short-Term 1.00% Long-Term: Revenue Bonds 1.00% G.O. Bonds 1.00%		Interim Financing: BANS Used? (1=Y,0=N) 0 BAN Interest Rate: 4.50% Long-Term Financing: Revenue Bonds: Life of Debt (Years) 20 Interest Rate 4.50% Coverage Factor Required 1.00 Fund Reserve from Proceeds? (1=Y,0=N) 1 General Obligation Bonds: Life of Debt (Years) 20 Interest Rate 4.50% Fund Reserve from Proceeds? (1=Y,0=N) 1			
Capital Improvements Financing	2009	2010	2011	2012	2013
Capital Costs to be Funded	1,596,542	-	-	5,394,509	-
less: Contributions from improvement SDCs					
less: Contributions from reimbursement SDCs					
less: Contributions From Utility Rates	-	-	-	-	-
less: Capital Fund Contribution					
Amount to be Financed	1,596,542	-	-	5,394,509	-
Interim Borrowing:					
BANS Issued:	-	-	-	-	-
less: Borrowing Cost	-	-	-	-	-
less: Interest Payments	-	-	-	-	-
plus: Interest Earnings	-	-	-	-	-
Net Available from BANS	-	-	-	-	-
Long-term Borrowing:					
Revenue Bonds:					
Amount Borrowed	1,748,440	-	-	5,907,751	-
less: Financing Cost	17,484	-	-	59,078	-
less: Reserve Funding	134,413	-	-	454,165	-
less: Refunding of BANS	-	-	-	-	-
Net Funds from Revenue Bonds	1,596,542	-	-	5,394,509	-
General Obligation Bonds:					
Amount Borrowed	-	-	-	-	-
less: Financing Cost	-	-	-	-	-
less: Reserve Funding	-	-	-	-	-
less: Refunding of BANS	-	-	-	-	-
Net Funds from G.O. Bonds	-	-	-	-	-
New Annual Debt Service:					
Debt Service	134,413	134,413	134,413	588,578	588,578
Coverage	-	-	-	-	-
Reserve Funding	-	-	-	-	-



Technical Appendix B – Water System Rate Model Output

Water System Functional Cost Allocation Template

City of Silverton Revenue Requirements Allocation Template - Water																												
	Source of Supply						Transmission and Distribution System						Customer Account Expense				General and Administrative Expense						checksum	error				
	land, buildings and impoundment	reservoir	water treatment equipment	fees, permits	laboratory testing	vehicles, tools & misc.	source of supply total	distribution reservoirs	transmission & distribution mains	services	hydrants	fees, permits	tools, sho. and garage equipment	transmission & distribution mains total	meter reading and services	customer collection & services	postage, supplies	customer accounts expense total	General & Administrative	office supplies	telephone	contract services			employee costs	insurance - general	long term supply development	general and administrative expense total
Gross Revenue Requirements:																												
Personal Services:																												
Full time salaries	2.86%	2.86%	22.90%				28.63%	7.14%	64.24%					71.37%			0.00%									0.00%	100.00%	0.00%
Part time salaries	3.33%	3.33%	28.67%				33.33%		68.67%					86.67%			0.00%									0.00%	100.00%	0.00%
Worker's compensation insurance	2.86%	2.86%	22.90%				28.63%	7.14%	64.24%					71.37%			0.00%									0.00%	100.00%	0.00%
Social security/medicare	2.86%	2.86%	22.90%				28.63%	7.14%	64.24%					71.37%			0.00%									0.00%	100.00%	0.00%
Health insurance	2.86%	2.86%	22.90%				28.63%	7.14%	64.24%					71.37%			0.00%									0.00%	100.00%	0.00%
Lifedisability insurance	2.86%	2.86%	22.90%				28.63%	7.14%	64.24%					71.37%			0.00%									0.00%	100.00%	0.00%
PERS retirement	2.86%	2.86%	22.90%				28.63%	7.14%	64.24%					71.37%			0.00%									0.00%	100.00%	0.00%
Overtime salaries	2.86%	2.86%	22.90%				28.63%	7.14%	64.24%					71.37%			0.00%									0.00%	100.00%	0.00%
Materials and Services:																												
Office supplies							0.00%							0.00%			0.00%			100.00%						100.00%	100.00%	0.00%
Publications							0.00%							0.00%			0.00%		100.00%							100.00%	100.00%	0.00%
Advertising expense							0.00%							0.00%			0.00%		100.00%							100.00%	100.00%	0.00%
Telephone expense		25.00%					25.00%		25.00%					25.00%			0.00%				50.00%					50.00%	100.00%	0.00%
Postage & freight							0.00%							0.00%		100.00%	100.00%									0.00%	100.00%	0.00%
Gas/electric expense			75.00%				75.00%		5.00%					25.00%			0.00%									0.00%	100.00%	0.00%
Permit fees			100.00%				100.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Travel training & meetings							0.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Dues & memberships							0.00%							0.00%			0.00%					50.00%				50.00%	100.00%	0.00%
Equipment maintenance			100.00%				100.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Vehicle expense			16.00%				20.00%							80.00%			0.00%									0.00%	100.00%	0.00%
Recording fees							0.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Traffic control supplies							0.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Safety equipment/protective clothing							0.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Building/grounds maintenance	25.00%	25.00%					50.00%		12.50%		12.50%			50.00%			0.00%									0.00%	100.00%	0.00%
Small bills							50.00%							50.00%			0.00%									0.00%	100.00%	0.00%
Equipment rental			50.00%				0.00%							100.00%			0.00%									0.00%	100.00%	0.00%
Water system maintenance							0.00%							100.00%			0.00%									0.00%	100.00%	0.00%
Water reservoir maintenance		100.00%					100.00%		20.00%		80.00%			100.00%			0.00%									0.00%	100.00%	0.00%
Water meter program							0.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Legal services							0.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Contracted services				12.50%	6.25%	6.25%	25.00%							75.00%			0.00%									0.00%	100.00%	0.00%
Lab/chemical supplies							100.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Mapping expense							0.00%							100.00%			0.00%									0.00%	100.00%	0.00%
Abiqua dam maintenance							100.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Silver creek dam maintenance							100.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Water tests			90.00%				0.00%		10.00%					10.00%			0.00%									0.00%	100.00%	0.00%
Miscellaneous expense							0.00%							0.00%			0.00%									0.00%	100.00%	0.00%
System subsidy							0.00%							100.00%			0.00%									0.00%	100.00%	0.00%
Minor equipment							0.00%							100.00%			0.00%									0.00%	100.00%	0.00%
Software			80.00%				80.00%							20.00%			0.00%									0.00%	100.00%	0.00%
Capital Outlays:																												
Capital replacement							0.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Capital - NEW		11.91%					11.91%		3.61%		12.50%			37.50%			50.00%									0.00%	100.00%	0.00%
Contingencies and Reserves:																												
Contingency							0.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Reserve for debt service							0.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Transfers OUT:																												
Transfer to General Fund							0.00%							19.32%			0.00%									43.55%	100.00%	0.00%
Transfer to Debt Service Fund	2.86%	2.86%	22.90%				28.63%	7.14%	64.24%					71.37%			0.00%									0.00%	100.00%	0.00%
Transfer to Reserve Fund							0.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Transfer to Building Reserve Fund	50.00%						50.00%							50.00%			0.00%									0.00%	100.00%	0.00%
Transfer to Water System Project Fund	100.00%						100.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Transfer to Water Line Project Fund							0.00%							100.00%			0.00%									0.00%	100.00%	0.00%
Transfer to Fleet Replacement Fund							10.00%							90.00%			0.00%									0.00%	100.00%	0.00%
Transfer to Major Equipment Replacement Fund							50.00%							50.00%			0.00%									0.00%	100.00%	0.00%
Transfer to Extended Leave Fund	2.86%	2.86%	22.90%				28.63%	7.14%	64.24%					71.37%			0.00%									0.00%	100.00%	0.00%
Debt Service:																												
USDA RUS 1997 bond - principal							100.00%							0.00%			0.00%									0.00%	100.00%	0.00%
USDA RUS 1997 bond - interest							100.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Debt Service on New Serial Revenue Bonds							25.16%		36.98%		37.83%			74.82%			0.00%									0.00%	100.00%	0.00%
Subtotal Gross Revenue Requirements																												
Revenue Offsets:																												
Fees and permits:																												
Inspection fees							0.00%							100.00%			0.00%									0.00%	100.00%	0.00%
Recording fees							0.00%							100.00%			0.00%									0.00%	100.00%	0.00%
Administration fees							0.00%							0.00%			0.00%									0.00%	100.00%	0.00%
Miscellaneous revenue:																												
Interest earned							0.00%							0.00%			0.00%											

Water System Revenue Requirements Forecast

Imported Revenue Requirments from Water System Revenue Requirments Model						
	2008	2009	2010	2011	2012	2013
Gross Revenue Requirements:						
Personal Services:						
Full time salaries	316,951	326,460	336,253	346,341	356,731	367,433
Part time salaries	8,375	8,626	8,885	9,152	9,426	9,709
Worker's compensation insurance	13,628	14,446	15,312	16,231	17,205	18,237
Social security/medicare	25,853	26,629	27,427	28,250	29,098	29,971
Health insurance	63,368	70,972	79,489	89,027	99,711	111,676
Life/disability insurance	134	138	142	146	151	155
PERS retirement	32,388	33,360	35,028	36,779	38,618	40,549
Overtime salaries	12,620	12,999	13,389	13,790	14,204	14,630
Materials and Services:						
Office supplies	2,700	2,781	2,864	2,950	3,039	3,130
Publications	400	412	424	437	450	464
Advertising expense	600	618	637	656	675	696
Telephone expense	10,000	10,300	10,609	10,927	11,255	11,593
Postage & freight	7,500	7,725	7,957	8,195	8,441	8,695
Gas/electric expense	60,000	61,800	63,654	65,564	67,531	69,556
Permit fees	600	618	637	656	675	696
Travel, training & meetings	3,200	3,296	3,395	3,497	3,602	3,710
Dues & memberships	1,600	1,648	1,697	1,748	1,801	1,855
Equipment maintenance	6,000	6,180	6,365	6,556	6,753	6,956
Vehicle expense	10,000	10,300	10,609	10,927	11,255	11,593
Recording fees	100	103	106	109	113	116
Traffic control supplies	500	515	530	546	563	580
Safety equipment/protective clothing	1,800	1,854	1,910	1,967	2,026	2,087
Building/grounds maintenance	3,000	3,090	3,183	3,278	3,377	3,478
Small tolls	600	618	637	656	675	696
Equipment rental	800	824	849	874	900	927
Water system maintenance	12,000	12,360	12,731	13,113	13,506	13,911
Water reservoir maintenance	1,000	1,030	1,061	1,093	1,126	1,159
Water meter program	55,000	80,000	82,400	84,872	87,418	90,041
Legal services	-	-	-	-	-	-
Contracted services	71,000	73,130	75,324	77,584	79,911	82,308
Lab/chemical supplies	28,000	28,840	29,705	30,596	31,514	32,460
Mapping expense	-	-	-	-	-	-
Abiqua dam maintenance	1,000	1,030	1,061	1,093	1,126	1,159
Silver creek dam maintenance	10,000	10,300	10,609	10,927	11,255	11,593
Water tests	5,500	5,665	5,835	6,010	6,190	6,376
Miscellaneous expense	200	206	212	219	225	232
System subsidy	60,000	61,800	63,654	65,564	67,531	69,556
Minor equipment	7,470	7,694	7,925	8,163	8,408	8,660
Software	20,350	20,961	21,589	22,237	22,904	23,591
Capital Outlays:						
Capital replacement	10,900	11,227	11,564	11,911	12,268	12,636
Capital - NEW	56,500	58,195	59,941	61,739	63,591	65,499
Contingencies and Reserves:						
Contingency	151,787	-	-	-	-	-
Reserve for debt service	121,856	-	-	-	-	-
Transfers OUT:						
Transfer to General Fund	371,866	382,816	394,300	406,129	418,313	430,863
Transfer to Debt Service Fund	16,160	16,645	17,144	17,658	18,188	18,734
Transfer to Reserve Fund	-	-	-	-	-	-
Transfer to Building Reserve Fund	20,000	40,000	41,200	42,436	43,709	45,020
Transfer to Warn System Project Fund	-	-	-	-	-	-
Transfer to Water Line Project Fund	-	-	-	-	-	-
Transfer to Fleet Replacement Fund	10,369	10,680	11,000	11,330	11,670	12,021
Transfer to Major Equipment Replacement Fund	23,232	23,929	24,647	25,386	26,148	26,932
Transfer to Extended Leave Fund	1,632	1,681	1,731	1,783	1,837	1,892
Debt Service:						
USDA RUS 1997 bond - principal	30,864	32,159	33,727	35,371	37,095	38,908
USDA RUS 1997 bond - interest	91,192	89,697	88,129	86,485	84,761	82,948
Debt Service on New Serial Revenue Bonds	-	134,413	134,413	134,413	588,578	588,578
Subtotal Gross Revenue Requirements	1,760,395	1,710,768	1,761,891	1,815,374	2,325,547	2,384,263
Revenue Offsets:						
Fees and permits:						
Inspection fees	30,000	33,939	34,957	36,006	37,086	38,199
Recording fees	-	2,127	2,191	2,256	2,324	2,394
Administration fees	12,000	10,995	11,325	11,665	12,015	12,375
Miscellaneous revenue:						
Interest earned	10,000	18,893	18,893	18,893	18,893	18,893
Delinquent/late charges	55,000	53,663	55,273	56,931	58,639	60,398
New water meter connections	65,000	36,369	37,038	37,720	38,414	39,120
Miscellaneous revenue	1,000	6,405	6,597	6,795	6,999	7,209
Insurance proceeds	-	-	-	-	-	-
Transfers IN:						
Transfer from Street Fund	10,310	3,120	3,213	3,310	3,409	3,511
Transfer from Sewer Fund	46,050	6,200	6,200	6,200	6,200	6,200
Transfer from Water Reimbursement SDC Fund	-	194,000	199,645	203,318	207,059	210,868
Transfer from Water Improvement SDC Fund	-	70,000	70,000	70,000	515,000	515,000
Subtotal Revenue Offsets	229,360	435,711	445,333	453,094	906,038	914,168
Net Revenues Required From Rates	\$ 1,531,035	\$ 1,275,057	\$ 1,316,558	\$ 1,362,280	\$ 1,419,509	\$ 1,470,095

Functional Cost Allocation of Water System Revenue Requirements

	Source of Supply										Transmission and Distribution System						Customer Account Expense				General and Administrative Expense								checksum	checksum error
	land, buildings and improvement	reservoir	water treatment equipment	fees, permits	laboratory testing	vehicles, tools & misc.	source of supply total	distribution reservoirs	transmission & distribution mains	services	hydrants	fees, permits	tools, shop, and garage equipment	transmission & distribution mains total	meter reading and services	customer collection & services	postage, supplies	customer accounts expense total	General & Administrative	office supplies	telephone	contract services	employee costs	insurance-general	long term supply development	general and administrative expense total				
Forecast Year: 2008																														
Gross Revenue Requirements:																														
Personal Services:	13,588	13,588	108,706	-	-	-	135,882	33,185	301,458	-	-	2,792	337,435	-	-	-	115,000	122,500	1,700	2,700	5,000	-	-	-	-	15,600	473,317	-	-	
Materials and Services:	11,950	4,450	138,605	4,438	32,438	-	138,890	7,925	39,945	53,250	375	4,445	105,940	48,145	51,547	5,450	5,450	122,500	2,040	1,932	-	6,200	-	-	-	15,600	380,900	-	-	
Capital Outlays:	6,791	-	-	-	-	-	6,791	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,671	67,400	-	-
Contingencies and Reserves:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	273,643	273,643	-	-
Transfers OUT:	10,509	509	15,690	-	-	-	27,746	1,270	83,238	-	-	-	30,948	115,495	-	138,007	-	138,007	161,850	-	-	-	-	-	-	161,850	443,059	-	-	
Debt Service:	-	-	122,056	-	-	-	122,056	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	122,056	122,056	-	-
Subtotal Gross Revenue Requirements	36,048	25,279	330,057	4,438	32,438	1,037	429,295	42,380	426,681	53,250	1,738	86,330	610,378	120,450	138,007	7,500	265,957	439,233	4,332	5,000	-	6,200	-	-	-	454,764	1,760,395	-	-	
Revenue Offsets:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fees and permits:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous revenue:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfers IN:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Revenue Offsets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Revenues Required From Rates	\$ 36,048	\$ 25,279	\$ 330,057	\$ 4,438	\$ 32,438	\$ 1,037	\$ 429,295	\$ 42,380	\$ 340,321	\$ 53,250	\$ 1,738	\$ 86,330	\$ 610,378	\$ 120,450	\$ 138,007	\$ 7,500	\$ 145,957	\$ 416,233	\$ 4,332	\$ 5,000	\$ -	\$ 6,200	\$ -	\$ -	\$ -	\$ 431,764	\$ 1,531,035	\$ -	\$ -	
Forecast Year: 2009																														
Gross Revenue Requirements:																														
Personal Services:	14,171	14,171	113,367	-	-	-	141,708	34,617	314,428	-	-	2,875	351,920	-	-	-	141,800	149,525	1,751	2,781	5,150	-	-	-	-	16,068	493,628	-	-	
Materials and Services:	12,309	4,584	86,115	4,571	33,411	-	140,985	8,163	41,143	54,848	396	4,576	106,119	49,590	53,094	5,614	5,614	142,147	2,101	1,681	-	6,386	-	-	-	16,068	415,888	-	-	
Capital Outlays:	6,933	-	-	-	-	-	6,933	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,782	69,422	-	-
Contingencies and Reserves:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	166,706	475,751	-	-
Transfers OUT:	20,525	525	15,708	-	-	-	36,758	1,308	85,735	-	-	41,577	128,620	-	-	142,147	-	142,147	166,706	-	-	-	-	-	-	166,706	475,751	-	-	
Debt Service:	-	-	155,708	-	-	-	155,708	49,713	50,849	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256,289	256,289	-	-
Subtotal Gross Revenue Requirements	47,004	29,212	371,349	4,571	33,411	1,068	483,614	93,800	494,256	54,848	1,790	98,620	743,313	147,414	142,147	7,725	297,286	170,557	4,462	5,150	-	6,386	-	-	-	186,555	1,710,768	-	-	
Revenue Offsets:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fees and permits:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous revenue:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfers IN:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Revenue Offsets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Revenues Required From Rates	\$ 47,004	\$ 29,212	\$ 316,393	\$ 4,571	\$ 33,411	\$ 1,068	\$ 429,628	\$ 93,800	\$ 239,826	\$ 54,848	\$ 1,790	\$ 98,620	\$ 743,313	\$ 147,414	\$ 142,147	\$ 7,725	\$ 207,254	\$ 134,264	\$ 4,462	\$ 5,150	\$ -	\$ 6,386	\$ -	\$ -	\$ -	\$ 150,282	\$ 1,275,057	\$ -	\$ -	
Forecast Year: 2010																														
Gross Revenue Requirements:																														
Personal Services:	14,810	14,810	118,483	-	-	-	148,103	36,190	328,671	-	-	2,962	367,822	-	-	-	146,564	154,011	1,804	2,864	5,305	-	-	-	-	16,550	515,925	-	-	
Materials and Services:	12,678	4,741	88,697	4,708	34,413	-	140,526	8,408	42,378	56,493	398	4,716	112,362	51,077	54,687	5,782	5,782	146,564	2,164	1,731	-	6,578	-	-	-	17,547	441,014	-	-	
Capital Outlays:	7,441	-	-	-	-	-	7,441	-	2,164	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,895	71,505	-	-
Contingencies and Reserves:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	171,707	490,023	-	-
Transfers OUT:	21,140	540	15,645	-	-	-	39,427	1,347	88,307	-	-	42,824	132,478	-	-	146,412	-	146,412	171,707	-	-	-	-	-	-	171,707	490,023	-	-	
Debt Service:	-	-	155,708	-	-	-	155,708	49,713	50,849	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256,289	256,289	-	-
Subtotal Gross Revenue Requirements	48,628	27,213	379,533	4,708	34,413	1,100	496,595	95,657	512,368	56,493	1,843	101,579	767,941	151,836	146,412	7,957	306,204	175,674	4,996	5,305	-	6,578	-	-	-	192,152	1,761,891	-	-	
Revenue Offsets:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fees and permits:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous revenue:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfers IN:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Revenue Offsets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Revenues Required From Rates	\$ 48,628	\$ 27,213	\$ 324,012	\$ 4,708	\$ 34,413	\$ 1,100	\$ 440,074	\$ 95,657	\$ 251,862	\$ 56,493	\$ 1,843	\$ 101,579	\$ 507,254	\$ 114,795	\$ 91,139	\$ 7,957	\$ 213,893	\$ 138,858	\$ 4,996	\$ 5,305	\$ -	\$ 6,578	\$ -	\$ -	\$ -	\$ 155,337	\$ 1,316,558	\$ -	\$ -	
Forecast Year: 2011																														
Gross Revenue Requirements:																														
Personal Services:	15,493	15,493	123,941	-	-	-	154,926	37,869	343,871	-	-	3,051	384,791	-	-	-	150,436	158,331	1,858	2,950	5,464	-	-	-	-	17,047	539,717	-	-	
Materials and Services:	13,058	4,863	91,357	4,849	35,445	-	149,572	8,660	43,949	58,188	410	4,857	115,763	52,610	56,327	5,955	5,955	150,804	2,229	1,783	-	6,775	-	-	-	17,547	441,014	-	-	
Capital Outlays:	7,355	-	-	-	-	-	7,355	-	2,229	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4,012	73,650	-	-
Contingencies and Reserves:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	171,707	490,023	-	-
Transfers OUT:	21,775	557	17,145	-	-	-	40,669	1,388	90,967	-	-	44,109	136,453	-	-	150,804	-	150,804	176,858	-	-	-	-	-	-	176,858	504,724	-	-	
Debt Service:	-	-	155,708	-	-	-	155,708	49,713	50,849	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	256,289	256,289	-	-
Subtotal Gross Revenue Requirements	50,325	28,267	388,152	4,849	35,445	1,133	508,171	97,629	531,555	58,188	1,899	104,626	793,896	156,391	150,804	8,195	315,390	180,944	4,733	5,464	-	6,775	-	-	-	197,916	1,815,374	-	-	
Revenue Offsets:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Fees and permits:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous revenue:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Transfers IN:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Revenue Offsets	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Revenues Required From Rates	\$ 50,325	\$ 28,267	\$ 332,264	\$ 4,849	\$ 35,445	\$ 1,133	\$ 452,293	\$ 97,629	\$ 266,352	\$ 58,188	\$ 1,899	\$ 104,626	\$ 507,254	\$ 116,871	\$ 93,873	\$ 8,195	\$ 220,740	\$ 143,991	\$ 4,733	\$ 5,464	\$ -	\$ 6,775	\$ -	\$ -	\$ -	\$ 180,563	\$ 1,362,280	\$ -	\$ -	
Forecast Year: 2012																														
Gross Revenue Requirements:																														
Personal Services:	16,222	16,222	129,774	-	-	-	162,217	39,664	360,120	-	-	3,142	402,926	-	-	-	154,940	163,300	1,913	3,039	5,628	-	-	-	-	17,588	565,144	-	-	
Materials and Services:	13,450																													

Allocations to Base Extra Capacity

City of Silverton, Oregon Water System Rate Study Update 2008 Allocation of Net Revenue Requirements - Base-Extra Capacity Method For the Budget Year 2008 and the Forecasted Fiscal Years 2009-2013								
Line Item Description	Base	Extra Capacity		Customer Costs		BEC Total	Checksum	Checksum Error
		Max Day	Max hour	Meters & Services	Billing			
Forecast Year: 2008								
Source of Supply	259,253	170,043	-	-	-	429,295	429,295	-
Transmission and Distribution System	326,854	131,443	65,721	-	-	524,018	524,018	-
Customer Account Expense	-	-	-	55,450	90,507	145,957	145,957	-
General and Administrative Expense	-	-	-	431,764	-	431,764	431,764	-
Total	\$ 586,107	\$ 301,486	\$ 65,721	\$ 487,214	\$ 90,507	\$ 1,531,035	\$ 1,531,035	\$ -
Forecast Year: 2009								
Source of Supply	265,655	163,003	-	-	-	428,658	428,658	-
Transmission and Distribution System	317,002	114,588	57,294	-	-	488,883	488,883	-
Customer Account Expense	-	-	-	111,044	96,210	207,254	207,254	-
General and Administrative Expense	-	-	-	150,262	-	150,262	150,262	-
Total	\$ 582,657	\$ 277,591	\$ 57,294	\$ 261,306	\$ 96,210	\$ 1,275,057	\$ 1,275,057	\$ -
Forecast Year: 2010								
Source of Supply	273,146	166,928	-	-	-	440,074	440,074	-
Transmission and Distribution System	328,308	119,298	59,649	-	-	507,254	507,254	-
Customer Account Expense	-	-	-	114,798	99,096	213,893	213,893	-
General and Administrative Expense	-	-	-	155,337	-	155,337	155,337	-
Total	\$ 601,453	\$ 286,226	\$ 59,649	\$ 270,134	\$ 99,096	\$ 1,316,558	\$ 1,316,558	\$ -
Forecast Year: 2011								
Source of Supply	281,104	171,179	-	-	-	452,283	452,283	-
Transmission and Distribution System	341,173	125,013	62,507	-	-	528,693	528,693	-
Customer Account Expense	-	-	-	118,671	102,069	220,740	220,740	-
General and Administrative Expense	-	-	-	160,563	-	160,563	160,563	-
Total	\$ 622,277	\$ 296,193	\$ 62,507	\$ 279,235	\$ 102,069	\$ 1,362,280	\$ 1,362,280	\$ -
Forecast Year: 2012								
Source of Supply	235,327	118,146	-	-	-	353,473	353,473	-
Transmission and Distribution System	413,336	172,636	86,318	-	-	672,289	672,289	-
Customer Account Expense	-	-	-	122,669	105,131	227,800	227,800	-
General and Administrative Expense	-	-	-	165,947	-	165,947	165,947	-
Total	\$ 648,663	\$ 290,782	\$ 86,318	\$ 288,616	\$ 105,131	\$ 1,419,509	\$ 1,419,509	\$ -
Forecast Year: 2013								
Source of Supply	244,107	122,894	-	-	-	367,000	367,000	-
Transmission and Distribution System	427,706	179,211	89,605	-	-	696,523	696,523	-
Customer Account Expense	-	-	-	126,795	108,285	235,079	235,079	-
General and Administrative Expense	-	-	-	171,492	-	171,492	171,492	-
Total	\$ 671,813	\$ 302,105	\$ 89,605	\$ 298,287	\$ 108,285	\$ 1,470,095	\$ 1,470,095	\$ -

City of Silverton, Oregon
Water System Rate Study Update 2008
Net Water System Revenue Requirements Allocation Template - Base-Extra Capacity Method

	Extra Capacity			Customer Costs			Checksum	Checksum Error
	Base	Max Day	Max hour	Meters & Services	Billing	Base-Extra Capacity Total		
Source of Supply								
land, buildings and impoundment reservoir	100.00%					100.00%	100.00%	0.00%
water treatment equipment	48.48%	51.52%				100.00%	100.00%	0.00%
fees, permits	100.00%					100.00%	100.00%	0.00%
laboratory testing	100.00%					100.00%	100.00%	0.00%
vehicles, tools, & misc.	100.00%					100.00%	100.00%	0.00%
source of supply total								
Transmission and Distribution System								
distribution reservoirs	48.48%	34.35%	17.17%			100.00%	100.00%	0.00%
transmission & distribution mains services	48.48%	34.35%	17.17%			100.00%	100.00%	0.00%
hydrants	100.00%					100.00%	100.00%	0.00%
fees, permits	100.00%					100.00%	100.00%	0.00%
tools, shop, and garage equipment	100.00%					100.00%	100.00%	0.00%
transmission & distribution mains total								
Customer Account Expense								
meter reading and services				100.00%		100.00%	100.00%	0.00%
customer collection & services					100.00%	100.00%	100.00%	0.00%
postage, supplies					100.00%	100.00%	100.00%	0.00%
customer accounts expense total								
General and Administrative Expense								
General & Administrative				100.00%		100.00%	100.00%	0.00%
office supplies				100.00%		100.00%	100.00%	0.00%
telephone				100.00%		100.00%	100.00%	0.00%
contract services				100.00%		100.00%	100.00%	0.00%
employee costs				100.00%		100.00%	100.00%	0.00%
insurance - general				100.00%		100.00%	100.00%	0.00%
long term supply development				100.00%		100.00%	100.00%	0.00%
general and administrative expense total								

City of Silverton, Oregon
Water System Rate Study Update 2008
Forecast of Net Revenue Requirements by System Function

	2008	2009	2010	2011	2012	2013
Net Revenue Requirement by Function:						
Source of Supply						
land, buildings and impoundment reservoir	36,048	47,004	48,628	50,325	52,099	53,956
water treatment equipment	25,279	26,212	27,213	28,267	29,379	30,554
fees, permits	330,057	316,393	324,012	332,264	229,324	238,539
laboratory testing	4,438	4,571	4,708	4,849	4,994	5,144
vehicles, tools, & misc.	32,438	33,411	34,413	35,445	36,509	37,604
vehicles, tools, & misc.	1,037	1,068	1,100	1,133	1,167	1,202
source of supply total	429,295	428,658	440,074	452,283	353,473	367,000
Transmission and Distribution System						
distribution reservoirs	42,380	93,800	95,657	97,629	267,698	269,931
transmission & distribution mains services	340,321	239,826	251,682	266,352	234,937	251,848
hydrants	53,250	54,848	56,493	58,188	59,933	61,731
hydrants	1,738	1,790	1,843	1,899	1,956	2,014
fees, permits	-	-	-	-	-	-
tools, shop, and garage equipment	86,330	98,620	101,579	104,626	107,765	110,998
transmission & distribution mains total	524,018	488,883	507,254	528,693	672,289	696,523
Customer Account Expense						
meter reading and services	55,450	111,044	114,798	118,671	122,669	126,795
customer collection & services	83,007	88,485	91,139	93,873	96,689	99,590
postage, supplies	7,500	7,725	7,957	8,195	8,441	8,695
customer accounts expense total	145,957	207,254	213,893	220,740	227,800	235,079
General and Administrative Expense						
General & Administrative	416,233	134,264	138,859	143,591	148,466	153,487
office supplies	4,332	4,462	4,596	4,733	4,875	5,022
telephone	5,000	5,150	5,305	5,464	5,628	5,796
contract services	-	-	-	-	-	-
employee costs	6,200	6,386	6,578	6,775	6,978	7,187
insurance - general	-	-	-	-	-	-
long term supply development	-	-	-	-	-	-
general and administrative expense total	431,764	150,262	155,337	160,563	165,947	171,492
Total Net Revenue Requirement by Function	1,531,035	1,275,057	1,316,558	1,362,280	1,419,509	1,470,095
Checksum	1,531,035	1,275,057	1,316,558	1,362,280	1,419,509	1,470,095
Checksum error	-	-	-	-	-	-

Current and Forecasted Number of Active Accounts and Meters

City of Silverton, Oregon Water System Rate Study Update 2008 Number of Active Accounts as of June 30, 2007								
	Meter Size							Total
	½ inch	¾ inch	1 inch	1 ½ inch	2 inch	3 inch	4 inch	
Inside City:								
Residential	1,004	1,570	114	2	1	-	-	2,691
Multifamily	13	25	18	11	9	3	1	80
Commercial - General	77	73	50	34	13	8	1	256
Commercial - Oregon Garden	1	5	-	-	-	-	-	6
Subtotal inside city	1,095	1,673	182	47	23	11	2	3,033
Outside City:								
Residential	86	12	2	-	-	-	-	100
Multifamily	-	-	-	-	-	-	-	-
Commercial - General	-	1	-	-	-	-	-	1
Subtotal outside City	86	13	2	-	-	-	-	101
System Total	1,181	1,686	184	47	23	11	2	3,134

City of Silverton, Oregon Water System Rate Study Update 2008 Forecast of Water System Active Accounts fiscal 2008-2013						
	Budget	Forecast				
	2008	2009	2010	2011	2012	2013
Inside City:						
Residential	2,691	2,741	2,791	2,842	2,895	2,948
Multifamily	80	81	83	84	86	88
Commercial - General	256	261	266	270	275	280
Commercial - Oregon Garden	6	6	6	6	6	7
Subtotal inside city	3,033	3,089	3,146	3,204	3,262	3,322
Outside City:						
Residential	100	102	104	106	108	110
Multifamily	-	-	-	-	-	-
Commercial - General	1	1	1	1	1	1
Subtotal outside City	101	103	105	107	109	111
System Total	3,134	3,192	3,250	3,310	3,371	3,433

	2007	2030
Silverton estimated 2007 population per PSU - Population Research Center July, 1, 2007	9,205	
Forecasted population 2030 per Wastewater System Facility Master Plan, February, 2007		14,000
Compound annualized population growth rate	1.84%	

Current and Forecasted Water Sales Volumes

City of Silverton Water Consumption by Customer type								
Classification	Commercial/Industrial			Residential			Bulk CF	Total CF
	Total CF	Inside CF	Outside CF	Total CF	Inside CF	Outside CF		
July-06	1,648,112	1,639,453	8,659	5,756,091	5,602,112	153,979		7,404,203
August-06	2,665,863	2,652,903	12,960	7,632,950	7,427,673	205,277		10,298,813
September-06	1,908,187	1,899,977	8,210	5,321,330	5,166,250	155,080		7,229,517
October-06	1,665,935	1,660,900	5,035	3,357,243	3,267,006	90,237		5,023,178
November-06	1,430,553	1,426,408	4,145	2,359,612	2,295,172	64,440		3,790,165
December-06	1,046,787	1,042,887	3,900	1,810,763	1,761,723	49,040		2,857,550
January-07	1,118,922	1,114,608	4,314	2,265,944	2,201,885	64,059		3,384,866
February-07	1,069,586	1,063,491	6,095	1,926,988	1,861,097	65,891		2,996,574
March-07	987,616	982,405	5,211	1,932,991	1,875,119	57,872		2,920,607
April-07	1,023,296	1,016,850	6,446	2,106,028	2,046,238	59,790		3,129,324
May-07	1,135,275	1,128,003	7,272	2,532,971	2,465,409	67,562		3,668,246
June-07	1,406,989	1,398,619	8,370	4,677,939	4,578,320	99,619		6,084,928
Total	17,107,121	17,026,504	80,617	41,680,850	40,548,004	1,132,846	-	58,787,971
Average Month	1,425,593	1,418,875	6,718	3,473,404	3,379,000	94,404		4,898,998
Peak Month - Volume	2,665,863	2,652,903	12,960	7,632,950	7,427,673	205,277		10,298,813
Peak Month	Aug-06	Aug-06	Aug-06	Aug-06	Aug-06	Aug-06		Aug-06
Peak Month Factor	1.8700	1.8697	1.9291	2.1975	2.1982	2.1745		2.1022
Average Day	46,869	46,648	221	114,194	111,090	3,104		161,063
Peak Day	85,996	85,578	418	246,224	239,602	6,622		332,220
Peak Day Factor	1.8348	1.8345	1.8928	2.1562	2.1568	2.1335		2.0627

	2008	2009	2010	2011	2012	2013
Water Sales Forecast - CF						
Residential:						
Inside City	40,548,004	41,294,010	42,053,741	42,827,449	43,615,392	44,417,832
Outside City	<u>1,132,846</u>	<u>1,153,688</u>	<u>1,174,914</u>	<u>1,196,530</u>	<u>1,218,544</u>	<u>1,240,963</u>
Total residential	41,680,850	42,447,698	43,228,655	44,023,979	44,833,936	45,658,795
Commercial						
Inside City	17,026,504	17,339,759	17,658,778	17,983,665	18,314,530	18,651,483
Outside City	<u>80,617</u>	<u>82,100</u>	<u>83,611</u>	<u>85,149</u>	<u>86,716</u>	<u>88,311</u>
Total commercial	17,107,121	17,421,859	17,742,388	18,068,814	18,401,246	18,739,794
Grand Total	<u>58,787,971</u>	<u>59,869,557</u>	<u>60,971,043</u>	<u>62,092,793</u>	<u>63,235,182</u>	<u>64,398,589</u>

	2007	2030
Silverton estimated 2007 population per PSU - Population Research Center July, 1, 2007	9,205	
Forecasted population 2030 per Wastewater System Facility Master Plan, February, 2007		14,000
Compound annualized population growth rate		1.84%

Forecasted Water Customer Account (Base) Charges

City of Silverton, Oregon Water System Rate Study Update 2008 Calculation of Forecasted Customer Charges (\$/Account/Month)						
	Budget 2008	Forecast				
		2009	2010	2011	2012	2013
Net revenue requirement - customer costs						
Meters & Services	487,214	261,306	270,134	279,235	288,616	298,287
Billing	90,507	96,210	99,096	102,069	105,131	108,285
Total	577,721	357,516	369,230	381,303	393,747	406,572
Number of equivalent customers/bills:						
Per month	3,185	3,243	3,303	3,364	3,425	3,488
Annual	38,214	38,917	39,633	40,362	41,105	41,861
Unit charge per equivalent customer:						
Meters & Services	12.7496	6.7144	6.8159	6.9182	7.0215	7.1256
Billing	2.3684	2.4722	2.5003	2.5288	2.5576	2.5868
Total	\$ 15.1181	\$ 9.1866	\$ 9.3162	\$ 9.4470	\$ 9.5791	\$ 9.7124
Customer charge revenue reconciliation						
Revenue generated from rates	577,721	357,516	369,230	381,303	393,747	406,572
Revenue required from rates	577,721	357,516	369,230	381,303	393,747	406,572
Over/(under) recovery from rates	-	-	-	-	-	-

Forecasted Water Commodity (Use) Charges

City of Silverton, Oregon Water System Rate Study Update 2008 Calculation of Water Commodity Charges (\$/Ccf)						
Line Item Description	Budget 2008	Forecast				
		2009	2010	2011	2012	2013
Estimated annual water sales in Ccf:						
Residential:						
Residential sales subject to full pricing	302,369	307,932	313,598	319,367	325,243	331,227
Residential sales priced at a 50% discount	120,104	122,313	124,564	126,855	129,189	131,566
Commercial	171,474	174,629	177,842	181,114	184,446	187,839
Total	593,947	604,875	616,003	627,336	638,878	650,632
Base charge:						
Forecasted base cost revenue requirement	\$ 586,107	\$ 582,657	\$ 601,453	\$ 622,277	\$ 648,663	\$ 671,813
Base load factor:						
Residential	1.00	1.00	1.00	1.00	1.00	1.00
Commercial	1.00	1.00	1.00	1.00	1.00	1.00
Base charge:						
Residential - full price	1.0978	1.0716	1.0862	1.1035	1.1295	1.1487
Residential - summer discount (over 10 Ccf)	0.5489	0.5358	0.5431	0.5518	0.5648	0.5743
Commercial	1.0978	1.0716	1.0862	1.1035	1.1295	1.1487
Extra capacity charge:						
Maximum day charge:						
Forecasted maximum day revenue requirement	\$ 301,486	\$ 277,591	\$ 286,226	\$ 296,193	\$ 290,782	\$ 302,105
Maximum day peaking factor:						
Residential	2.00	2.00	2.00	2.00	2.00	2.00
Commercial	2.00	2.00	2.00	2.00	2.00	2.00
Maximum day extra capacity charge:						
Residential - full price	0.5647	0.5105	0.5169	0.5252	0.5063	0.5166
Residential - summer discount (over 10 Ccf)	0.2823	0.2553	0.2585	0.2626	0.2532	0.2583
Commercial	0.5647	0.5105	0.5169	0.5252	0.5063	0.5166
Maximum hour charge:						
Forecasted maximum hour revenue requirement	\$ 65,721	\$ 57,294	\$ 59,649	\$ 62,507	\$ 86,318	\$ 89,605
Maximum hour peaking factor:						
Residential	3.00	3.00	3.00	3.00	3.00	3.00
Commercial	3.00	3.00	3.00	3.00	3.00	3.00
Maximum hour extra capacity charge:						
Residential - full price	0.1231	0.1054	0.1077	0.1108	0.1503	0.1532
Residential - summer discount (over 10 Ccf)	0.0615	0.0527	0.0539	0.0554	0.0752	0.0766
Commercial	0.1231	0.1054	0.1077	0.1108	0.1503	0.1532
Commodity charge summary:						
Residential - full price						
Base	1.0978	1.0716	1.0862	1.1035	1.1295	1.1487
Maximum day	0.5647	0.5105	0.5169	0.5252	0.5063	0.5166
Maximum hour	0.1231	0.1054	0.1077	0.1108	0.1503	0.1532
Total	1.7856	1.6875	1.7108	1.7396	1.7862	1.8185
Residential - summer discount (over 10 Ccf)						
Base	0.5489	0.5358	0.5431	0.5518	0.5648	0.5743
Maximum day	0.2823	0.2553	0.2585	0.2626	0.2532	0.2583
Maximum hour	0.0615	0.0527	0.0539	0.0554	0.0752	0.0766
Total	0.8928	0.8438	0.8554	0.8698	0.8931	0.9092
Commercial						
Base	1.0978	1.0716	1.0862	1.1035	1.1295	1.1487
Maximum day	0.5647	0.5105	0.5169	0.5252	0.5063	0.5166
Maximum hour	0.1231	0.1054	0.1077	0.1108	0.1503	0.1532
Total	1.7856	1.6875	1.7108	1.7396	1.7862	1.8185
Commodity revenue reconciliation:						
Revenue recovered from rates:						
Base	586,107	582,657	601,453	622,277	648,663	671,813
Max day	301,486	277,591	286,226	296,193	290,782	302,105
Max hour	65,721	57,294	59,649	62,507	86,318	89,605
Total	953,314	917,541	947,328	980,976	1,025,762	1,063,523
Net revenues required from rates	953,314	917,541	947,328	980,976	1,025,762	1,063,523
Over/(under) recovery from rates	-	-	-	-	-	-

Proposed Schedule of Water Rates

City of Silverton, Oregon Water System Rate Study Update 2008 Current and Proposed Schedule of Water Rates						
Line Item Description	Current Rates	Forecast				
		2009	2010	2011	2012	2013
Inside City:						
Base charge (monthly)	\$ 11.5100	\$ 9.1866	\$ 9.3162	\$ 9.4470	\$ 9.5791	\$ 9.7124
Use (commodity) charge						
Residential - full price						
Base		1.0716	1.0862	1.1035	1.1295	1.1487
Extra capacity - maximum day		0.5105	0.5169	0.5252	0.5063	0.5166
Extra capacity - maximum hour		0.1054	0.1077	0.1108	0.1503	0.1532
Total	1.2900	1.6875	1.7108	1.7396	1.7862	1.8185
Residential - summer discount (over 10 Ccf)						
Base		0.5358	0.5431	0.5518	0.5648	0.5743
Extra capacity - maximum day		0.2553	0.2585	0.2626	0.2532	0.2583
Extra capacity - maximum hour		0.0527	0.0539	0.0554	0.0752	0.0766
Total	0.6450	0.8438	0.8554	0.8698	0.8931	0.9092
Commercial/Industrial:						
Base		1.0716	1.0862	1.1035	1.1295	1.1487
Extra capacity - maximum day		0.5105	0.5169	0.5252	0.5063	0.5166
Extra capacity - maximum hour		0.1054	0.1077	0.1108	0.1503	0.1532
Total	1.2900	1.6875	1.7108	1.7396	1.7862	1.8185
Outside City:						
Base charge (monthly)	\$ 17.2650	\$ 13.7799	\$ 13.9743	\$ 14.1705	\$ 14.3686	\$ 14.5686
Use (commodity) charge						
Residential:						
Base		1.6074	1.6293	1.6553	1.6943	1.7230
Extra capacity - maximum day		0.7658	0.7754	0.7879	0.7595	0.7748
Extra capacity - maximum hour		0.1581	0.1616	0.1663	0.2255	0.2298
Total	1.9350	2.5313	2.5663	2.6094	2.6792	2.7277
Commercial/Industrial:						
Base		1.6074	1.6293	1.6553	1.6943	1.7230
Extra capacity - maximum day		0.7658	0.7754	0.7879	0.7595	0.7748
Extra capacity - maximum hour		0.1581	0.1616	0.1663	0.2255	0.2298
Total	1.9350	2.5313	2.5663	2.6094	2.6792	2.7277



Technical Appendix C – Wastewater System Revenue Requirements Model Output

Wastewater System Planning and Macroeconomic Assumptions

City of Silverton Summary of Wastewater System Planning and Macroeconomic Assumptions						
	2008	2009	2010	2011	2012	2013
Construction Inflation Rate	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Revenue line item inflation	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Interest Earnings Rate	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Line Item Operations and Maintenance Inflation Factors:						
Personal Services:						
Full time salaries		3.00%	3.00%	3.00%	3.00%	3.00%
Part time salaries		3.00%	3.00%	3.00%	3.00%	3.00%
Worker's compensation insurance		6.00%	6.00%	6.00%	6.00%	6.00%
Social security/medicare		3.00%	3.00%	3.00%	3.00%	3.00%
Health insurance		12.00%	12.00%	12.00%	12.00%	12.00%
Life/disability insurance		3.00%	3.00%	3.00%	3.00%	3.00%
PERS retirement		3.00%	5.00%	5.00%	5.00%	5.00%
Overtime salaries		3.00%	3.00%	3.00%	3.00%	3.00%
Total personal services						
Materials and Services:						
Office supplies		3.00%	3.00%	3.00%	3.00%	3.00%
Publications		3.00%	3.00%	3.00%	3.00%	3.00%
Advertising expense		3.00%	3.00%	3.00%	3.00%	3.00%
Telephone expense		3.00%	3.00%	3.00%	3.00%	3.00%
Postage & freight		3.00%	3.00%	3.00%	3.00%	3.00%
Gas/electric expense		3.00%	3.00%	3.00%	3.00%	3.00%
Permit fees		3.00%	3.00%	3.00%	3.00%	3.00%
Travel, training & meetings		3.00%	3.00%	3.00%	3.00%	3.00%
Dues & memberships		3.00%	3.00%	3.00%	3.00%	3.00%
Equipment maintenance		3.00%	3.00%	3.00%	3.00%	3.00%
Vehicle expense		3.00%	3.00%	3.00%	3.00%	3.00%
Recording fees		3.00%	3.00%	3.00%	3.00%	3.00%
Traffic control supplies		3.00%	3.00%	3.00%	3.00%	3.00%
Lift station maintenance		3.00%	3.00%	3.00%	3.00%	3.00%
Safety equipment/protective clothing		3.00%	3.00%	3.00%	3.00%	3.00%
Building/grounds maintenance		3.00%	3.00%	3.00%	3.00%	3.00%
Small tolls		3.00%	3.00%	3.00%	3.00%	3.00%
Equipment rental		3.00%	3.00%	3.00%	3.00%	3.00%
Sewer system maintenance		3.00%	3.00%	3.00%	3.00%	3.00%
Legal services		3.00%	3.00%	3.00%	3.00%	3.00%
Contracted services		3.00%	3.00%	3.00%	3.00%	3.00%
Lab/chemical supplies		3.00%	3.00%	3.00%	3.00%	3.00%
Mapping expense		3.00%	3.00%	3.00%	3.00%	3.00%
Sludge disposal		5.00%	5.00%	5.00%	5.00%	5.00%
Water tests		3.00%	3.00%	3.00%	3.00%	3.00%
Miscellaneous expense		3.00%	3.00%	3.00%	3.00%	3.00%
System subsidy		3.00%	3.00%	3.00%	3.00%	3.00%
Pettit property maintenance		3.00%	3.00%	3.00%	3.00%	3.00%
Oregon garden operations		3.00%	3.00%	3.00%	3.00%	3.00%
Minor equipment		3.00%	3.00%	3.00%	3.00%	3.00%
Shop improvements		3.00%	3.00%	3.00%	3.00%	3.00%
Software		3.00%	3.00%	3.00%	3.00%	3.00%
Total materials and services						
Capital Outlays:						
Capital replacement		3.00%	3.00%	3.00%	3.00%	3.00%
Capital - NEW		3.00%	3.00%	3.00%	3.00%	3.00%
Total capital outlays						
Contingencies and Reserves:						
Contingency		3.00%	3.00%	3.00%	3.00%	3.00%
Reserve for debt service		3.00%	3.00%	3.00%	3.00%	3.00%
Total contingency and reserves						
Transfers OUT:						
Transfer to General Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Sewer Reimbursement SDC Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Water Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Debt Service Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Reserve Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Building Reserve Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to WWTP Digester Project Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to JWTF Sewer LID Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Fleet Replacement Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Major Equipment Replacement Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Transfer to Extended Leave Fund		3.00%	3.00%	3.00%	3.00%	3.00%
Total transfers OUT						
Estimated Equivalent Dwelling Units (EDUs)	6,257	6,378	6,502	6,627	6,756	6,887
Unit System Development Charge per EDU:						
Improvement	1,920	1,920	1,920	1,920	1,920	1,920
Reimbursement	2,472	2,472	2,472	2,472	2,472	2,472
Total	4,392	4,392	4,392	4,392	4,392	4,392
Total SDC revenue forecast:						
Improvement		232,691	237,198	241,792	246,476	251,250
Reimbursement		299,589	305,392	311,308	317,338	323,484
Total		532,280	542,590	553,100	563,813	574,734
Reserve Policy:						
Working Capital (contingency in the operating fund) - 30 days of sewer system operating expenses.						
Sanitary Sewer Reserve Fund - 1% of water system fixed assets.						

Wastewater Improvement Fee SDC Fund Forecast

City of Silverton Statement of Cash Flow and Changes in Fund Balance - Sanitary Sewer Improvement SDC Fund									
Line Item Description	Actual			Budget	Forecast				
	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sources of Funds									
Beginning Fund Balance:									
Calculated beginning fund balance	321,838	289,370	393,579	131,024	9,082	58,493	60,967	63,462	65,977
Contingency	-	-	-	-	41,956	-	-	-	-
Auditor's adjustments	-	-	-	-	-	-	-	-	-
Net beginning fund balance	321,838	289,370	393,579	131,024	51,038	58,493	60,967	63,462	65,977
Revenues:									
Miscellaneous revenue:									
Interest earned	6,062	17,538	13,407	15,000	2,250	2,345	2,441	2,538	2,635
Improvement SDCs	208,918	444,340	239,807	250,000	232,691	237,198	241,792	246,476	251,250
Total miscellaneous revenue	214,980	461,878	253,213	265,000	234,941	239,543	244,233	249,013	253,885
Total Sources of Funds	\$ 536,818	\$ 751,248	\$ 646,792	\$ 396,024	\$ 285,979	\$ 298,036	\$ 305,201	\$ 312,475	\$ 319,862
Uses of Funds									
Materials and Services:									
Contracted services	-	-	-	10,000	-	-	-	-	-
UST Cleanup	48,778	-	-	-	-	-	-	-	-
Total materials and services	48,778	-	-	10,000	-	-	-	-	-
Capital Outlays:									
Developer SDC credits	-	32,072	94,130	50,000	51,750	53,561	55,436	57,376	59,384
Total capital outlays	-	32,072	94,130	50,000	51,750	53,561	55,436	57,376	59,384
Contingencies and Reserves:									
Contingency	-	-	-	41,956	-	-	-	-	-
Total contingency and reserves	-	-	-	41,956	-	-	-	-	-
Transfers OUT:									
Transfer to General Fund	25,580	20,597	21,638	24,986	25,736	26,508	27,303	28,122	28,966
Transfer to Sewer Operating Fund	-	-	-	-	150,000	157,000	159,000	161,000	163,000
Transfer to Sewer Reimbursement SDC Fund	73,090	-	-	-	-	-	-	-	-
Transfer to WWTP Digester Project Fund	100,000	305,000	200,000	260,000	-	-	-	-	-
Transfer to JWTF Sewer LID Fund	-	-	200,000	-	-	-	-	-	-
Fund balance in support of master plan projects	-	-	-	-	-	-	-	-	-
Total transfers OUT	198,670	325,597	421,638	284,986	175,736	183,508	186,303	189,122	191,966
Total Expenditures	247,448	357,669	515,768	386,942	227,486	237,069	241,739	246,498	251,350
Unappropriated Ending Fund Balance	289,370	393,579	131,024	9,082	58,493	60,967	63,462	65,977	68,512
Total Uses of Funds	\$ 536,818	\$ 751,248	\$ 646,792	\$ 396,024	\$ 285,979	\$ 298,036	\$ 305,201	\$ 312,475	\$ 319,862

Wastewater Reimbursement Fee SDC Fund Forecast

City of Silverton Statement of Cash Flow and Changes in Fund Balance - Sanitary Sewer Reimbursement SDC Fund									
Line Item Description	Actual			Budget	Forecast				
	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sources of Funds									
Beginning Fund Balance:									
Calculated beginning fund balance	860,740	1,005,667	801,641	146,945	12,246	55,650	119,641	216,908	208,459
Contingency	-	-	-	-	11,337	-	-	-	-
Auditor's adjustments	-	-	-	-	-	-	-	-	-
Net beginning fund balance	860,740	1,005,667	801,641	146,945	23,583	55,650	119,641	216,908	208,459
Revenues:									
Miscellaneous revenue:									
Interest earned	18,934	40,604	22,378	30,000	2,140	4,602	8,343	8,018	8,267
Reimbursement SDCs	128,631	325,547	209,866	180,000	299,589	305,392	311,308	317,338	323,484
Total miscellaneous revenue	147,565	366,151	232,244	210,000	301,730	309,994	319,650	325,355	331,751
Transfers IN:									
Transfer from Sewer Operating Fund	-	-	-	100,000	-	-	-	-	-
Transfer from Street Improvement SDC Fund	100,000	-	-	-	-	-	-	-	-
Transfer from Sewer Improvement SDC Fund	73,090	-	-	-	-	-	-	-	-
Total transfers IN	173,090	-	-	100,000	-	-	-	-	-
Total Sources of Funds	\$ 1,181,395	\$ 1,371,818	\$ 1,033,885	\$ 456,945	\$ 325,313	\$ 365,644	\$ 439,291	\$ 542,264	\$ 540,211
Uses of Funds									
Capital Outlays:									
Treatment plant equipment	-	-	-	10,000	-	-	-	-	-
Developer credits	-	23,987	-	-	-	-	-	-	-
Sheridan - South 2nd sewer rehab pjt	6,351	99,635	198,672	-	-	-	-	-	-
Westfield, Welch, & Phelps sewer rehab pjt	-	-	-	380,000	-	-	-	-	-
Total capital outlays	6,351	123,622	198,672	390,000	-	-	-	-	-
Contingencies and Reserves:									
Contingency	-	-	-	11,337	-	-	-	-	-
Total contingency and reserves	-	-	-	11,337	-	-	-	-	-
Transfers OUT:									
Transfer to General Fund	41,958	37,835	38,268	43,362	44,663	46,003	47,383	48,804	50,268
Transfer to Sewer Operating Fund	127,419	-	-	-	225,000	200,000	175,000	285,000	275,000
Transfer to WWTP Digester Project Fund	-	408,720	-	-	-	-	-	-	-
Transfer to JWTF Sewer LID Fund	-	-	650,000	-	-	-	-	-	-
Fund balance in support of master plan projects	-	-	-	-	-	-	-	-	-
Total transfers OUT	169,377	446,555	688,268	43,362	269,663	246,003	222,383	333,804	325,268
Total Expenditures	175,728	570,177	886,940	444,699	269,663	246,003	222,383	333,804	325,268
Unappropriated Ending Fund Balance	1,005,667	801,641	146,945	12,246	55,650	119,641	216,908	208,459	214,942
Total Uses of Funds	\$ 1,181,395	\$ 1,371,818	\$ 1,033,885	\$ 456,945	\$ 325,313	\$ 365,644	\$ 439,291	\$ 542,264	\$ 540,211

Wastewater Operating Fund Forecast

City of Silverton Statement of Cash Flow and Changes in Fund Balance - Sanitary Sewer Operating Fund									
Line Item Description	Actual			Budget	Forecast				
	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sources of Funds									
Beginning Fund Balance:									
Calculated beginning fund balance	364,363	577,268	632,370	939,608	117,335	703,749	703,749	703,749	703,749
Contingency	-	-	-	-	239,157	-	-	-	-
Reserve for debt service	-	-	-	-	347,257	-	-	-	-
Auditor's adjustments	-	(7,169)	-	-	-	-	-	-	-
Net beginning fund balance	364,363	570,099	632,370	939,608	703,749	703,749	703,749	703,749	703,749
Revenues:									
Fees and permits:									
Sewer service charges	1,863,587	2,086,026	2,342,443	2,450,000	2,526,372	2,611,888	2,700,310	2,794,368	2,879,513
Inspection fees	37,068	1,775	96,607	70,000	45,150	46,505	47,900	49,337	50,817
Recording fees	9	-	-	-	-	-	-	-	-
Septage fees	110	-	-	500	-	-	-	-	-
Total fees and permits	1,900,774	2,087,801	2,439,051	2,520,500	2,571,522	2,658,392	2,748,210	2,843,705	2,930,330
Miscellaneous revenue:									
Interest earned	11,299	23,619	38,068	20,000	22,952	22,952	22,952	22,952	22,952
Miscellaneous revenue	2,784	1,786	9,500	3,000	4,690	4,831	4,975	5,125	5,279
Rental receipts	15,245	20,700	6,900	14,400	14,282	14,710	15,151	15,606	16,074
Tourism taxes - Oregon Garden Hotel	-	-	-	-	30,000	30,000	30,000	30,000	30,000
Land sale payments - Oregon Garden Hotel	-	-	-	-	77,000	77,000	77,000	77,000	77,000
Total miscellaneous revenue	29,328	46,105	54,468	37,400	148,923	149,493	150,079	150,683	151,305
Transfers IN:									
Sewer reimbursement SDC Fund	127,419	-	-	-	225,000	200,000	175,000	285,000	275,000
Sewer improvement SDC Fund	-	-	-	-	150,000	157,000	159,000	161,000	163,000
Total transfers IN	127,419	-	-	-	375,000	357,000	334,000	446,000	438,000
Total Sources of Funds	\$ 2,421,884	\$ 2,704,005	\$ 3,125,888	\$ 3,497,508	\$ 3,799,195	\$ 3,868,634	\$ 3,936,038	\$ 4,144,137	\$ 4,223,384
Uses of Funds									
Personal Services:									
Full time salaries	388,530	397,650	441,689	466,312	480,301	494,710	509,552	524,838	540,583
Part time salaries	6,422	7,419	5,505	13,975	14,394	14,826	15,271	15,729	16,201
Worker's compensation insurance	8,812	9,800	16,269	19,060	20,204	21,416	22,701	24,063	25,507
Social security/Medicare	30,862	30,996	34,558	37,882	39,018	40,189	41,395	42,637	43,916
Health insurance	60,551	66,904	73,962	88,659	99,298	111,214	124,560	139,507	156,247
Life/disability insurance	1,499	1,485	1,682	2,003	2,063	2,125	2,189	2,254	2,322
PERS retirement	33,555	51,951	56,934	46,893	48,300	50,715	53,251	55,913	58,709
Overtime salaries	10,022	13,408	13,658	14,899	15,348	15,806	16,281	16,769	17,272
Total personal services	540,053	579,513	644,256	689,683	718,925	751,001	785,197	821,710	860,757
Materials and Services:									
Office supplies	1,896	3,133	2,903	2,700	2,781	2,864	2,950	3,039	3,130
Publications	449	450	92	400	412	424	437	450	464
Advertising expense	361	842	543	500	515	530	546	563	580
Telephone expense	10,398	10,131	10,320	10,500	10,815	11,139	11,474	11,818	12,172
Postage & freight	3,592	6,115	5,229	6,900	7,107	7,320	7,540	7,766	7,999
Gas/electric expense	128,287	137,399	158,055	169,000	174,070	179,292	184,671	190,211	195,917
Permit fees	75	6,835	3,544	7,000	7,210	7,426	7,649	7,879	8,115
Travel, training & meetings	3,388	5,851	4,052	4,500	4,635	4,774	4,917	5,065	5,217
Dues & memberships	1,225	1,448	1,111	1,400	1,442	1,485	1,530	1,576	1,623
Equipment maintenance	36,150	38,870	47,533	45,000	46,350	47,741	49,173	50,648	52,167
Vehicle expense	8,020	9,018	10,378	10,000	10,300	10,609	10,927	11,255	11,593
Recording fees	196	232	60	200	206	212	219	225	232
Traffic control supplies	-	111	(1,512)	500	515	530	546	563	580
Lift station maintenance	1,435	16,653	546	8,400	8,652	8,912	9,179	9,454	9,738
Safety equipment/protective clothing	3,037	1,629	1,563	2,100	2,163	2,228	2,295	2,364	2,434
Building/grounds maintenance	8,599	11,440	10,353	6,000	6,180	6,365	6,556	6,753	6,956
Small tools	1,605	456	674	1,200	1,236	1,273	1,311	1,351	1,391
Equipment rental	2,029	1,727	6,937	5,000	5,150	5,305	5,464	5,628	5,796
Sewer system maintenance	27,455	5,462	5,045	7,500	27,725	28,557	29,413	30,296	31,205
Legal services	225	-	-	-	-	-	-	-	-
Contracted services	11,867	24,898	19,393	50,550	32,067	33,028	34,019	35,040	36,091
Lab/chemical supplies	20,290	23,890	16,616	30,000	30,900	31,827	32,782	33,765	34,778
Mapping expense	6,358	3,903	-	-	-	-	-	-	-
Sludge disposal	42,127	39,379	51,159	57,000	59,850	62,843	65,985	69,284	72,748
Water tests	16,852	16,686	21,862	23,000	23,690	24,401	25,133	25,887	26,663
Miscellaneous expense	-	171	356	400	412	424	437	450	464
System subsidy	170	(324)	1,271	500	515	530	546	563	580
Pettit property maintenance	937	4,840	2,627	6,000	6,180	6,365	6,556	6,753	6,956
Oregon garden operations	-	23,689	4,767	50,000	51,500	53,045	54,636	56,275	57,964
Minor equipment	1,333	3,622	1,512	-	-	-	-	-	-
Shop improvements	9,625	-	-	-	-	-	-	-	-
Software	-	-	720	2,000	2,060	2,122	2,185	2,251	2,319
Total materials and services	349,981	398,256	387,907	508,250	524,638	541,574	559,078	577,170	595,870
Capital Outlays:									
Capital replacement	3,560	33,722	31,216	24,200	24,926	25,674	26,444	27,237	28,054
Capital - NEW	-	1,444	-	-	-	-	-	-	-
Total capital outlays	3,560	35,166	31,216	24,200	24,926	25,674	26,444	27,237	28,054
Contingencies and Reserves:									
Contingency	-	-	-	239,157	-	-	-	-	-
Reserve for debt service	-	-	-	347,257	-	-	-	-	-
Total contingency and reserves	-	-	-	586,414	-	-	-	-	-
Transfers OUT:									
Transfer to General Fund	277,007	321,188	359,453	420,551	433,168	446,163	459,547	473,334	487,534
Transfer to Sewer Reimbursement SDC Fund	-	-	-	100,000	-	-	-	-	-
Transfer to Water Fund	9,750	3,301	5,550	46,050	6,200	6,386	6,578	6,775	6,979
Transfer to Debt Service Fund	70,066	75,229	73,755	74,224	76,451	78,744	81,107	83,540	86,046
Transfer to Reserve Fund	26,247	-	-	-	-	-	-	-	-
Transfer to Building Reserve Fund	-	25,000	20,000	40,000	41,200	42,436	43,709	45,020	46,371
Transfer to WWTP Digester Project Fund	-	50,000	50,000	225,000	-	-	-	-	-
Transfer to JWVF Sewer LID Fund	-	-	-	50,000	-	-	-	-	-
Transfer to Fleet Replacement Fund	-	8,190	8,541	9,734	10,026	10,327	10,637	10,956	11,284
Transfer to Major Equipment Replacement Fund	-	19,275	22,442	22,545	23,221	23,918	24,636	25,375	26,136
Transfer to Extended Leave Fund	6,592	7,362	1,950	2,297	2,366	2,437	2,510	2,585	2,663
Total transfers OUT	389,662	509,565	541,691	990,401	592,632	610,411	628,723	647,885	667,012
Debt Service:									
OEDD 1997 bond 5.14% & 6.00% - principal	60,160	60,837	80,047	81,615	87,883	94,445	96,109	102,879	109,760
OEDD 1997 bond 5.14% & 6.00% - interest	64,604	45,142	57,878	56,203	51,986	47,363	42,321	37,106	31,480
USDA RUS 2000 bond 5.13% - principal	19,614	20,619	21,676	22,787	23,995	25,183	26,473	27,830	29,256
USDA RUS 2000 bond 5.13% - interest	99,483	97,935	96,878	95,773	94,605	93,377	92,087	90,730	89,304
USDA RUS 2000 loan 4.88% - principal	55,211	57,902	60,725	63,686	66,790	70,046	73,461	77,042	80,798
USDA RUS 2000 loan 4.88% - interest	252,261	248,299	245,423	242,478	239,374	236,118	232,703	229,122	225,366
USDA RUS 2005 loan 4.38% - principal	-	3,370	3,518	3,672	3,833	4,001	4,176	4,358	4,549
USDA RUS 2005 loan 4.38% - interest	10,027	15,131	15,065	15,011	14,850	14,683	14,507	14,325	14,134
Debt Service on New Serial Revenue Bonds	-	-	-	-	651,009	651,009	651,009	783,294	783,294
Total debt service	561,360	549,035	581,209	581,225	1,234,325	1,236,225	1,232,846	1,366,686	1,367,941
Total Expenditures	1,844,616	2,071,635	2,186,280	3,380,173	3,095,445	3,164,885	3,232,288	3,440,387	3,519,635
Unappropriated Ending Fund Balance	577,268	632,370	939,608	117,335	703,749	703,749	703,749	703,749	703,749
Total Uses of Funds	\$ 2,421,884	\$ 2,704,005	\$ 3,125,888	\$ 3,497,508	\$ 3,799,195	\$ 3,868,634	\$ 3,936,038	\$ 4,144,137	\$ 4,223,384

Wastewater System Revenue Requirements Forecast

City of Silverton PRELIMINARY Projection of Sanitary Sewer Operating Fund Revenue Requirements									
	Actual			Budget	Forecast				
	2005	2006	2007	2008	2009	2010	2011	2012	2013
Projection of Cash Flow:									
Fees and permits:									
Sewer service charges	1,863,587	2,086,026	2,342,443	2,450,000	2,450,000	2,526,372	2,611,888	2,700,310	2,794,368
Inspection fees	37,068	1,775	96,607	70,000	45,150	46,505	47,900	49,337	50,817
Recording fees	9	-	-	-	-	-	-	-	-
Septage fees	110	-	-	500	-	-	-	-	-
Miscellaneous revenue:									
Interest earned	11,299	23,619	38,068	20,000	22,952	22,952	22,952	22,952	22,952
Miscellaneous revenue	2,784	1,786	9,500	3,000	4,690	4,831	4,975	5,125	5,279
Rental receipts	15,245	20,700	6,900	14,400	14,282	14,710	15,151	15,606	16,074
Tourism taxes - Oregon Garden Hotel	-	-	-	-	30,000	30,000	30,000	30,000	30,000
Land sale payments - Oregon Garden Hotel	-	-	-	-	77,000	77,000	77,000	77,000	77,000
Transfers IN:									
Sewer reimbursement SDC Fund	127,419	-	-	-	225,000	200,000	175,000	285,000	275,000
Sewer improvement SDC Fund	-	-	-	-	150,000	157,000	159,000	161,000	163,000
Subtotal Gross Revenues	2,057,521	2,133,906	2,493,518	2,557,900	3,019,074	3,079,369	3,143,866	3,346,329	3,434,489
less: Operations & Maintenance Expense	893,594	1,013,035	1,063,380	1,222,133	1,268,488	1,318,249	1,370,719	1,426,117	1,484,682
less: Transfers OUT	389,662	509,565	541,691	990,401	592,632	610,411	628,723	647,585	667,012
less: Debt Service - existing	561,360	549,035	581,209	581,225	583,316	585,216	581,837	583,392	584,647
less: Debt Service - new	-	-	-	-	651,009	651,009	651,009	783,294	783,294
less: Use of Operating Fund balance	-	-	-	(236,000)	-	-	-	-	-
Net Cash	212,905	62,271	307,238	141	(76,372)	(85,516)	(88,422)	(94,058)	(85,145)
Net Deficiency/(Surplus)	(212,905)	(62,271)	(307,238)	(141)	76,372	85,516	88,422	94,058	85,145
Test of Coverage Requirement:									
Operations and maintenance expense	893,594	1,013,035	1,063,380	1,222,133	1,268,488	1,318,249	1,370,719	1,426,117	1,484,682
Transfers out	389,662	509,565	541,691	990,401	592,632	610,411	628,723	647,585	667,012
Debt service - existing	561,360	549,035	581,209	581,225	583,316	585,216	581,837	583,392	584,647
Debt service - new	-	-	-	-	651,009	651,009	651,009	783,294	783,294
Additional Coverage Required:	0%	-	-	-	-	-	-	-	-
Total Revenue Required with Coverage	1,844,616	2,071,635	2,186,280	2,793,759	3,095,445	3,164,885	3,232,288	3,440,387	3,519,635
Gross Revenues Allowable for Coverage Test:									
Fees and permits:									
Sewer service charges	1,900,774	2,087,801	2,439,051	2,520,500	2,495,150	2,572,876	2,659,787	2,749,647	2,845,185
Miscellaneous revenue:	29,328	46,105	54,468	37,400	148,923	149,493	150,079	150,683	151,305
Transfers IN	127,419	-	-	-	375,000	357,000	334,000	446,000	438,000
System Development Charges:									
Improvement	208,918	444,340	239,807	250,000	232,691	237,198	241,792	246,476	251,250
Reimbursement	128,631	325,547	209,866	180,000	299,589	305,392	311,308	317,338	323,484
Gross Revenues Allowable for Coverage Test	2,395,070	2,903,793	2,943,191	2,987,900	3,551,354	3,621,959	3,696,966	3,910,143	4,009,224
Coverage Recognized	1.98	2.52	2.30	1.33	1.37	1.37	1.38	1.34	1.36
Coverage Required	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Net Deficiency/(Surplus)	(550,454)	(832,158)	(756,911)	(194,141)	(455,908)	(457,074)	(464,678)	(469,755)	(489,589)
Projection of Revenue Sufficiency:									
Maximum Deficiency	-	-	-	-	76,372	85,516	88,422	94,058	85,145
Percent Increase Required Over Current Rate Revenues - Use SDCs and OR Garden Revenues				0.00%	3.12%	3.38%	3.39%	3.48%	3.05%
Revenues Recovered From Existing Rates				2,450,000	2,450,000	2,526,372	2,611,888	2,700,310	2,794,368
add: Revenues Recovered From Rate Increase				-	76,372	85,516	88,422	94,058	85,145
Total Revenues Recovered From Rates after Increase				2,450,000	2,526,372	2,611,888	2,700,310	2,794,368	2,879,513

Wastewater System Capital Improvement Plan Forecast

City of Silverton Summary of Sanitary Sewer System Capital Improvement Plan				
Cost Escalation Rate		3.50%		
Cost in FY 2008	Year	Project	Notes/Comments	Future Total
		Collection System Improvements		-
	2008	IMP-1 (Westfield street capacity)	In FY08 budget	-
	2008	IMP-2 (Oregon Garden lift station capacity)	Developer financed	-
215,000	2020	IMP-3 (South James street capacity)		324,880
70,000	2020	IMP-4 (Sherman street capacity)		105,775
284,000	2020	IMP-5 (Adams street capacity)		429,143
70,000	2010	IMP-6 (Schlador street condition)		74,986
40,000	2010	IMP-7 (Lone Oaks street condition)		42,849
85,000	2010	IMP-8 (Third street condition)		91,054
46,000	2010	IMP-9 (Meat packers/high school condition)		49,276
4,375	2009	Condition assessment program - forecast year 1		4,528
300,000	2010	Rehab projects as a result of year 1 condition assessment program		321,368
4,375	2010	Condition assessment program - forecast year 2		4,687
300,000	2011	Rehab projects as a result of year 2 condition assessment program		332,615
4,375	2011	Condition assessment program - forecast year 3		4,851
300,000	2012	Rehab projects as a result of year 3 condition assessment program		344,257
4,375	2012	Condition assessment program - forecast year 4		5,020
300,000	2013	Rehab projects as a result of year 4 condition assessment program		356,306
4,375	2013	Condition assessment program - forecast year 5		5,196
300,000	2014	Rehab projects as a result of year 5 condition assessment program		368,777
		Additional Pump Stations		-
	2008	PMP-1 James street pump station	In FY08 budget	-
	2009	PMP-2 Pine street pump station	LID funded	-
	2020	PMP-3 Setness lane pump station	LID funded	-
		Wastewater Treatment Plant Improvements		-
	2008	Thermodynamic model update		-
	2008	Wetland optimization study		-
30,000	2010	Laboratory/admin facility schematic design		32,137
		<i>Project 1 - Phase 1 biosolids expansion</i>		-
293,000	2009	Sitework		303,255
84,000	2009	Concrete		86,940
-	2009	Masonry		-
8,000	2009	Metals		8,280
10,000	2009	Wood & plastics		10,350
-	2009	Thermal & moisture protection		-
4,600	2009	Doors & windows		4,761
10,000	2009	Finishes		10,350
1,000	2009	Specialties		1,035
1,505,000	2009	Equipment		1,557,675
-	2009	Furnishings		-
405,000	2009	Special construction		419,175
151,900	2009	Conveying systems		157,217
75,000	2009	Mechanical		77,625
214,000	2009	Electrical		221,490
625,000	2009	Dewatering/lime stabilization building		646,875
677,000	2009	Estimator's contingency		700,695
284,445	2009	Escalation to mid-point of construction		294,401
813,000	2009	Contractor's overhead and profit, Mob and bonds		841,455
250,000	2009	Engineering, admin., and legal		258,750
		<i>Project 2 - Phase 2 biosolids handling & equipment upgrades/lab & admin addition</i>		-
160,000	2010	Design		171,396
935,864	2010	Construction		1,002,521
		<i>Project 3 - Aeration system upgrade</i>		-
325,000	2015	Project 3 - Aeration system upgrade		413,491
163,000	2015	Project 4 Secondary treatment stress testing/rerating		207,382
400,000	2014	Project 5 - Effluent filtration upgrade		491,702
\$9,756,684		Net Construction Cost		\$10,784,524

Wastewater System Capital Funding Plan Forecast

City of Silverton Summary of Funding Options for Sanitary Sewer Capital Improvements						
Assumptions: Fund Earnings % 4.50% Issuance Cost: Short-Term 1.00% Long-Term: Revenue Bonds 1.00% G.O. Bonds 1.00%		Interim Financing: BANs Used? (1=Y,0=N) 0 BAN Interest Rate: 4.50% Long-Term Financing: Revenue Bonds: Life of Debt (Years) 20 Interest Rate 4.50% Coverage Factor Required 1.00 Fund Reserve from Proceeds? (1=Y,0=N) 1 General Obligation Bonds: Life of Debt (Years) 20 Interest Rate 4.50% Fund Reserve from Proceeds? (1=Y,0=N) 1				
Fiscal Year	2008	2009	2010	2011	2012	2013
Type of Long Term Debt Issued (1=Y,0=N):						
Revenue Bonds	1	1	1	1	1	1
General Obligation Bonds	0	0	0	0	0	0
Capital Improvements Financing	2008	2009	2010	2011	2012	2013
Capital Costs to be Funded	-	7,732,595	-	-	1,571,258	-
less: Contributions form improvement SDCs	-	-	-	-	-	-
less: Contributions from reimbursement SDCs	-	-	-	-	-	-
less: Contributions From Utility Rates	-	-	-	-	-	-
less: Capital Fund Contribution	-	-	-	-	-	-
Amount to be Financed	-	7,732,595	-	-	1,571,258	-
Interim Borrowing:						
BANs Issued:	-	-	-	-	-	-
less: Borrowing Cost	-	-	-	-	-	-
less: Interest Payments	-	-	-	-	-	-
plus: Interest Earnings	-	-	-	-	-	-
Net Available from BANS	-	-	-	-	-	-
Long-term Borrowing:						
Revenue Bonds:						
Amount Borrowed	-	8,468,287	-	-	1,720,750	-
less: Financing Cost	-	84,683	-	-	17,208	-
less: Reserve Funding	-	651,009	-	-	132,285	-
less: Refunding of BANs	-	-	-	-	-	-
Net Funds from Revenue Bonds	-	7,732,595	-	-	1,571,258	-
General Obligation Bonds:						
Amount Borrowed	-	-	-	-	-	-
less: Financing Cost	-	-	-	-	-	-
less: Reserve Funding	-	-	-	-	-	-
less: Refunding of BANs	-	-	-	-	-	-
Net Funds from G.O. Bonds	-	-	-	-	-	-
New Annual Debt Service:						
Debt Service	-	651,009	651,009	651,009	783,294	783,294
Coverage	-	-	-	-	-	-
Reserve Funding	-	-	-	-	-	-



Technical Appendix D – Wastewater System Rate Model Output

Wastewater System Functional Cost Allocation Template

City of Silvertown Revenue Requirements Allocation Template - Wastewater								
	Fiscal 08 Budget	Flow (Q)	Strength of Discharge		Customer Accounts	Industrial Pre-treatment	Total	Comment
			BOD	TSS				
Gross Revenue Requirements:								
Personal Services:								
Full time salaries	466,312	60.00%	22.55%	17.45%			100.00%	Assign 60% to flow and 40% to load based on plant loadings
Part time salaries	13,975	60.00%	22.55%	17.45%			100.00%	Assign 60% to flow and 40% to load based on plant loadings
Worker's compensation insurance	19,080	60.00%	22.55%	17.45%			100.00%	Assign 60% to flow and 40% to load based on plant loadings
Social security/medicare	37,882	60.00%	22.55%	17.45%			100.00%	Assign 60% to flow and 40% to load based on plant loadings
Health insurance	88,659	60.00%	22.55%	17.45%			100.00%	Assign 60% to flow and 40% to load based on plant loadings
Life/disability insurance	2,003	60.00%	22.55%	17.45%			100.00%	Assign 60% to flow and 40% to load based on plant loadings
PERS retirement	46,893	60.00%	22.55%	17.45%			100.00%	Assign 60% to flow and 40% to load based on plant loadings
Overtime salaries	14,899	60.00%	22.55%	17.45%			100.00%	Assign 60% to flow and 40% to load based on plant loadings
Materials and Services:								
Office supplies	2,700				100.00%		100.00%	100% to customer accounts
Publications	400				100.00%		100.00%	100% to customer accounts
Advertising expense	500				100.00%		100.00%	100% to customer accounts
Telephone expense	10,500				100.00%		100.00%	100% to customer accounts
Postage & freight	6,900				100.00%		100.00%	100% to customer accounts
Gas/electric expense	169,000	80.00%	11.27%	8.73%			100.00%	Per conversation with Steve S. 80% flow 20% strength
Permit fees	7,000				100.00%		100.00%	100% to customer accounts
Travel, training & meetings	4,500				100.00%		100.00%	100% to customer accounts
Dues & memberships	1,400				100.00%		100.00%	100% to customer accounts
Equipment maintenance	45,000	20.00%	45.10%	34.90%			100.00%	Per observed spending pattern for this item
Vehicle expense	10,000	100.00%					100.00%	100% to flow - directly related to collection system
Recording fees	200				100.00%		100.00%	100% to customer accounts
Traffic control supplies	500	100.00%					100.00%	100% to flow - directly related to collection system
Lift station maintenance	8,400	100.00%					100.00%	100% to flow - directly related to collection system
Safety equipment/protective clothing	2,100	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Building/grounds maintenance	6,000	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Small tools	1,200	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Equipment rental	5,000	100.00%					100.00%	Assign 50% to flow and 50% to load based on plant loadings
Sewer system maintenance	7,500	100.00%					100.00%	100% to flow - directly related to collection system
Legal services					100.00%		100.00%	100% to customer accounts
Contracted services	50,550	100.00%					100.00%	100% to flow - directly related to collection system
Lab/chemical supplies	30,000	20.00%	45.10%	34.90%			100.00%	Per Steve S. - 80% strength - 20% flow
Mapping expense		100.00%					100.00%	100% to flow - directly related to collection system
Sludge disposal	57,000		56.37%	43.63%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Water tests	23,000	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Miscellaneous expense	400	100.00%					100.00%	100% to flow - directly related to collection system
System subsidy	500	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Pettit property maintenance	6,000	100.00%					100.00%	100% to flow - directly related to collection system
Oregon garden operations	50,000	100.00%					100.00%	100% to flow - directly related to collection system
Minor equipment		50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Shop improvements		100.00%					100.00%	100% to flow - directly related to collection system
Software	2,000	100.00%					100.00%	100% to flow - directly related to collection system
Capital Outlays:								
Capital replacement	24,200		75.00%	14.09%	10.91%		100.00%	Per Steve S. - 75% flow, 25% strength
Capital - NEW			50.00%	28.19%	21.81%		100.00%	Assign 50% to flow and 50% to load based on plant loadings
Contingencies and Reserves:								
Contingency	239,157	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Reserve for debt service	347,257	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Transfers OUT:								
Transfer to General Fund	420,551				100.00%		100.00%	100% to customer accounts (pure overhead)
Transfer to Sewer Reimbursement SDC Fund	100,000	100.00%					100.00%	100% to flow - directly related to collection system
Transfer to Water Fund	46,050	100.00%					100.00%	100% to flow - directly related to collection system
Transfer to Debt Service Fund	74,224	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Transfer to Reserve Fund		50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Transfer to Building Reserve Fund	40,000	100.00%					100.00%	100% to flow - directly related to collection system for future shop bldg
Transfer to WWTP Digester Project Fund	225,000	60.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Transfer to JWWF Sewer LID Fund	60,000	100.00%					100.00%	100% to flow - directly related to collection system
Transfer to Fleet Replacement Fund	9,734	100.00%					100.00%	100% to flow - directly related to collection system
Transfer to Major Equipment Replacement Fund	22,545	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Transfer to Extended Leave Fund	2,297	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Debt Service:								
OEDD 1997 bond 5.14% & 6.00% - principal	61,615	100.00%					100.00%	Purpose - Effluent pipeline construction
OEDD 1997 bond 5.14% & 6.00% - interest	56,203	100.00%					100.00%	Purpose - Effluent pipeline construction
USDA RUS 2000 bond 5.13% - principal	22,787	60.00%	22.55%	17.45%			100.00%	Purpose - For hydraulic capacity and liquids treatment system improvements
USDA RUS 2000 bond 5.13% - interest	95,773	60.00%	22.55%	17.45%			100.00%	Purpose - For hydraulic capacity and liquids treatment system improvements
USDA RUS 2000 loan 4.88% - principal	63,686	60.00%	22.55%	17.45%			100.00%	Purpose - For hydraulic capacity and liquids treatment system improvements
USDA RUS 2000 loan 4.88% - interest	242,478	60.00%	22.55%	17.45%			100.00%	Purpose - For hydraulic capacity and liquids treatment system improvements
USDA RUS 2005 loan 4.38% - principal	3,672	60.00%	22.55%	17.45%			100.00%	Purpose - For hydraulic capacity and liquids treatment system improvements
USDA RUS 2005 loan 4.38% - interest	15,011	60.00%	22.55%	17.45%			100.00%	Purpose - For hydraulic capacity and liquids treatment system improvements
Debt Service on New Serial Revenue Bonds		20.00%	45.10%	34.90%			100.00%	Purpose - For Phase I biosolids handling system construction
Subtotal Gross Revenue Requirements	3,380,173							
Revenue Offsets:								
Fees and permits:								
Inspection fees	70,000	100.00%					100.00%	100% to flow - directly related to collection system
Recording fees		100.00%					100.00%	100% to flow - directly related to collection system
Septage fees	500		56.37%	43.63%			100.00%	100% to treatment
Miscellaneous revenue:								
Interest earned	20,000	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Miscellaneous revenue	3,000	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Rental receipts	14,490	50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Tourism taxes - Oregon Garden Hotel		50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Land sale payments - Oregon Garden Hotel		50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Transfers IN:								
Sewer reimbursement SDC Fund		50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Sewer improvement SDC Fund		50.00%	28.19%	21.81%			100.00%	Assign 50% to flow and 50% to load based on plant loadings
Subtotal Revenue Offsets								
Net Revenues Required From Rates								
Net Revenue Requirements Allocations								

Wastewater System Revenue Requirements Forecast

Imported Revenue Requirements from the Wastewater Revenue Requirements Model						
	Budget 2008	2009	2010	Forecast 2011	2012	2013
Gross Revenue Requirements:						
Personal Services:						
Full time salaries	466,312	480,301	494,710	509,552	524,838	540,583
Part time salaries	13,975	14,394	14,826	15,271	15,729	16,201
Worker's compensation insurance	19,060	20,204	21,416	22,701	24,063	25,507
Social security/medicare	37,882	39,018	40,189	41,395	42,637	43,916
Health insurance	88,659	99,298	111,214	124,560	139,507	156,247
Life/disability insurance	2,003	2,063	2,125	2,189	2,254	2,322
PERS retirement	46,893	48,300	50,715	53,251	55,913	58,709
Overtime salaries	14,899	15,346	15,806	16,281	16,769	17,272
Materials and Services:						
Office supplies	2,700	2,781	2,864	2,950	3,039	3,130
Publications	400	412	424	437	450	464
Advertising expense	500	515	530	546	563	580
Telephone expense	10,500	10,815	11,139	11,474	11,818	12,172
Postage & freight	6,900	7,107	7,320	7,540	7,766	7,999
Gas/electric expense	169,000	174,070	179,292	184,671	190,211	195,917
Permit fees	7,000	7,210	7,426	7,649	7,879	8,115
Travel, training & meetings	4,500	4,635	4,774	4,917	5,065	5,217
Dues & memberships	1,400	1,442	1,485	1,530	1,576	1,623
Equipment maintenance	45,000	46,350	47,741	49,173	50,648	52,167
Vehicle expense	10,000	10,300	10,609	10,927	11,255	11,593
Recording fees	200	206	212	219	225	232
Traffic control supplies	500	515	530	546	563	580
Lift station maintenance	8,400	8,652	8,912	9,179	9,454	9,738
Safety equipment/protective clothing	2,100	2,163	2,228	2,295	2,364	2,434
Building/grounds maintenance	6,000	6,180	6,365	6,556	6,753	6,956
Small tolls	1,200	1,236	1,273	1,311	1,351	1,391
Equipment rental	5,000	5,150	5,305	5,464	5,628	5,796
Sewer system maintenance	7,500	27,725	28,557	29,413	30,296	31,205
Legal services	-	-	-	-	-	-
Contracted services	50,550	32,067	33,028	34,019	35,040	36,091
Lab/chemical supplies	30,000	30,900	31,827	32,782	33,765	34,778
Mapping expense	-	-	-	-	-	-
Sludge disposal	57,000	59,850	62,843	65,985	69,284	72,748
Water tests	23,000	23,690	24,401	25,133	25,887	26,663
Miscellaneous expense	400	412	424	437	450	464
System subsidy	500	515	530	546	563	580
Pettit property maintenance	6,000	6,180	6,365	6,556	6,753	6,956
Oregon garden operations	50,000	51,500	53,045	54,636	56,275	57,964
Minor equipment	-	-	-	-	-	-
Shop improvements	-	-	-	-	-	-
Software	2,000	2,060	2,122	2,185	2,251	2,319
Capital Outlays:						
Capital replacement	24,200	24,926	25,674	26,444	27,237	28,054
Capital - NEW	-	-	-	-	-	-
Contingencies and Reserves:						
Contingency	239,157	-	-	-	-	-
Reserve for debt service	347,257	-	-	-	-	-
Transfers OUT:						
Transfer to General Fund	420,551	433,168	446,163	459,547	473,334	487,534
Transfer to Sewer Reimbursement SDC Fund	100,000	-	-	-	-	-
Transfer to Water Fund	46,050	6,200	6,386	6,578	6,775	6,979
Transfer to Debt Service Fund	74,224	76,451	78,744	81,107	83,540	86,046
Transfer to Reserve Fund	-	-	-	-	-	-
Transfer to Building Reserve Fund	40,000	41,200	42,436	43,709	45,020	46,371
Transfer to WWTP Digester Project Fund	225,000	-	-	-	-	-
Transfer to JWTF Sewer LID Fund	50,000	-	-	-	-	-
Transfer to Fleet Replacement Fund	9,734	10,026	10,327	10,637	10,956	11,284
Transfer to Major Equipment Replacement Fund	22,545	23,221	23,918	24,636	25,375	26,136
Transfer to Extended Leave Fund	2,297	2,366	2,437	2,510	2,585	2,663
Debt Service:						
OEDD 1997 bond 5.14% & 6.00% - principal	81,615	87,883	94,445	96,109	102,878	109,760
OEDD 1997 bond 5.14% & 6.00% - interest	56,203	51,986	47,363	42,321	37,106	31,480
USDA RUS 2000 bond 5.13% - principal	22,787	23,995	25,183	26,473	27,830	29,256
USDA RUS 2000 bond 5.13% - interest	95,773	94,605	93,377	92,087	90,730	89,304
USDA RUS 2000 loan 4.88% - principal	63,686	66,790	70,046	73,461	77,042	80,798
USDA RUS 2000 loan 4.88% - interest	242,478	239,374	236,118	232,703	229,122	225,366
USDA RUS 2005 loan 4.38% - principal	3,672	3,833	4,001	4,176	4,358	4,549
USDA RUS 2005 loan 4.38% - interest	15,011	14,850	14,683	14,507	14,325	14,134
Debt Service on New Serial Revenue Bonds	-	651,009	651,009	651,009	783,294	783,294
Subtotal Gross Revenue Requirements	3,380,173	3,095,445	3,164,885	3,232,288	3,440,387	3,519,635
Revenue Offsets:						
Fees and permits:						
Inspection fees	70,000	45,150	46,505	47,900	49,337	50,817
Inspection fees	-	-	-	-	-	-
Inspection fees	500	-	-	-	-	-
Miscellaneous revenue:						
Interest earned	20,000	22,952	22,952	22,952	22,952	22,952
Miscellaneous revenue	3,000	4,690	4,831	4,975	5,125	5,279
Rental receipts	14,400	14,282	14,710	15,151	15,606	16,074
Tourism taxes - Oregon Garden Hotel	-	30,000	30,000	30,000	30,000	30,000
Land sale payments - Oregon Garden Hotel	-	77,000	77,000	77,000	77,000	77,000
Transfers IN:						
Sewer reimbursement SDC Fund	-	225,000	200,000	175,000	285,000	275,000
Sewer improvement SDC Fund	-	150,000	157,000	159,000	161,000	163,000
Subtotal Revenue Offsets	107,900	569,074	552,997	531,979	646,019	640,121
Net Revenues Required From Rates	\$ 3,272,273	\$ 2,526,372	\$ 2,611,888	\$ 2,700,310	\$ 2,794,368	\$ 2,879,513

Functional Cost Allocation of Wastewater System Revenue Requirements

City of Silverton Revenue Requirements Allocation Template - Wastewater								
	Flow (Q)	Strength of Discharge		Customer Accounts	Industrial Pre-treatment	Total	Checksum	Checksum Error
		BOD	TSS					
Forecast Year: 2008								
Gross Revenue Requirements:								
Personal Services:	413,810	155,511	120,362	-	-	689,683	689,683	-
Materials and Services:	306,950	94,252	72,948	34,100	-	508,250	508,250	-
Capital Outlays:	18,150	3,410	2,640	-	-	24,200	24,200	-
Contingencies and Reserves:	293,207	165,283	127,924	-	-	586,414	586,414	-
Transfers OUT:	430,317	78,656	60,877	420,551	-	990,401	990,401	-
Debt Service:	403,862	99,980	77,382	-	-	581,225	581,225	-
Subtotal Gross Revenue Requirements	1,866,296	597,092	462,134	454,651	-	3,380,173	3,380,173	-
Revenue Offsets:								
Fees and permits:	70,000	282	218	-	-	70,500	70,500	-
Miscellaneous revenue:	18,700	10,541	8,159	-	-	37,400	37,400	-
Transfers IN:	-	-	-	-	-	-	-	-
Subtotal Revenue Offsets	88,700	10,823	8,377	-	-	107,900	107,900	-
Net Revenues Required From Rates	\$ 1,777,596	\$ 586,269	\$ 453,757	\$ 454,651	\$ -	\$ 3,272,273	\$ 3,272,273	-
Forecast Year: 2009								
Gross Revenue Requirements:								
Personal Services:	431,355	162,105	125,465	-	-	718,925	718,925	-
Materials and Services:	316,159	97,722	75,634	35,123	-	524,638	524,638	-
Capital Outlays:	18,695	3,513	2,719	-	-	24,926	24,926	-
Contingencies and Reserves:	-	-	-	-	-	-	-	-
Transfers OUT:	108,445	28,760	22,259	433,168	-	592,632	592,632	-
Debt Service:	536,139	393,572	304,615	-	-	1,234,325	1,234,325	-
Subtotal Gross Revenue Requirements	1,410,792	685,671	530,692	468,291	-	3,095,445	3,095,445	-
Revenue Offsets:								
Fees and permits:	45,150	-	-	-	-	45,150	45,150	-
Miscellaneous revenue:	74,462	41,975	32,487	-	-	148,923	148,923	-
Transfers IN:	187,500	105,695	81,805	-	-	375,000	375,000	-
Subtotal Revenue Offsets	307,112	147,669	114,292	-	-	569,074	569,074	-
Net Revenues Required From Rates	\$ 1,103,680	\$ 538,001	\$ 416,399	\$ 468,291	\$ -	\$ 2,526,372	\$ 2,526,372	-
Forecast Year: 2010								
Gross Revenue Requirements:								
Personal Services:	450,601	169,338	131,063	-	-	751,001	751,001	-
Materials and Services:	325,643	101,328	78,425	36,177	-	541,574	541,574	-
Capital Outlays:	19,255	3,618	2,800	-	-	25,674	25,674	-
Contingencies and Reserves:	-	-	-	-	-	-	-	-
Transfers OUT:	111,699	29,622	22,927	446,163	-	610,411	610,411	-
Debt Service:	538,055	393,563	304,608	-	-	1,236,225	1,236,225	-
Subtotal Gross Revenue Requirements	1,445,253	697,469	539,824	482,339	-	3,164,885	3,164,885	-
Revenue Offsets:								
Fees and permits:	46,505	-	-	-	-	46,505	46,505	-
Miscellaneous revenue:	74,746	42,135	32,611	-	-	149,493	149,493	-
Transfers IN:	178,500	100,621	77,879	-	-	357,000	357,000	-
Subtotal Revenue Offsets	299,751	142,756	110,490	-	-	552,997	552,997	-
Net Revenues Required From Rates	\$ 1,145,502	\$ 554,713	\$ 429,334	\$ 482,339	\$ -	\$ 2,611,888	\$ 2,611,888	-
Forecast Year: 2011								
Gross Revenue Requirements:								
Personal Services:	471,118	177,048	137,031	-	-	785,197	785,197	-
Materials and Services:	335,413	105,077	81,327	37,262	-	559,078	559,078	-
Capital Outlays:	19,833	3,727	2,884	-	-	26,444	26,444	-
Contingencies and Reserves:	-	-	-	-	-	-	-	-
Transfers OUT:	115,050	30,511	23,615	459,547	-	628,723	628,723	-
Debt Service:	534,676	393,563	304,608	-	-	1,232,846	1,232,846	-
Subtotal Gross Revenue Requirements	1,476,090	709,925	549,464	496,809	-	3,232,288	3,232,288	-
Revenue Offsets:								
Fees and permits:	47,900	-	-	-	-	47,900	47,900	-
Miscellaneous revenue:	75,039	42,300	32,739	-	-	150,079	150,079	-
Transfers IN:	167,000	94,139	72,861	-	-	334,000	334,000	-
Subtotal Revenue Offsets	289,939	136,439	105,600	-	-	531,979	531,979	-
Net Revenues Required From Rates	\$ 1,186,150	\$ 573,486	\$ 443,864	\$ 496,809	\$ -	\$ 2,700,310	\$ 2,700,310	-
Forecast Year: 2012								
Gross Revenue Requirements:								
Personal Services:	493,026	185,281	143,403	-	-	821,710	821,710	-
Materials and Services:	345,475	108,973	84,342	38,380	-	577,170	577,170	-
Capital Outlays:	20,428	3,838	2,971	-	-	27,237	27,237	-
Contingencies and Reserves:	-	-	-	-	-	-	-	-
Transfers OUT:	118,501	31,427	24,323	473,334	-	647,585	647,585	-
Debt Service:	562,688	453,218	350,780	-	-	1,366,686	1,366,686	-
Subtotal Gross Revenue Requirements	1,540,118	782,737	605,819	511,714	-	3,440,387	3,440,387	-
Revenue Offsets:								
Fees and permits:	49,337	-	-	-	-	49,337	49,337	-
Miscellaneous revenue:	75,341	42,470	32,871	-	-	150,683	150,683	-
Transfers IN:	223,000	125,706	97,294	-	-	446,000	446,000	-
Subtotal Revenue Offsets	347,678	168,177	130,165	-	-	646,019	646,019	-
Net Revenues Required From Rates	\$ 1,192,440	\$ 614,560	\$ 475,654	\$ 511,714	\$ -	\$ 2,794,368	\$ 2,794,368	-
Forecast Year: 2013								
Gross Revenue Requirements:								
Personal Services:	516,454	194,085	150,217	-	-	860,757	860,757	-
Materials and Services:	355,839	113,023	87,477	39,531	-	595,870	595,870	-
Capital Outlays:	21,041	3,954	3,060	-	-	28,054	28,054	-
Contingencies and Reserves:	-	-	-	-	-	-	-	-
Transfers OUT:	122,056	32,369	25,053	487,534	-	667,012	667,012	-
Debt Service:	563,943	453,218	350,780	-	-	1,367,941	1,367,941	-
Subtotal Gross Revenue Requirements	1,579,333	796,650	616,587	527,065	-	3,519,635	3,519,635	-
Revenue Offsets:								
Fees and permits:	50,817	-	-	-	-	50,817	50,817	-
Miscellaneous revenue:	75,652	42,646	33,007	-	-	151,305	151,305	-
Transfers IN:	219,000	123,452	95,548	-	-	438,000	438,000	-
Subtotal Revenue Offsets	345,469	166,097	128,555	-	-	640,121	640,121	-
Net Revenues Required From Rates	\$ 1,233,864	\$ 630,553	\$ 488,032	\$ 527,065	\$ -	\$ 2,879,513	\$ 2,879,513	-

Forecast of Flow, Load and Customer Accounts

	BOD mg/l	TSS mg/l	2008				2009				2010			
			Q (Ccf)	BOD (lbs)	TSS (lbs)	Accounts	Q (Ccf)	BOD (lbs)	TSS (lbs)	Accounts	Q (Ccf)	BOD (lbs)	TSS (lbs)	Accounts
Standard conversion factors: (mg/l) --> (lbs/ccf) 0.00624														
Flow (Q) reconciliation:														
Customer contributions:														
Inside City:														
Residential (based on winter average)	200	200	277,122	345,848	345,848	2,609	282,221	352,211	352,211	2,657	287,413	358,691	358,691	2,706
Commercial (based on annual metered flow):														
Commercial I	200	200	46,091	57,521	57,521	195	46,939	58,580	58,580	199	47,803	59,658	59,658	202
Commercial II	600	600	13,109	49,081	49,081	16	13,350	49,983	49,983	16	13,596	50,903	50,903	17
Commercial III	1,000	1,000	6,104	38,091	38,091	7	6,217	38,792	38,792	7	6,331	39,506	39,506	7
Industrial	864	582	28,921	155,882	105,036	2	29,453	158,749	106,969	2	29,995	161,670	108,937	2
Subtotal Commercial			94,226	300,575	249,730	220	95,959	306,105	254,324	224	97,725	311,737	259,003	228
Inside City total			371,348	646,423	595,578	2,829	378,180	658,316	606,536	2,881	385,138	670,428	617,695	2,934
Outside City:														
Residential (based on winter average)	200	200	283	353	353	7	288	360	360	7	294	367	367	7
Commercial (based on annual metered flow):														
Commercial I	200	200	-	-	-	-	-	-	-	-	-	-	-	-
Commercial II	600	600	-	-	-	-	-	-	-	-	-	-	-	-
Commercial III	1,000	1,000	-	-	-	-	-	-	-	-	-	-	-	-
Industrial	864	582	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Commercial			-	-	-	-	-	-	-	-	-	-	-	-
Outside City total			283	353	353	7	288	360	360	7	294	367	367	7
Total customer contributions metered			371,631	646,777	595,932	2,836	378,468	658,676	606,896	2,888	385,431	670,795	618,061	2,941
Infiltration and inflow contributions			281,858	403,013	216,579		287,044	410,428	220,564		292,325	417,979	224,622	
Totals to the headworks of the plant			653,489	1,049,790	812,511		665,512	1,069,104	827,460		677,756	1,088,774	842,683	
Checksum			653,489	1,049,790	812,511		665,512	1,069,104	827,460		677,756	1,088,774	842,683	
Checksum error			-	-	-		-	-	-		-	-	-	

	BOD mg/l	TSS mg/l	2011				2012				2013			
			Q (Ccf)	BOD (lbs)	TSS (lbs)	Accounts	Q (Ccf)	BOD (lbs)	TSS (lbs)	Accounts	Q (Ccf)	BOD (lbs)	TSS (lbs)	Accounts
Standard conversion factors: (mg/l) --> (lbs/ccf) 0.00624														
Flow (Q) reconciliation:														
Customer contributions:														
Inside City:														
Residential (based on winter average)	200	200	292,701	365,291	365,291	2,756	298,086	372,011	372,011	2,806	303,570	378,855	378,855	2,858
Commercial (based on annual metered flow):														
Commercial I	200	200	48,682	60,755	60,755	206	49,578	61,873	61,873	210	50,490	63,011	63,011	214
Commercial II	600	600	13,846	51,840	51,840	17	14,101	52,793	52,793	17	14,360	53,765	53,765	18
Commercial III	1,000	1,000	6,448	40,233	40,233	7	6,566	40,973	40,973	8	6,687	41,727	41,727	8
Industrial	864	582	30,547	164,645	110,941	2	31,109	167,674	112,982	2	31,681	170,759	115,061	2
Subtotal Commercial			99,523	317,472	263,769	232	101,354	323,313	268,621	237	103,218	329,261	273,564	241
Inside City total			392,223	682,763	629,059	2,988	399,440	695,324	640,633	3,043	406,789	708,117	652,419	3,099
Outside City:														
Residential (based on winter average)	200	200	299	373	373	7	305	380	380	8	310	387	387	8
Commercial (based on annual metered flow):														
Commercial I	200	200	-	-	-	-	-	-	-	-	-	-	-	-
Commercial II	600	600	-	-	-	-	-	-	-	-	-	-	-	-
Commercial III	1,000	1,000	-	-	-	-	-	-	-	-	-	-	-	-
Industrial	864	582	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Commercial			-	-	-	-	-	-	-	-	-	-	-	-
Outside City total			299	373	373	7	305	380	380	8	310	387	387	8
Total customer contributions metered			392,523	683,136	629,432	2,995	399,744	695,704	641,013	3,051	407,099	708,504	652,806	3,107
Infiltration and inflow contributions			297,703	425,669	228,755		303,180	433,501	232,963		308,758	441,476	237,249	
Totals to the headworks of the plant			690,226	1,108,805	858,187		702,924	1,129,205	873,976		715,857	1,149,980	890,056	
Checksum			690,226	1,108,805	858,187		702,924	1,129,205	873,976		715,857	1,149,980	890,056	
Checksum error			-	-	-		-	-	-		-	-	-	

Forecast of Flow and Strength Unit Charges

	Flow Ccf	Flow %	Flow \$	BOD lbs	BOD %	BOD \$	TSS lbs	TSS %	TSS \$
2008 Revenue Requirement			\$ 1,777,596			\$ 586,269			\$ 453,757
Customer contributions:									
Residential	277,405	74.65%	\$ 4,7832	346,202	53.53%	\$ 1,1312	346,202	58.09%	\$ 0,9503
Commercial I	46,091	12.40%	\$ 4,7832	57,521	8.89%	\$ 1,1312	57,521	9.65%	\$ 0,9503
Commercial II	13,109	3.53%	\$ 4,7832	49,081	7.59%	\$ 3,3937	49,081	8.24%	\$ 2,8508
Commercial III	6,104	1.64%	\$ 4,7832	38,091	5.89%	\$ 5,6562	38,091	6.39%	\$ 4,7513
Industrial	28,921	7.78%	\$ 4,7832	155,882	24.10%	\$ 141,298	105,036	17.63%	\$ 79,977
Customer Contribution	371,631	100.00%		646,777	100.00%		595,932	100.00%	
Checksum	371,631			646,777			595,932		
2009 Revenue Requirement			\$ 1,103,680			\$ 538,001			\$ 416,399
Customer contributions:									
Residential	282,509	74.65%	\$ 2,9162	352,571	53.53%	\$ 1,0194	352,571	58.09%	\$ 0,8563
Commercial I	46,939	12.40%	\$ 2,9162	58,580	8.89%	\$ 1,0194	58,580	9.65%	\$ 0,8563
Commercial II	13,350	3.53%	\$ 2,9162	49,983	7.59%	\$ 3,0581	49,983	8.24%	\$ 2,5688
Commercial III	6,217	1.64%	\$ 2,9162	38,792	5.89%	\$ 5,0968	38,792	6.39%	\$ 4,2814
Industrial	29,453	7.78%	\$ 2,9162	158,749	24.10%	\$ 129,665	106,969	17.63%	\$ 73,393
Customer Contribution	378,468	100.00%		658,676	100.00%		606,896	100.00%	
Checksum	378,468			658,676			606,896		
2010 Revenue Requirements			\$ 1,145,502			\$ 554,713			\$ 429,334
Customer contributions:									
Residential	287,707	74.65%	\$ 2,9720	359,058	53.53%	\$ 1,0320	359,058	58.09%	\$ 0,867
Commercial I	47,803	12.40%	\$ 2,9720	59,658	8.89%	\$ 1,0320	59,658	9.65%	\$ 0,867
Commercial II	13,596	3.53%	\$ 2,9720	50,903	7.59%	\$ 3,0961	50,903	8.24%	\$ 2,601
Commercial III	6,331	1.64%	\$ 2,9720	39,506	5.89%	\$ 5,1602	39,506	6.39%	\$ 4,335
Industrial	29,995	7.78%	\$ 2,9720	161,670	24.10%	\$ 133,693	108,937	17.63%	\$ 75,673
Customer Contribution	385,431	100.00%		670,795	100.00%		618,061	100.00%	
Checksum	385,431			670,795			618,061		
2011 Revenue Requirements			\$ 1,186,150			\$ 573,486			\$ 443,864
Customer contributions:									
Residential	293,000	74.65%	\$ 3,0219	365,664	53.53%	\$ 1,0477	365,664	58.09%	\$ 0,880
Commercial I	48,682	12.40%	\$ 3,0219	60,755	8.89%	\$ 1,0477	60,755	9.65%	\$ 0,880
Commercial II	13,846	3.53%	\$ 3,0219	51,840	7.59%	\$ 3,1431	51,840	8.24%	\$ 2,640
Commercial III	6,448	1.64%	\$ 3,0219	40,233	5.89%	\$ 5,2384	40,233	6.39%	\$ 4,400
Industrial	30,547	7.78%	\$ 3,0219	164,645	24.10%	\$ 138,218	110,941	17.63%	\$ 78,234
Customer Contribution	392,523	100.00%		683,136	100.00%		629,432	100.00%	
Checksum	392,523			683,136			629,432		
2012 Revenue Requirements			\$ 1,192,440			\$ 614,560			\$ 475,654
Customer contributions:									
Residential	298,390	74.65%	\$ 2,9830	372,391	53.53%	\$ 1,1024	372,391	58.09%	\$ 0,926
Commercial I	49,578	12.40%	\$ 2,9830	61,873	8.89%	\$ 1,1024	61,873	9.65%	\$ 0,926
Commercial II	14,101	3.53%	\$ 2,9830	52,793	7.59%	\$ 3,3073	52,793	8.24%	\$ 2,778
Commercial III	6,566	1.64%	\$ 2,9830	40,973	5.89%	\$ 5,5122	40,973	6.39%	\$ 4,630
Industrial	31,109	7.78%	\$ 2,9830	167,674	24.10%	\$ 148,117	112,982	17.63%	\$ 83,837
Customer Contribution	399,744	100.00%		695,704	100.00%		641,013	100.00%	
Checksum	399,744			695,704			641,013		
2013 Revenue Requirements			\$ 1,233,864			\$ 630,553			\$ 488,032
Customer contributions:									
Residential	303,880	74.65%	\$ 3,0309	379,243	53.53%	\$ 1,1107	379,243	58.09%	\$ 0,933
Commercial I	50,490	12.40%	\$ 3,0309	63,011	8.89%	\$ 1,1107	63,011	9.65%	\$ 0,933
Commercial II	14,360	3.53%	\$ 3,0309	53,765	7.59%	\$ 3,3321	53,765	8.24%	\$ 2,799
Commercial III	6,687	1.64%	\$ 3,0309	41,727	5.89%	\$ 5,5535	41,727	6.39%	\$ 4,665
Industrial	31,681	7.78%	\$ 3,0309	170,759	24.10%	\$ 151,971	115,061	17.63%	\$ 86,018
Customer Contribution	407,099	100.00%		708,504	100.00%		652,806	100.00%	
Checksum	407,099			708,504			652,806		

Forecast of Wastewater Commodity (Use) Charge

City of Silverton, Oregon Wastewater Rate Study Update - 2008 Schedule of Commodity (Use) Charges						
	2008	2009	2010	2011	2012	2013
Residential						
Sanitary flow and I&I	4.78323	2.91618	2.97200	3.02187	2.98301	3.03087
Strength - BOD	1.13125	1.01936	1.03203	1.04768	1.10244	1.11069
Strength - TSS	0.95026	0.85627	0.86692	0.88007	0.92606	0.93299
Total - \$/Ccf	6.86473	4.79180	4.87095	4.94962	5.01151	5.07456
Commercial I						
Sanitary flow and I&I	4.78323	2.91618	2.97200	3.02187	2.98301	3.03087
Strength - BOD	1.13125	1.01936	1.03203	1.04768	1.10244	1.11069
Strength - TSS	0.95026	0.85627	0.86692	0.88007	0.92606	0.93299
Total - \$/Ccf	6.86473	4.79180	4.87095	4.94962	5.01151	5.07456
Commercial II						
Sanitary flow and I&I	4.78323	2.91618	2.97200	3.02187	2.98301	3.03087
Strength - BOD	3.39374	3.05807	3.09610	3.14305	3.30732	3.33208
Strength - TSS	2.85078	2.56881	2.60075	2.64020	2.77818	2.79898
Total - \$/Ccf	11.02774	8.54306	8.66885	8.80512	9.06850	9.16193
Commercial III						
Sanitary flow and I&I	4.78323	2.91618	2.97200	3.02187	2.98301	3.03087
Strength - BOD	5.65623	5.09678	5.23842	5.23842	5.51219	5.55346
Strength - TSS	4.75129	4.28135	4.40033	4.40033	4.63030	4.66497
Total - \$/Ccf	15.19075	12.29431	12.61075	12.66062	13.12550	13.24930
Industrial						
Sanitary flow and I&I - \$/Ccf	4.78323	2.91618	2.97200	3.02187	2.98301	3.03087
BOD - \$/lb	0.90645	0.81679	0.82695	0.83949	0.88336	0.88998
TSS - \$/lb	0.76143	0.68611	0.69465	0.70518	0.74204	0.74759

Forecast of Wastewater Customer Accounts (Base) Charge

City of Silverton, Oregon Wastewater System Rate Study Update 2008 Calculation of Customer Account (Base) Charge						
	2008	2009	2010	2011	2012	2013
Customer accounts revenue requirement	454,651	468,291	482,339	496,809	511,714	527,065
Number of equivalent accounts:						
Inside City	2,829	2,881	2,934	2,988	3,043	3,099
Outside City	11	11	11	11	11	12
Total equivalent accounts	2,840	2,892	2,945	2,999	3,054	3,110
Number of equivalent bills per year:						
Inside City	33,948	34,573	35,209	35,856	36,516	37,188
Outside City	126	128	131	133	136	138
Total equivalent bills	34,074	34,701	35,339	35,990	36,652	37,326
Base charge:						
Monthly						
Inside City	\$ 13.39	\$ 13.55	\$ 13.70	\$ 13.86	\$ 14.01	\$ 14.17
Outside City	\$ 20.09	\$ 20.32	\$ 20.55	\$ 20.78	\$ 21.02	\$ 21.26

Proposed Schedule of Wastewater Rates

City of Silverton, Oregon Wastewater Rate Study Update - 2008 Schedule of Current and Recommended Wastewater Rates ¹						
Line Item Description	Current Rates	Forecast				
		2009	2010	2011	2012	2013
<i>Customer Account Service (BASE) Charges:</i>						
Inside City monthly	5.87000	13.54514	13.69945	13.85552	14.01337	14.17301
<i>Commodity (USE) Charges:</i>						
Residential						
Sanitary flow and I&I		2.91618	2.97200	3.02187	2.98301	3.03087
Strength - BOD		1.01936	1.03203	1.04768	1.10244	1.11069
Strength - TSS		0.85627	0.86692	0.88007	0.92606	0.93299
Total - \$/Ccf	5.38000	4.79180	4.87095	4.94962	5.01151	5.07456
Commercial I						
Sanitary flow and I&I		2.91618	2.97200	3.02187	2.98301	3.03087
Strength - BOD		1.01936	1.03203	1.04768	1.10244	1.11069
Strength - TSS		0.85627	0.86692	0.88007	0.92606	0.93299
Total - \$/Ccf	5.38000	4.79180	4.87095	4.94962	5.01151	5.07456
Commercial II						
Sanitary flow and I&I		2.91618	2.97200	3.02187	2.98301	3.03087
Strength - BOD		3.05807	3.09610	3.14305	3.30732	3.33208
Strength - TSS		2.56881	2.60075	2.64020	2.77818	2.79898
Total - \$/Ccf	6.53000	8.54306	8.66885	8.80512	9.06850	9.16193
Commercial III						
Sanitary flow and I&I		2.91618	2.97200	3.02187	2.98301	3.03087
Strength - BOD		5.09678	5.23842	5.23842	5.51219	5.55346
Strength - TSS		4.28135	4.40033	4.40033	4.63030	4.66497
Total - \$/Ccf	8.71000	12.29431	12.61075	12.66062	13.12550	13.24930
Industrial						
Sanitary flow and I&I - \$/Ccf	N/A	2.91618	2.97200	3.02187	2.98301	3.03087
BOD - \$/lb	N/A	0.81679	0.82695	0.83949	0.88336	0.88998
TSS - \$/lb	N/A	0.68611	0.69465	0.70518	0.74204	0.74759

¹ Per §13.56.110 of the Silverton Municipal Code: "Schedule S-2 (Outside Corporate Limits). One and one-half times the rates of similar classifications in Schedule S-1 (Inside Corporate Limits)..."



Technical Appendix E – SDC Eligibility Analysis

To: Steve Donovan, President, Donovan Enterprises, Inc.	
From: Mark M. Smith, P.E.	Project:
CC:	
Date: 1/3/08	Job 76022 No:
Re: City of Silverton Wastewater Capital Project, SDC Eligible Costs	

The following is a breakdown of the capacity, improvement and benefited property drivers for the capital improvement projects that were recommended in the 2007 City of Silverton Wastewater Facility Master Plan (WWFMP). The goal of this memo is to provide background justification for assigning capacity-increasing components of existing and future projects that will be recoverable by the City with Sewer Development Charges (SDC). SDC charges are based on recommended wastewater system improvements that are driven by future population growth.

The recommended wastewater system capital projects are organized in this memo in the following three categories:

- Collection system improvements
- Additional pump stations
- Wastewater treatment plant improvements

For ease of reference, within each of these three categories, several sub-categories are identified that served as the basis for the project recommendations. A brief description of each recommended project and the technical basis for its having been recommended is presented. Also, the percentage breakdowns of the technical drivers (i.e., growth, replacement, benefited properties) that form the basis for each recommendation are presented. Acronyms such as “IMP” and “PMP” are used in this memo to provide consistency with those used in the Facility Master Plan to identify specific projects. Finally, a table that summarizes the percentage breakdowns for each recommended project is provided.

COLLECTION SYSTEM IMPROVEMENTS

Capacity-based Improvements

During the development of the WWFMP, HDR constructed and ran a computer model of the entire City of Silverton wastewater collection system. The system model generates inflow hydrographs and analyzes the major conveyance components. The conveyance components include eight pump stations, one diversion, and the trunk and interceptor gravity sewers. The pipe and manhole data used for model construction was extracted from a GIS database and used in the model. After the physical representation of the system was constructed in the model, the

dry-weather sanitary flows, inflow and infiltration and major industrial flows (from Bruce Pac, Quest, and future industrial developments) were imported into the model.

Using projected population, land use information and GIS tools, a population factor (people per acre) was estimated for the City of Silverton's residential and commercial land uses. The population flow factor was determined for the existing population, the 2030 projected population and the ultimate build-out population. This analysis resulted in the following capacity-based capital improvement recommendations:

- IMP-1 (Westfield Street sewer)
- IMP-2 (Oregon Garden lift station)
- IMP-3 (South James Street sewer)
- IMP-4 (Sherman Street sewer)
- IMP-5 (Adams Street sewer)

Due to the identified capacity shortfalls predicted for the pipes and lift station and the likely improvement in service following upgrades of them, HDR suggests that 80% of the driver for these projects is due to expected population growth and 20% is due to the corresponding service improvement property benefits that will result from such upgrades. Details of this analysis are provided in Chapter 8 of the WWFMP.

Condition Assessment-based Improvements

During the development of the WWFMP, Leak Busters, Inc. carried out an electro-scan study of approximately 6,000 feet of sanitary sewer pipe using the Metrotech Focused Electrode Leak Location system (FELL-41™) to assist with leakage assessment of sanitary sewers. The pipes tested were 8-to 18-inch diameter vitreous clay pipe (VCP) sanitary sewers. Access to the sewers was through manholes with an average separation of 350 feet and depth of 8 feet. Details of this analysis are provided in Chapter 6 of the WWFMP.

Due to the severity of the pipe condition in each reach of sewer, the following four gravity sewer pipe capital projects were identified as a result of the electro-scan study:

- IMP-6 (Schlador Street)
- IMP-7 (Lone Oaks Street)
- IMP-8 (Third Street)
- IMP-9 (Meat Packers/High School)

Due to the poor existing condition of these gravity sewer pipes and the likely improvement in service following rehabilitation, HDR suggests that 80% of the driver for these projects is due to the need for condition-related replacement and 20% is due to corresponding property benefit.

Condition Assessment Program

A five year condition assessment program was recommended in the 2007 WWFMP for the Silverton wastewater collection system. This was deemed necessary to fill in gaps in existing collection system condition information. Pipe age and pipe materials were used as the primary criteria to rank various pipe segments according to the relative priority that condition assessment should commence for each. Details of this analysis are provided in Chapter 8 of the WWFMP. Due to the potential for future replacement

needs that this condition assessment program could reveal and the potential for service improvement, HDR suggests that that 50% of the driver for these projects is due to the potential for condition-related upgrades and 50% is due to the corresponding service improvement property benefits that would result from such upgrades.

Additional Pump Stations

In addition to the pipeline improvements identified in the WWFMP, the City identified the following locations for three new pump stations to serve future growth areas within the Urban Growth Boundary (UGB):

- PMP-1 (James Street Pump Station)
- PMP-2 (Pine Street Pump Station)
- PMP-3 (Setness Lane Pump Station)

HDR suggests that that 80% of the driver for these projects is due to the potential for growth within the identified UGB and 20% is due to the corresponding service improvement property benefits that would result from such construction.

WASTEWATER TREATMENT PLANT IMPROVEMENTS

Each of the following projects and studies is described in detail in Chapters 9 and 7 of the WWFMP. The existing system conditions are discussed in Chapter 7 and treatment plant planning is discussed in Chapter 9.

Various Studies and Projects

Various wastewater treatment-related projects and studies were identified in the WWFMP related to effluent temperature management and laboratory facility upgrades. These include the following:

- Upgrade thermodynamic model of subsurface effluent discharge to the property adjacent to the wastewater treatment plant
- Conduct study to optimize performance of Oregon Garden Wetland for temperature reduction and water quality improvement
- Wastewater treatment plant laboratory space, office space, HVAC and locker room upgrades schematic design.

The temperature model and study recommendations were made based on the City's need to meet an excess thermal load limit during the summer season. Recommendations were based on the calculated thermal load limits that will become effective upon expiration of the City's permit, but may be modified through implementation of the Molalla-Pudding TMDL. The two temperature reduction-related recommendations involve the discharge of reuse water to the property adjacent to the wastewater treatment plant and the Oregon Garden Wetland, respectively. A significant property benefit exists in the ultimate successful use of these methods of temperature reduction, both in terms of the two prosperities themselves receiving reuse water as well as the corresponding quality improvements to surrounding waterways as a result of the reduction of high temperature effluent discharge. HDR therefore suggests that that 80% of the driver for these projects is attributable to the property benefit, both in terms of the benefit that would be

realized by using reuse water and the maintenance of public well-being resulting from the discharge of a higher quality effluent. 20% of the project driver is due to the potential for increases in thermal loading that would accompany future population growth.

Improvements to the lab and administrative building are required to support the staff functions required for efficient long-term operation and maintenance of the treatment plant. Such improvements are directly related to the need to replace and upgrade existing equipment so that plant staff can operate the plant in an effective manner for the public welfare. HDR therefore suggests that that 80% of the driver for this project is attributable to the need to replace existing equipment and facilities and 20% is due to the potential for property benefit that would accompany the use of an upgraded facility.

Project 1 - Phase 1 Biosolids Expansion, Secondary Treatment Process Optimization, Effluent Pumping

This treatment plant project will consist of the following general components:

- Solids/effluent pumping expansion
 - Pre-design
 - Design
 - Construction
- Process Optimization

Specific Phase 1 capacity-related biosolids improvements would include the following:

- Recycle pump station improvements
- Dewatering/lime stabilization facility and related process equipment upgrades
- Conversion to a thickened sludge blend tank
- Related odor control
- Covered open-air sludge storage

As shown in Chapter 9 of the WWFMP, The most critical element of the solids handling process that requires improvements is the solids stabilization system. The side stream recycle pump station improvements were identified as necessary based on the current condition of the two pumps that run continuously. HDR therefore suggests that that 5% of the driver for this project is related to equipment related condition issues and 5% is due to the increased use of such a facility due to population growth. The existing biosolids lagoon, currently used for dewatering, was identified in the WWFMP as under capacity and overloaded; therefore HDR suggests that 30% of the overall costs for the Phase 1 dewatering facility portion of this project are attributable to loading and growth issues. As pointed out in the WWFMP, upgrading to lime stabilization would result in a biosolids product that would be a valuable Class A commodity to local farmers. HDR therefore suggests that 15% of the cost of this portion of the project is driven by the property benefit that would be realized by the availability of a high grade, Class A fertilizer. 15% of this cost would be driven by the need for an effective facility due to increased loading related to growth. The sludge blending tank conversion would be necessary to ensure a high quality biosolids output. HDR therefore suggests that 5% of the cost of this portion of the

project is driven by the property benefit that would be realized by the availability of a high grade, Class A fertilizer. 5% of this cost would be driven by the need for an effective facility due to increased loading related to growth. Odor control was identified for this project in the WWFMP. This is typically used to reduce the potential for nuisance to the public. HDR therefore suggests that 5% of the cost for this portion of the project is driven by the property benefit and continued maintenance of public well-being that would be realized by the use of odor control and 10% of this cost would be driven by the greater need for odor control due to the potential for increased complaints as a result of an increase in growth (i.e. an increase in receptors). Covered sludge storage was identified in the WWFMP as necessary to maintain a dry product during the wet season. HDR therefore suggests that 5% of the cost of this portion of the project is driven by the property benefit that would be realized by the continuous availability of a high grade, Class A fertilizer.

A summary breakdown of the Phase 1 percentage cost drivers is presented in Table 1.

Table 1

City of Silverton, WWFMP Project 1 Cost Driver Breakdown

Facility	Project 1 Drivers		
	% Due to Replacement	% Due to Growth	% Due to Benefited Properties
Recycle Pump Station	5	5	
Dewatering Facility		30	
Lime Stab. Facility		15	15
Sludge Blending Tank		5	5
Odor Control		10	5
Covered Solids Storage			5
¹ Totals	5	65	30

1 - These totals are shown in the "Pre-design", "Design" and "Construction" line items of the "Biosolids Expansion" section in Table 2.

The wastewater treatment process can be optimized to gain additional treatment capacity. In order to optimize the process for improved performance and increased capacity, some process control improvements are necessary. As described in Chapter 9 of the WWFMP, the secondary treatment system is currently equipped with basic process control and monitoring equipment. This level of control is adequate under current flows and loads; however once influent flow and loading begin to approach design levels, the lack of better control will be limiting to both effluent quality and treatment capacity. The process optimization portion of this project would include upgrades and installation of alkalinity feed control; aeration control and online ammonia analyzers. HDR therefore suggests that that 80% of the driver for this project is attributable to the need to accommodate future growth-related capacity requirements and 20% is due to the

corresponding property benefit that would result from continued well-being of the public welfare.

Project 2 - Phase 2 Biosolids Handling, Lab and Administration Facilities Upgrades

This project includes upgrading the following treatment plant elements:

- Primary sludge pump station improvements
- Grit classifier replacement
- Lab and administrative facilities expansion - design and construction

The Primary Sludge Pump Station has numerous operational issues and was recommended for demolition and replacement with a new primary sludge pump station with multiple pumps in the WWFMP. The grit classifier is corroded and beyond its service life. It was also earmarked for replacement in the WWFMP. HDR therefore suggests that 80% of the driver for sludge pump station and grit classifier components of Project 2 is due to the need for condition-related replacement and 20% is due to the corresponding property benefit that would result from continued well-being of the public welfare.

As stated previously in this memo, improvements to the lab and administrative building are required to support the staff functions required for efficient long-term operation and maintenance of the treatment plant. Such improvements are directly related to the need to replace and upgrade existing equipment so that plant staff can operate the plant in an effective manner for the public welfare. HDR therefore suggests that that 80% of the driver for this component of Project 2 is attributable to the need for condition-related facility replacement and 20% is due to the corresponding property benefit that would result from continued well-being of the public welfare.

Project 3 - Aeration System Upgrade

This project will provide additional blower and aeration capacity to support treating anticipated higher loads in the secondary treatment process. This project will be required when maximum month influent flow approaches 2.2 MGD, which is anticipated to occur after 2015. HDR therefore suggests that that 80% of the driver for this project is attributable to the need to accommodate future growth-related capacity requirements and 20% is due to the potential for property benefit/public well-being that would accompany the use of an upgraded facility that is able to treat to a higher water quality standard.

Project 4 - Secondary Treatment Stress Testing/Re-rating

Once the Project 1 process optimization is completed and the aeration system is upgraded to provide additional aeration capacity to treat higher influent loads, full scale stress testing will be conducted ideally in conjunction with secondary process simulation. The results of the stress testing and process simulations can ultimately be used to re-rate the secondary treatment facility to its true capacity in order to refine the implementation timeframe for the secondary process expansion. The objective of the stress testing is to determine the maximum capacity of the

secondary system, including secondary clarifier capacity. HDR therefore suggests that that 80% of the driver for this project is attributable to the need to accommodate future growth-related capacity requirements and 20% is due to the potential for property benefit/public well-being that would accompany the use of an upgraded facility that is able to treat to a higher water quality standard.

Project 5 - Effluent Filtration/Subsurface Discharge/Other

The existing treatment plant does not include effluent filtration as part of normal operations; however, filtration may be required to comply with future effluent turbidity limits described in Chapter 5 of the WWFMP. In addition to effluent filtration, this project would include capital improvements required to meet temperature TMDL requirements or support development of an effluent reuse program. Its timing and cost depend on the final thermal load allocation in the Molalla-Pudding TMDL, and/or opportunities to use effluent for beneficial reuse applications. HDR therefore suggests that that 80% of the driver for this project is attributable to the potential for property benefit and public well-being that would accompany the use of an upgraded facility that is able to treat to a higher water quality standard and 20% is due to the need to accommodate future growth-related increases in thermal and turbidity loading.

SUMMARY

Table 2 presents a summary of the % breakdown of project drivers described in this memorandum.

Table 2

City of Silverton Wastewater CIP Driver Breakdown

Project	Project Drivers		
	% Due to Replacement	% Due to Growth	% Due to Benefited Properties
<i>Collection System Improvements</i>			
IMP-1 (Westfield street capacity)		80	20
IMP-2 (Oregon Garden lift station capacity)		80	20
IMP-3 (South James street capacity)		80	20
IMP-4 (Sherman street capacity)		80	20
IMP-5 (Adams street capacity)		80	20
IMP-6 (Schlador street condition)	80		20
IMP-7 (Lone Oaks street condition)	80		20
IMP-8 (Third street condition)	80		20
IMP-9 (Meat packers/high school condition)	80		20
Condition assessment program - forecast year 1	50		50

Project	Project Drivers		
	% Due to Replacement	% Due to Growth	% Due to Benefited Properties
Condition assessment program - forecast year 2	50		50
Condition assessment program - forecast year 3	50		50
Condition assessment program - forecast year 4	50		50
Condition assessment program - forecast year 5	50		50
<i>Additional Pump Stations</i>			
PMP-1 James street pump station		80	20
PMP-2 Pine street pump station		80	20
PMP-3 Setness lane pump station		80	20
WWTP Improvements			
Thermodynamic model update		20	80
Wetland optimization study		20	80
Laboratory/admin	80		20

Project	Project Drivers		
	% Due to Replacement	% Due to Growth	% Due to Benefited Properties
facility schematic design			
<i>Project 1 - Biosolids Expansion</i>			
<i>Solids/effluent pumping expansion</i>			
Pre-design	5	65	30
Design	5	65	30
Construction	5	65	30
<i>Optimization</i>		80	20
<i>Project 2 - Biosolids Handling/Lab & Admin</i>			
Design	80		20
Construction	80		20
<i>Project 3 - Aeration System Upgrade</i>			
<i>Project 4 - Secondary treatment stress testing/re-rating</i>			
<i>Project 5 - Effluent filtration/subsurface discharge/other</i>			

Feel free to give me a call at (503) 452-6948 if you need any clarification on anything presented in this memo.