2012 Wastewater Rate Study

November 2012

Prepared for:

Mt. Olympus Improvement District

Prepared by:

Bowen Collins & Associates, Inc.
CONSULTING ENGINEERS

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WASTEWATER RATE STUDY

The purpose of this study is to calculate detailed sewer rates for the next 6 years based on the overall budget plan. To accomplish this goal, this analysis focused on four major tasks:

1. **Projecting Wastewater Production:** Future wastewater production was estimated by examining current production patterns and by projecting sewer system growth for the next several years.

2. **Calculating Revenue Requirements:** Total revenue requirements for the system were projected for the next several years based on the District's existing operation and maintenance (O&M) costs and projected costs based on inflation and system renewal goals. Non-rate revenue (including impact fee revenue) was deducted from the total to give the net revenue requirement to be recovered from rate payers.

3. **Cost Allocation:** This analysis generally followed the design cost-causative procedure recommended by the Water Pollution Control Federation (WPCF), American Society of Civil Engineers (ASCE), and American Public Works Association (APWA)[1]. The essential principle of this method is that wastewater revenue should be recovered from classes of customers in proportion to the cost of serving those customers.

4. **Wastewater Rate Design:** Wastewater rates were calculated to recover the allocated cost of service based on operation and maintenance costs, capital improvement plan costs, and system renewal goals. The report develops a single rate per residential equivalent and is separated into categories for general comparison.

The remainder of this report details the results of each of these four major tasks. Detailed rate tables from the model used to develop the rate recommendations are located in the Appendix.

KEY ASSUMPTIONS

The results presented in this report are based on the following assumptions:

1. The District operating fund will continue to be a self-funding enterprise fund.

2. The study follows the basic recommended methodologies of the joint publication, "Financing and Charges for Wastewater Systems". Only the "cash basis" approach has been used to allocate costs to users. The "cash basis" study methodology is summarized later in this report.

3. It has been assumed that the District will adopt the impact fees recommended in 2012 Impact Fee Analysis.

4. This wastewater rate study is based on projections of future wastewater production and projected system operation, maintenance, and improvement costs. These projections are based on current economic conditions and wastewater use patterns. Because conditions

[1] Water Pollution Control Federation, American Society of Civil Engineers, and American Public Works Association. Financing and Charges for Wastewater Systems, 1984.

may change over time, it is recommended that the District review the wastewater rates periodically and adjust them as needed to provide a revenue stream that will adequately fund operation and maintenance costs as well as needed rehabilitation and replacement projects. It is also recommended that a comprehensive review and updating of wastewater rates be undertaken in three to five years so that the basic analytical foundations of this study can be reevaluated.

PROJECTING WASTEWATER PRODUCTION

Historic Indoor Water Use

The District currently provides sewer service to approximately 27,000 accounts of various types and users with an approximate indoor production of 6,000 gal/month per residential equivalent (RE). Table 1 lists the approximate use per account for residential, multi-unit, commercial, churches, schools, and government based on existing REs in the District.

Table 1
2011 Indoor Water Use

Customer Class	Use	Accounts	Use per Account	Use/Acct. (kgal/month)
Residential	1,639,198	22,629	72.4	6.0
Multiple Unit	1,262,271	2,924	431.7	36.0
Commercial	669,898	1,670	401.1	33.4
Churches	8,389	18	466.0	38.8
Schools	3,006	12	250.5	20.9
Government	9,647	10	964.7	80.4
Total	**3,592,408**	**27,263**	**131.8**	**11.0**

Projected Accounts

Most of the District service area has already been developed, with very limited area for new development. The Wasatch Front Regional Council (WFRC) projects a relatively small growth rate from 2012 to 2017 (roughly 0.05 percent over the next 6-years). However, many of the entities served by the District have redevelopment projects that will continue to increase the District's total number of accounts. Wasatch Front Regional Council population projections for the District's service area show a declining residential population with an increasing commercial or employment population leading to a net growth rate of approximately 0.05 percent over the next 6 years. Because of the current ongoing economic downturn, this relatively small growth projection seems appropriate for rate planning purposes. Projected growth rates and accounts by customer type are summarized in Table 2.

Table 2
Projected Growth in System Accounts

Customer Class	2012 0.05%	2013 0.05%	2014 0.05%	2015 0.05%	2016 0.05%	2017 0.05%
Residential	22,641	22,653	22,665	22,677	22,689	22,701
Multiple Unit	2,926	2,927	2,929	2,930	2,932	2,933
Commercial	1,671	1,672	1,673	1,674	1,674	1,675
Churches	18	18	18	18	18	18
Schools	12	12	12	12	12	12
Government	10	10	10	10	10	10
Total	**27,278**	**27,292**	**27,307**	**27,321**	**27,335**	**27,349**

Projected Indoor Water Use

Future indoor water use was projected by multiplying the average use per account in 2011 from Table 1 by the projected number of accounts in Table 2. Using this methodology, the projected growth in total waste water production is shown in Table 3.

Table 3
Projected Growth in Indoor Water Use

Customer Class	Average Use/Acct.	Amount (kgal) 2012	2013	2014	2015	2016	2017
Residential	72.4	1,640,067	1,640,936	1,641,805	1,642,675	1,643,544	1,644,413
Multiple Unit	431.7	1,263,134	1,263,566	1,264,429	1,264,861	1,265,725	1,266,156
Commercial	401.1	670,299	670,700	671,101	671,502	671,502	671,903
Churches	466.0	8,389	8,389	8,389	8,389	8,389	8,389
Schools	250.5	3,006	3,006	3,006	3,006	3,006	3,006
Government	964.7	9,647	9,647	9,647	9,647	9,647	9,647
Total		**3,594,541**	**3,596,244**	**3,598,377**	**3,600,079**	**3,601,812**	**3,603,514**

Infiltration and Inflow

Infiltration and inflow is the intrusion of groundwater or stormwater into the sewer system through cracked pipes, broken and offset joints, improper connections, leaky manholes, etc. In areas with aging sewer lines and high groundwater, infiltration can actually be the largest component of flow being conveyed in the sewer. Infiltration is very difficult to measure because it varies across the service area based on climate conditions, water table levels, pipe diameter, and pipe condition. Because of the difficulty of identifying the source of infiltration, the District does not bill sewer accounts for infiltration directly. Thus, infiltration and inflow are not included in the rate model and billing flows are based on estimates of indoor water use only. However, total flow observed at the Central Valley Water Reclamation Facility (including infiltration and inflow) is used for calculation of total BOD and TSS loading as will be discussed subsequently.

Peaking Characteristics

Unlike water used for outdoor irrigation, indoor water use is relatively constant year round. As a result, the calculation of sewer rates does not need to consider peak day demands. However, sewer flow does tend to vary significantly over the course of a single day. Thus, the sewer rate model includes consideration of peak hour factors so that users with varying peaking rates can be assessed fairly. Unfortunately, there is no data available to isolate accurate peak hour factors for any individual customer class. Thus, a peaking factor of 1.90 has been assumed for all customer classes based on the District's overall average.

Strength Characteristics

Similar to peaking characteristics, there is no ongoing monitoring available to isolate accurate wastewater strength characteristics for any individual customer class. Thus, a BOD concentration of 174.49 mg/L and a TSS concentration of 156.74 mg/L has been used for all customer classes based on the District's overall averages (October 2010 to September 2011). Note that this average concentration may vary depending on infiltration rates throughout the year. However, the amount of BOD and TSS in lbs/year should grow as projected in Table 4. The total projected strength loadings for the District are summarized in Table 4.

Table 4
Projected Growth in Strength Loading

	Average Concentration (mg/L)	Amount (lbs/year)					
		2012	2013	2014	2015	2016	2017
BOD	174.49	8,412,812	8,416,801	8,421,801	8,425,791	8,429,851	8,433,840
TSS	156.74	7,556,741	7,560,323	7,564,816	7,568,398	7,572,045	7,575,629

CALCULATING REVENUE REQUIREMENTS

There are two methods for determining a utility's revenue requirements. One is called the Cash Basis of revenue requirements. The other method is called the Utility Basis of revenue requirements. The revenue requirements for each approach are summarized below.

	Cash Basis		**Utility Basis**
	Operation and Maintenance Costs		Operation and Maintenance Cost
Plus:	Debt Service	Plus:	Depreciation
	Cash-Financed Capital Outlays		Return on Investment
	Taxes (if applicable)		Taxes (if applicable)
	Net Additions to Reserves		
	Total Requirements		Total Requirements
Less:	Non-Rate Revenues	Less:	Non-Rate Revenues
Equals:	Net Requirements from Rates	Equals:	Net Requirements from Rates

The cash basis of revenue requirements is based on the actual cash expenditures of the system. Its goal is to make sure revenues match the cash needs of the system. In public utilities, this method generally matches the budgetary expenditures for the period. It has the additional advantage of being more understandable to most rate payers and more directly meets any debt service coverage requirements that the system might need to comply with.

The utility basis approach simulates the financial requirements of private sector companies. It ensures that revenue requirements reflect the depreciation incurred by the system, as well as a return on the investment in rate base by system owners. In the municipal utility setting, the utility basis is most often used when there is significant utility service to customers outside the jurisdictional boundaries of the system owners, such as outside-District customers. It allows the system owners (i.e., inside-District customers) to earn a return from the investments to serve the outside-District customers. Because the District does not have any outside-District users, rates for this study were developed under the cash basis only.

Impact Fee Revenue

The projected impact fee revenue for the next six years is estimated to be about $112,000 a year as summarized in Table 5. This is based on a projected 150 new REs to pay impact fees each year to the District. The projected annual revenue from impact fees is based on the projected number of new accounts as discussed previously. For this analysis, it has been assumed that the District's current impact fee rates will be as recommended in the 2012 Impact Fee Analysis and will be constant throughout the planning period. If the District deviates from this approach, the rates calculated in this report will need to be adjusted accordingly.

Table 5
Projected Impact Fee Revenue

Year	2012	2013	2014	2015	2016	2017
Projected New REs	150	150	150	150	150	150
Projected Impact Fee Revenue	$112,220	$112,220	$112,220	$112,220	$112,220	$112,220

Non-Rate Revenue

The projected non-rate revenue for the District is summarized in Table 6. This revenue is the net income from activities not associated with sewer user rates or impact fees. It may include service charges, net interest income, fees, and tax revenue. For information purposes, the income has been separated into operating and non-operating revenue. The biggest portion of this revenue comes from property taxes. It should be noted that the District increased taxes for the 2012 calendar year by 89 percent. The District had not increased taxes within the District in more than 20 years. To keep up with inflation, the District has proposed increasing taxes by approximately 5 percent every three years to avoid large increases in the future. Table 6 assumes a 5 percent tax increase in 2015.

Table 6
Projected Non-Rate Revenue

Item	Projected 2012	Projected 2013	Projected 2014	Projected 2015	Projected 2016	Projected 2017
Operating						
Engineering Fees	$5,117	$5,273	$5,434	$5,600	$5,771	$5,947
Taxes M&O (Maintenance & Operation)	$2,715,425	$2,716,859	$2,718,293	$2,855,714	$2,857,220	$2,858,726
Delinquent Tax Collections	$46,849	$48,279	$49,753	$51,272	$52,837	$54,450
Fee in lieu M&O	$96,379	$99,321	$102,353	$105,478	$108,698	$112,016
Inspection Fees	$4,199	$4,328	$4,460	$4,596	$4,736	$4,881
Penalties	$148,167	$152,691	$157,352	$162,155	$167,106	$172,207
Miscellaneous Income	$4,562	$4,701	$4,845	$4,993	$5,145	$5,302
Interest Income	$129,211	$133,155	$137,220	$141,409	$145,726	$150,175
Total Operations Non-Rate Revenue	**$3,149,909**	**$3,164,607**	**$3,179,710**	**$3,331,217**	**$3,347,238**	**$3,363,703**
Expansion and Replacement						
Sewer Availability Letter	$1,005	$1,035	$1,067	$1,100	$1,133	$1,168
Nose on Fees	$4,431	$4,567	$4,706	$4,850	$4,998	$5,150
Capacity (impact) Fees	$112,220	$112,220	$112,220	$112,220	$112,220	$112,220
Total Expansion Non-Rate Revenue	**$117,656**	**$117,822**	**$117,993**	**$118,169**	**$118,350**	**$118,538**
Total Non-Rate Revenue	**$3,267,565**	**$3,282,429**	**$3,297,703**	**$3,449,386**	**$3,465,589**	**$3,482,241**

District Expenditures

The projected District expenditures for the planning period are summarized in Table 7. Included in the table are the projected total costs for the three major categories of expenditures: operations and maintenance, debt service, and capital expenditures. Each of these categories are discussed in more detail in following sections.

Table 7
Projected Revenue Requirements

Item	2012	2013	2014	2015	2016	2017
O&M	$5,971,541	$6,018,780	$6,228,544	$6,356,339	$6,523,783	$6,708,729
Debt Services	$383,600	$377,600	$371,600	$379,600	$368,200	$365,600
Capital (Net of bond revenue)	$1,000,000	$1,252,046	$4,001,283	$4,020,426	$30,087	$343,583
Transfer to/(from) Reserve Fund	$757,076	$480,992	($2,453,804)	($2,454,722)	$2,016,450	$1,539,890
Total Expenditures	**$8,112,217**	**$8,129,419**	**$8,147,623**	**$8,301,643**	**$8,938,520**	**$8,957,802**

Operation and Maintenance Costs. The projected operation and maintenance (O&M) costs for the District have been taken from the District's budget for 2012. A detailed list of all O&M budget categories is included as part of the rate model in the Appendix. Beyond 2012, it has been assumed that all O&M cost categories will increase at a rate equal to half the system growth rate in each year and an assumed inflation rate of 3.0 percent (e.g. budget growth in 2013 = 0.05%/2 + 3% = 3.025%). This includes treatment costs at the Central Valley Water Reclamation Facility.

Debt Service Costs. The projected debt service costs for the District have been taken from the District's bond payment schedule. The District's bond was used to pay for its portion of rehabilitation and capital projects at the Central Valley Water Reclamation Facility. A detailed list of all bond payments is included as part of the rate model in the Appendix.

Capital Improvement Costs. The projected capital improvement costs for the District have been taken from the District's renewal budget as described in its capital facilities plan. No projects are needed in the District as a result of growth. It is recommended that the District fund renewal projects at a rate of approximately $1.6 million/year. For the next several years, the District has several large relining projects that exceed this amount. As a result, the District will need to use some of its reserve fund to construct these projects. It should be noted that the annual maintenance budget should increase with annual inflation along with the reserve fund so that the District has sufficient funds to pay for increasing material and construction costs.

Reserve Fund. The District strives to maintain a reserve fund balance of approximately $13 million (in 2012 dollars). Currently, the reserve fund has a balance less than this target amount and the fund will be further depleted in the next few years as a result of required relining projects. Once the relining projects are completed, the District should begin replenishing the fund with available revenue so that it can be prepared for emergencies and/or unexpected projects that may become needed if inspections indicate urgent deficiencies. After the completion of currently planned relining projects, the District plans to fund renewal projects at a somewhat lower rate of approximately $500,000/year (2012 dollars) until the reserve fund is replenished.

COST ALLOCATIONS

A key step in a cost-causative wastewater rate analysis is the allocation of costs to customer service characteristics. The District currently uses a fixed fee per residential equivalent for all customers. This method has been used because it does not collect water use or strength data and therefore does not have sufficient data to accurately allocate costs to volume or strength use. However, the following analysis was performed to determine how rates would be structured for customer classes with significantly different characteristics (i.e. high BOD or TSS loading). This approach is based on the recommendations of WPCF, ASCE, and APWA. This approach recommends the allocation of costs into one of four cost allocation categories:

- **Volume costs –** Volume costs refer to costs that are determined by the volume of wastewater generated in the system. Most costs associated with treatment at District's wastewater reclamation facility would fit under this category.

- **Capacity costs –** Capacity costs are costs determined by the peak wastewater production of system users. This category would include such items as the design and construction of major trunk lines since they are sized based on peak flow rates.
- **Strength costs –** Strength costs are those costs determined by biochemical oxygen demand (BOD) or total suspended solids (TSS) concentrations. Some treatment costs at the CVWRF would fit under this category.
- **Customer related costs –** Finally, customer related costs are any costs independent of the quantity or quality of wastewater generated. This category is mostly limited to administrative services such as the cost of generating and sending out a bill each month.

Each of the revenue requirements discussed previously was divided between these four customer service characteristic categories. This has been done in the sewer rate model (see Tables 12 and 13 of the Appendix). In each case, these allocations are based on information provided by District personnel, professional engineering judgment, and knowledge of system operations. Table 12 in the Appendix provides a division by cost allocation category for O&M expenditures. Table 13 in the Appendix provides the same information for capital and bonding expenditures.

To understand how this has been done, it may be useful to consider a few examples. Under the budget item for main sewer pipelines, the largest portion of costs (50 percent) has been assigned to the volume cost category. This basically represents the cost of maintaining pipes and manholes in the ground to provide service to system users. However, the size of the pipelines in the system must be larger than would be required to convey average flow, because of daily fluctuations in system flow. Thus, a portion of the main sewer pipeline costs (30 percent) has been allocated to peak capacity to account for the increased costs of maintaining a larger system. The remaining amount (20 percent) has been allocated to cover the strength and customer categories to cover other miscellaneous costs in the system including laterals.

Another example is the sewer treatment O&M budget item. This budget item has been divided between volume and strength costs based on the bill received from the Central Valley Water Reclamation Plant. Based on the bill received, 30 percent of treatment costs are associated with the total volume of wastewater received and 70 percent of treatment costs are from the total strength loading. Each of the other revenue requirements has been divided among the customer service characteristic categories based on similar logic.

Using the percentages assigned to each budget category, the system revenue costs are distributed among the customer service characteristics. This is also shown in detail in the rate model. The total revenue requirement for each customer service characteristic is given in Table 15 of the Appendix. Table 16 of the Appendix shows the total cost allocation for each customer class.

It is this analysis that was used to assemble the cost weighting for the recent Residential Equivalent Study completed by the District (this document can be found as Technical Memo #3, Appendix 3 of the 2012 Impact Fee Analysis). Based on the results of the cost allocation process, the cost of providing service can be separated into three categories of cost: Flow, Biological Oxygen Demand (BOD) treatment, and Total Suspended Solids (TSS) treatment. The percentage of cost attributable to each component is shown in Table 8. If a new customer with flow characteristics significantly different from a typical RE is added to the system, this cost

break down can be used to calculate an appropriate RE value as outlined in the Residential Equivalent Study.

Table 8
Cost Breakdown for a Typical Residential Equivalent

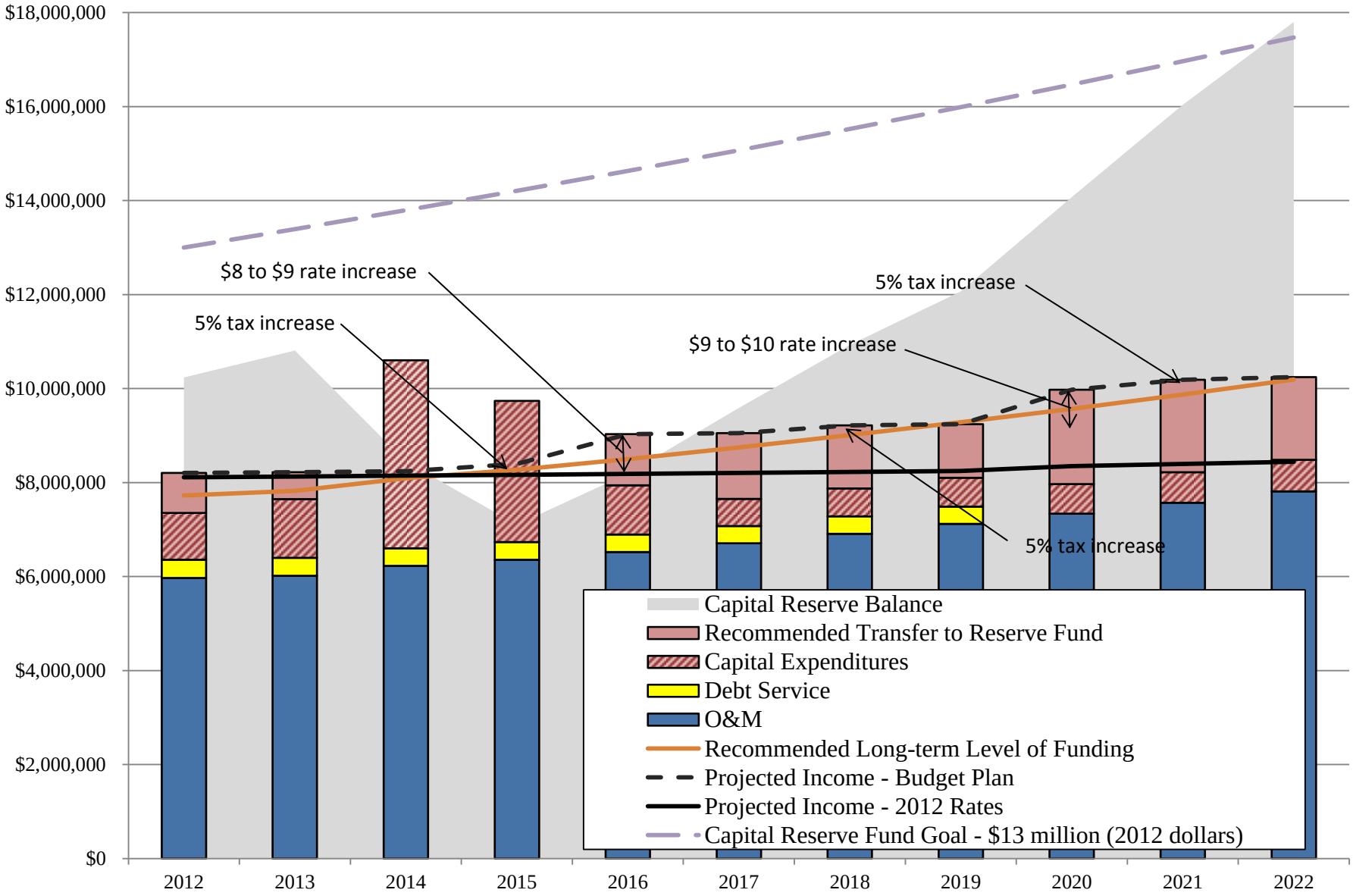
Component of Wastewater	Percentage of Cost attributed to component	Cost of Component Using 2012 Sewer Rate ($8/RE)
Flow	75	$6.00
BOD	11	$0.88
TSS	14	$1.12

WASTEWATER RATE DESIGN

Based on the information contained in the rate model, a long term plan for rates in the District can be developed. Figure 1 summarizes the District's funding requirements for the next ten years:

- **Revenue Requirements** – Figure 1 shows bar graphs of the District's revenue requirements which include its operation and maintenance cost, debt service (related to bond payments), capital expenditures (for construction projects), and transfers to its reserve fund.
- **Recommended Long Term Funding Level –** The recommended long term funding level is the sum of the District's operation and maintenance costs and the recommended renewal budget. To be able to have enough revenue to adequately maintain system infrastructure, District revenue from rates and non-rate sources should be equal to this recommended level.
- **Projected Income, 2012 Rates –** The projected income for the District is shown for the existing 2012 tax and wastewater rates. As can be seen in the Figure 1, existing tax and wastewater rates meet recommended levels for the next several years, but begin to fall short beginning in 2015.
- **Projected Income, Recommended Rates –** To keep revenue at recommended levels, revenue for recommended rates based on a proposed series of rate and tax increases has been shown. This proposed budget plan includes a 5 percent tax increase every three years and additional $1/RE rate increases in 2016 and 2020. It should be noted that this plan presents just one possible solution to increasing revenue to meet projected needs. The exact mix and timing of tax and rate increases is flexible and could be modified to meet District needs or preferences as long as the total increase in revenue over time is the same. The approach shown has been recommended because it includes a series of small, incremental changes over time to minimize the size of increase experienced by customers in any one year.

Figure 1
Future Revenue and Expenditures



- **Reserve Fund Balance –** In addition to revenue and expenses, Figure 1 also shows the reserve fund balance for the District. As can be seen is the figure, the balance is reduced as funds are transferred out (revenue requirements exceed projected annual income) and recovers as funds are transferred in (annual income exceeds revenue requirements). The reserve fund balance shown in the figure is for the recommended rates.
- **Reserve Fund Goal –** The District has goal to maintain a balance in the reserve fund of $13 million (in 2012 dollars). This goal is shown (with inflation, assumed to be 3 percent annually) in Figure 1. While the District recognizes the need to draw this fund down over the next few years as it completes a number of rehabilitation project, it would like to restore its reserve fund to its normal level ($13 million plus inflation) within the next 10 years. As can be seen in the figure, adopting the rate and tax increases recommended in this report will restore the reserve fund balance to its target level by the end of the planning window.

In summary, a number of observations can be made from Figure 1. The existing 2012 tax and wastewater rates will allow the District to partially replenish its reserve fund for the next couple years, but will soon be overtaken by revenue requirements as a result of capital expenditures and higher operation and maintenance costs resulting from inflation. The District will need to raise taxes and/or wastewater rates to replenish its reserve fund and satisfy the recommended long term funding goal. This can be accomplished with a combination of tax increases and wastewater rate increases.

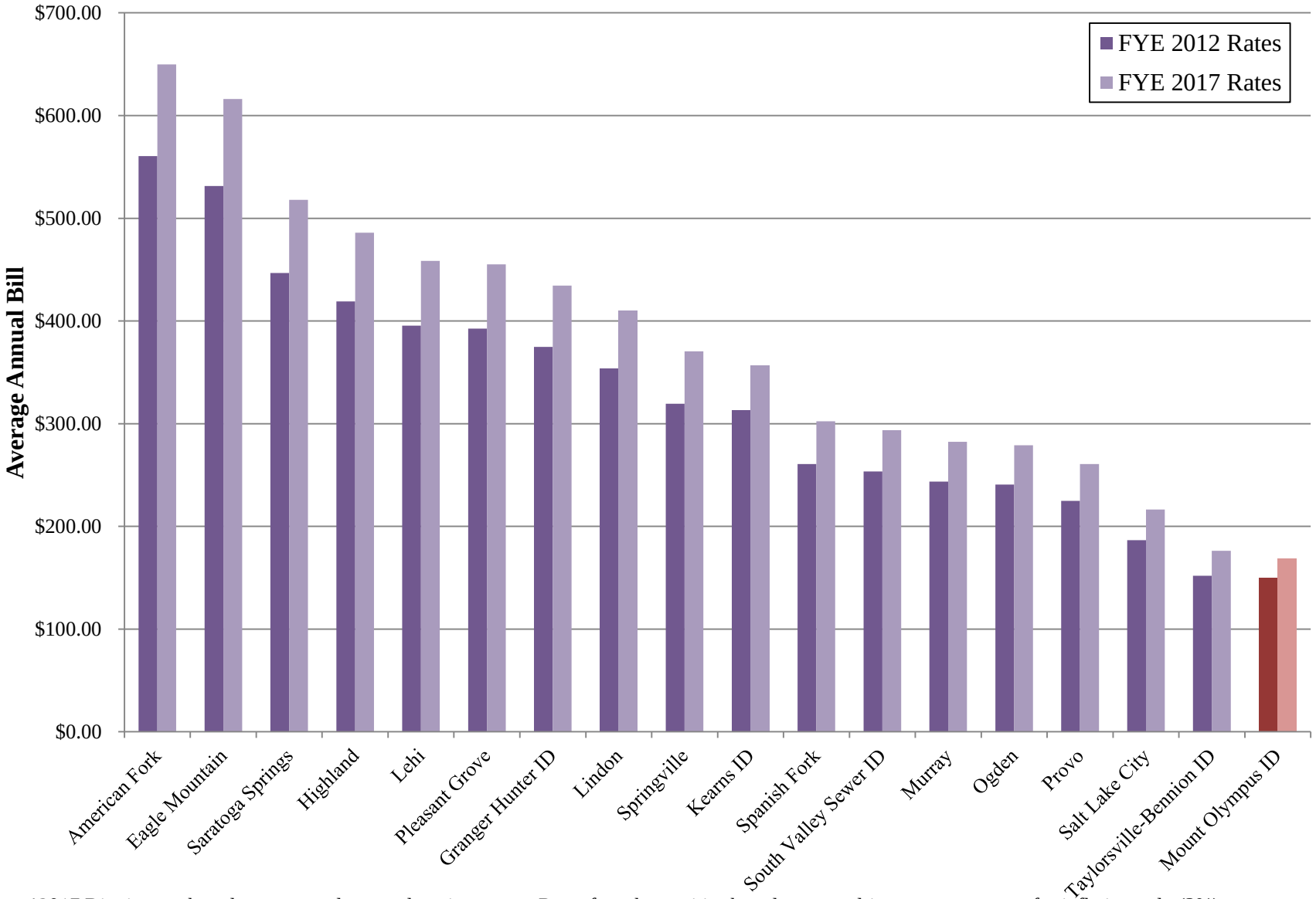
Projected revenues based on the proposed District sewer rates are shown for the next 5 years in Table 9.

Table 9
Projected Revenue Based on Proposed Sewer Rates

	2012	2013	2014	2015	2016	2017
Projected Revenue-w/ Proposed Rates	$8,203,935	$8,221,137	$8,239,341	$8,393,361	$9,030,238	$9,049,520
Projected Revenue Requirements	$7,355,141	$7,648,426	$10,601,427	$9,735,939	$7,942,526	$7,653,966
Transfer to/(from) Reserve Fund	$848,794	$572,711	($2,362,086)	($1,342,578)	$1,087,712	$1,395,554
Reserve Fund Balance	$10,235,546	$10,808,256	$8,446,170	$7,103,592	$8,191,305	$9,586,858

For comparison purposes, Figure 2 shows a comparison of rates along the Wasatch Front. This includes current rates and projected rates in five years. Even with the proposed rate and tax increase within the District, rates in the District are the lowest amongst the surveyed entities along the Wasatch Front.

Figure 2
Comparison of Annual Sewer Rates, Average Residential Customer



*2017 District rate based on proposed rate and tax increases. Rates for other entities based on annual increase to account for inflation only (3%)

CONCLUSIONS AND RECOMMENDATIONS

Several conclusions can be made from the analysis performed as part of this rate study:

1. The District needed the tax increase and rate increase adopted as part of the 2012 calendar year to keep pace with rising costs of operations and system maintenance.
2. The District will need some additional increases in taxes and/or rates to satisfy long term funding needs. Proposed increases in taxes and rates have been proposed in the 10-year budget plan.
3. The District's sewer rate is the lowest amongst surveyed sewer service providers along the Wasatch Front.
4. The District's current $8/RE fixed rate should be re-evaluated on a user specific basis if new customers (industrial or commercial) have higher than normal BOD or TSS loading rates. The Residential Equivalent Study completed by BC&A should be referenced to calculate rates.
5. This study should be re-visited in three to five years to determine if additional changes to the District's rates are recommended.

APPENDIX

DETAILED SEWER RATE MODEL TABLES

Table 1
Mount Olympus Improvement District - Sewer Rate Study
Historic Indoor Water Use
(kgal)

	2009			*2010*			*2011*				
Customer Class	**Use**	**Accounts**	**Use per Account**	**Use**	**Accounts**	**Use per Account**	**Use**	**Accounts**	**Use per Account**	**Planning Use/Acct.**	**Use/Acct. (kgal/month)**
Residential	1,639,592	22,583	72.6	1,641,904	22,616	72.6	1,639,198	22,629	72.4	72.4	6.0
Multiple Unit	1,246,303	2,834	439.8	1,261,860	2,868	440.0	1,262,271	2,924	431.7	431.7	36.0
Commercial	664,919	1,674	397.2	671,226	1,680	399.5	669,898	1,670	401.1	401.1	33.4
Churches	8,129	18	451.6	8,129	18	451.6	8,389	18	466.0	466.0	38.8
Schools	2,943	12	245.3	2,943	12	245.3	3,006	12	250.5	250.5	20.9
Government	9,671	16	604.4	9,671	16	604.4	9,647	10	964.7	964.7	80.4
Total	**3,571,557**	**27,137**	**131.6**	**3,595,735**	**27,210**	**132.1**	**3,592,408**	**27,263**	**131.8**	**131.8**	**11.0**

Table 2
Mount Olympus Improvement District - Sewer Rate Study
Projected Accounts

Customer Class		Number of Projected Accounts					
		2012	2013	2014	2015	2016	2017
	% Growth	0.05%	0.05%	0.05%	0.05%	0.05%	0.05%
Residential		22,641	22,653	22,665	22,677	22,689	22,701
Multiple Unit		2,926	2,927	2,929	2,930	2,932	2,933
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Schools		12	12	12	12	12	12
Government		10	10	10	10	10	10
Total		**27,278**	**27,292**	**27,307**	**27,321**	**27,335**	**27,349**

Table 3
Mount Olympus Improvement District - Sewer Rate Study
Projected Annual Indoor Water Use

Customer Class	3-Year Avg. Use/Acct.	Amount (kgal)					
		2012	2013	2014	2015	2016	2017
Residential	72.4	1,640,067	1,640,936	1,641,805	1,642,675	1,643,544	1,644,413
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Commercial	401.1	670,299	670,700	671,101	671,502	671,502	671,903
Churches	466.0	8,389	8,389	8,389	8,389	8,389	8,389
Schools	250.5	3,006	3,006	3,006	3,006	3,006	3,006
Government	964.7	9,647	9,647	9,647	9,647	9,647	9,647
Total		**3,594,541**	**3,596,244**	**3,598,377**	**3,600,079**	**3,601,812**	**3,603,514**

Table 4
Mount Olympus Improvement District - Sewer Rate Study
Projected Total Wastewater Flow

	2011
Total Flow at Treatment Plant (mgd)=	**15.85**

Customer Class	Average RE/account	Amount (mgd)					
		2012	2013	2014	2015	2016	2017
Residential	1.02	7.24	7.24	7.24	7.25	7.25	7.26
Multiple Unit	7.57	5.57	5.57	5.58	5.58	5.58	5.59
Commercial	4.59	2.96	2.96	2.96	2.96	2.96	2.96
Churches	8.43	0.04	0.04	0.04	0.04	0.04	0.04
Schools	3.82	0.01	0.01	0.01	0.01	0.01	0.01
Government	97.80	0.04	0.04	0.04	0.04	0.04	0.04
Total		**15.86**	**15.87**	**15.88**	**15.88**	**15.89**	**15.90**

Table 5
Mount Olympus Improvement District - Sewer Rate Study
Peaking Factors

Customer Class	Est. Peak Hour Factor
Residential	1.90
Multiple Unit	1.90
Commercial	1.90
Churches	1.90
Schools	1.90
Government	1.90

Table 6
Mount Olympus Improvement District - Sewer Rate Study
Projected Flow Peaking Characteristics

	Estimated Peak Hour (mgd)					
Customer Class	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Residential	8.54	8.54	8.55	8.55	8.56	8.56
Multiple Unit	6.58	6.58	6.58	6.58	6.59	6.59
Commercial	3.49	3.49	3.49	3.50	3.50	3.50
Churches	0.04	0.04	0.04	0.04	0.04	0.04
Schools	0.02	0.02	0.02	0.02	0.02	0.02
Government	0.05	0.05	0.05	0.05	0.05	0.05
Total	**18.71**	**18.72**	**18.73**	**18.74**	**18.75**	**18.76**

	Excess Over Average Day (mgd)					
Customer Class	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Residential	4.04	4.05	4.05	4.05	4.05	4.05
Multiple Unit	3.11	3.12	3.12	3.12	3.12	3.12
Commercial	1.65	1.65	1.65	1.66	1.66	1.66
Churches	0.02	0.02	0.02	0.02	0.02	0.02
Schools	0.01	0.01	0.01	0.01	0.01	0.01
Government	0.02	0.02	0.02	0.02	0.02	0.02
Total	**8.86**	**8.87**	**8.87**	**8.88**	**8.88**	**8.89**

Table 7
Mount Olympus Improvement District - Sewer Rate Study
Strength

Customer Class	BOD (mg/L)	TSS (mg/L)
Residential	174.5	156.7
Multiple Unit	174.5	156.7
Commercial	174.5	156.7
Churches	174.5	156.7
Schools	174.5	156.7
Government	174.5	156.7
Approximate Cost Division	44%	56%

Table 8
Mount Olympus Improvement District - Sewer Rate Study
Projected Strength Characteristics

	BOD (lbs/year)					
Customer Class	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Residential	3,843,608	3,845,645	3,847,682	3,849,720	3,851,757	3,853,794
Multiple Unit	2,960,241	2,961,253	2,963,276	2,964,288	2,966,311	2,967,323
Commercial	1,570,891	1,571,831	1,572,771	1,573,711	1,573,711	1,574,651
Churches	19,659	19,659	19,659	19,659	19,659	19,659
Schools	7,045	7,045	7,045	7,045	7,045	7,045
Government	22,608	22,608	22,608	22,608	22,608	22,608
Total	**8,424,052**	**8,428,041**	**8,433,041**	**8,437,031**	**8,441,091**	**8,445,080**

	TSS (lbs/year)					
Customer Class	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Residential	3,452,490	3,454,320	3,456,150	3,457,979	3,459,809	3,461,639
Multiple Unit	2,659,013	2,659,921	2,661,739	2,662,648	2,664,465	2,665,374
Commercial	1,411,040	1,411,884	1,412,729	1,413,573	1,413,573	1,414,418
Churches	17,659	17,659	17,659	17,659	17,659	17,659
Schools	6,328	6,328	6,328	6,328	6,328	6,328
Government	20,308	20,308	20,308	20,308	20,308	20,308
Total	**7,566,838**	**7,570,420**	**7,574,913**	**7,578,495**	**7,582,142**	**7,585,726**

	Weighted Average (lbs/year)					
Customer Class	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Residential	3,626,377	3,628,299	3,630,221	3,632,143	3,634,065	3,635,987
Multiple Unit	2,792,936	2,793,890	2,795,799	2,796,754	2,798,663	2,799,618
Commercial	1,482,108	1,482,995	1,483,882	1,484,769	1,484,769	1,485,656
Churches	18,548	18,548	18,548	18,548	18,548	18,548
Schools	6,647	6,647	6,647	6,647	6,647	6,647
Government	21,331	21,331	21,331	21,331	21,331	21,331
Total	**7,947,947**	**7,951,710**	**7,956,428**	**7,960,192**	**7,964,022**	**7,967,786**

Table 9
Mount Olympus Improvement District - Sewer Rate Study
Connection Fee Revenue

Size of Meter	Impact Fee ($/ERU)	Projected FYE 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015	Projected 2016	Projected 2017
Per ERU	$748		$112,220	$112,220	$112,220	$112,220	$112,220	$112,220
Total Impact Fee Revenue		**$169,540**	**$112,220**	**$112,220**	**$112,220**	**$112,220**	**$112,220**	**$112,220**

Table 10
Mount Olympus Improvement District - Sewer Rate Study
Non-Rate Revenue (Including Connection Fees)

Assumed Inflation Rate = 3.0%

Item	Projected FYE 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015	Projected 2016	Projected 2017
Operations							
Engineering Fees	$4,965	$5,117	$5,273	$5,434	$5,600	$5,771	$5,947
Taxes M&O	$1,429,279	$2,715,425	$2,716,859	$2,718,293	$2,855,714	$2,857,220	$2,858,726
Delinquent Tax Collections	$45,461	$46,849	$48,279	$49,753	$51,272	$52,837	$54,450
Fee in lieu M&O	$93,524	$96,379	$99,321	$102,353	$105,478	$108,698	$112,016
Inspection Fees	$4,075	$4,199	$4,328	$4,460	$4,596	$4,736	$4,881
Penalties	$143,778	$148,167	$152,691	$157,352	$162,155	$167,106	$172,207
Miscellaneous Income	$4,427	$4,562	$4,701	$4,845	$4,993	$5,145	$5,302
Interest Income	$125,383	$129,211	$133,155	$137,220	$141,409	$145,726	$150,175
Unused		$0	$0	$0	$0	$0	$0
Total Operations Non-Rate Revenue	$1,850,892	$3,149,909	$3,164,607	$3,179,710	$3,331,217	$3,347,238	$3,363,703
Expansion and Replacement							
SEWER AVAILABILITY LETTER	$975	$1,005	$1,035	$1,067	$1,100	$1,133	$1,168
NOSE ON FEES	$4,300	$4,431	$4,567	$4,706	$4,850	$4,998	$5,150
CAPACITY (IMPACT)FEES	$169,540	$112,220	$112,220	$112,220	$112,220	$112,220	$112,220
Mics. Asset Sales	$0	$0	$0	$0	$0	$0	$0
Total Expansion Non-Rate Revenue	$174,815	$117,656	$117,822	$117,993	$118,169	$118,350	$118,538
Total Non-Rate Revenue	**$2,025,707**	**$3,267,565**	**$3,282,429**	**$3,297,703**	**$3,449,386**	**$3,465,589**	**$3,482,241**

Table 11
Mount Olympus Improvement District - Sewer Rate Study
Revenue Requirements
Cash Basis

Item	% Growth	Projected FYE 2011	Projected 2012	Projected 2013	Projected 2014	Projected 2015	Projected 2016	Projected 2017
O&M								
LINES		$1,825,482	$1,480,695	$1,392,023	$1,461,763	$1,445,297	$1,464,115	$1,495,937
PRETREATEMENT		$107,121	$110,363	$113,703	$117,144	$120,690	$124,342	$128,105
ADMIN		$951,567	$980,366	$1,010,035	$1,040,603	$1,072,096	$1,104,541	$1,137,968
ENGINEERING		$537,077	$553,331	$570,077	$587,330	$605,105	$623,417	$642,284
CENTRAL VALLEY SWR. TRT. COSTS		$2,763,162	$2,846,786	$2,932,942	$3,021,704	$3,113,152	$3,207,368	$3,304,434
Unused		$0	$0	$0	$0	$0	$0	$0
Unused		$0	$0	$0	$0	$0	$0	$0
Unused		$0	$0	$0	$0	$0	$0	$0
Total O&M		**$6,184,409**	**$5,971,541**	**$6,018,780**	**$6,228,544**	**$6,356,339**	**$6,523,783**	**$6,708,729**
Debt Service								
2010 Bond		$ 351,076.00	$ 383,600.00	$ 377,600.00	$ 371,600.00	$ 379,600.00	$ 368,200.00	$ 365,600.00
Potential 2015 Bond								
New Growth Bonds								
Total Debt Service		**$351,076**	**$383,600**	**$377,600**	**$371,600**	**$379,600**	**$368,200**	**$365,600**
Expansion and Replacement		**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Unused		$0	$0	$0	$0	$0	$0	$0
Projects			$1,000,000	$1,252,046	$4,001,283	$4,020,426	$30,087	$343,583
Unused			$0	$0	$0	$0	$0	$0
Transfer to/(from) Reserve Fund		$0	$757,076	$480,992	($2,453,804)	($2,454,722)	$2,016,450	$1,539,890
Total Capital Outlays		**$ -**	**$1,757,076**	**$1,733,038**	**$1,547,479**	**$1,565,704**	**$2,046,537**	**$1,883,473**
Total Revenue Requirements		**$ 6,535,485**	**$8,112,217**	**$8,129,419**	**$8,147,623**	**$8,301,643**	**$8,938,520**	**$8,957,802**
LESS:								
Operations Non-Rate Revenue		$1,850,892	$3,149,909	$3,164,607	$3,179,710	$3,331,217	$3,347,238	$3,363,703
Expansion Non-Rate Revenue		$174,815	$117,656	$117,822	$117,993	$118,169	$118,350	$118,538
Net Revenue Requirements		**$ 4,509,778**	**$ 4,844,652**	**$ 4,846,990**	**$ 4,849,920**	**$ 4,852,257**	**$ 5,472,931**	**$ 5,475,561**

Table 12
Mount Olympus Improvement District - Sewer Rate Study
Cost Allocation Percentages to Service Characteristics

Item	Volume	Capacity	Strength	Customer	Total
O&M					
LINES	50%	30%	15%	5%	100%
PRETREATEMENT	0%	0%	100%	0%	100%
ADMIN	60%	30%	0%	10%	100%
ENGINEERING	60%	30%	0%	10%	100%
CENTRAL VALLEY SWR. TRT. COSTS	29.5%	0%	70.5%	0%	100%

Table 13
Mount Olympus Improvement District - Sewer Rate Study
Fixed Assets Allocations to Service Characteristics

	Percent						*Allocated Amount*				
Item	**Assets**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**
Autos & Trucks	$0	60%	30%	0%	10%	100%	$0	$0	$0	$0	$0
Buildings	$1,990,504	60%	30%	0%	10%	100%	$1,194,303	$597,151	$0	$199,050	$1,990,504
Construction in Progress	$2,815,000	50%	30%	15%	5%	100%	$1,407,500	$844,500	$422,250	$140,750	$2,815,000
Land	$0	60%	30%	0%	10%	100%	$0	$0	$0	$0	$0
Office Equipment	$0	0%	0%	0%	100%	100%	$0	$0	$0	$0	$0
Main Lines	$29,975,283	60%	30%	0%	10%	100%	$17,985,170	$8,992,585	$0	$2,997,528	$29,975,283
Machinery & Equipment	$0	60%	30%	0%	10%	100%	$0	$0	$0	$0	$0
Total	**$34,780,787**						**$20,586,972**	**$10,434,236**	**$422,250**	**$3,337,329**	**$34,780,787**
Percent							**59.2%**	**30.0%**	**1.2%**	**9.6%**	**100.0%**

Table 14
Mount Olympus Improvement District - Sewer Rate Study
Allocation of O&M Costs to Service Characteristics

	2012					2013					2014					2015					2016					2017				
Item	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**
O&M																														
LINES	$740,348	$444,209	$222,104	$74,035	$1,480,695	$696,012	$417,607	$208,803	$69,601	$1,392,023	$730,882	$438,529	$219,264	$73,088	$1,461,763	$722,649	$433,589	$216,795	$72,265	$1,445,297	$732,058	$439,235	$219,617	$73,206	$1,464,115	$747,969	$448,781	$224,391	$74,797	$1,495,937
PRETREATEMENT	$0	$0	$110,363	$0	$110,363	$0	$0	$113,703	$0	$113,703	$0	$0	$117,144	$0	$117,144	$0	$0	$120,690	$0	$120,690	$0	$0	$124,342	$0	$124,342	$0	$0	$128,105	$0	$128,105
ADMIN	$588,219	$294,110	$0	$98,037	$980,366	$606,021	$303,011	$0	$101,004	$1,010,035	$624,362	$312,181	$0	$104,060	$1,040,603	$643,257	$321,629	$0	$107,210	$1,072,096	$662,725	$331,362	$0	$110,454	$1,104,541	$682,781	$341,391	$0	$113,797	$1,137,968
ENGINEERING	$331,999	$165,999	$0	$55,333	$553,331	$342,046	$171,023	$0	$57,008	$570,077	$352,398	$176,199	$0	$58,733	$587,330	$363,063	$181,531	$0	$60,510	$605,105	$374,050	$187,025	$0	$62,342	$623,417	$385,370	$192,685	$0	$64,228	$642,284
CVWRF	$839,802	$0	$2,006,984	$0	$2,846,786	$865,218	$0	$2,067,724	$0	$2,932,942	$891,403	$0	$2,130,301	$0	$3,021,704	$918,380	$0	$2,194,772	$0	$3,113,152	$946,173	$0	$2,261,194	$0	$3,207,368	$974,808	$0	$2,329,626	$0	$3,304,434
Total	**$2,500,367**	**$904,317**	**$2,339,452**	**$227,404**	**$5,971,541**	**$2,509,297**	**$891,641**	**$2,390,231**	**$227,612**	**$6,018,780**	**$2,599,044**	**$926,909**	**$2,466,710**	**$235,881**	**$6,228,544**	**$2,647,349**	**$936,749**	**$2,532,257**	**$239,985**	**$6,356,339**	**$2,715,006**	**$957,622**	**$2,605,154**	**$246,002**	**$6,523,783**	**$2,790,928**	**$982,857**	**$2,682,122**	**$252,822**	**$6,708,729**
Percent	**41.9%**	**15.1%**	**39.2%**	**3.8%**	**100.0%**	**41.7%**	**14.8%**	**39.7%**	**3.8%**	**100.0%**	**41.7%**	**14.9%**	**39.6%**	**3.8%**	**100.0%**	**41.6%**	**14.7%**	**39.8%**	**3.8%**	**100.0%**	**41.6%**	**14.7%**	**39.9%**	**3.8%**	**100.0%**	**41.6%**	**14.7%**	**40.0%**	**3.8%**	**100.0%**

Table 15
Mount Olympus Improvement District - Sewer Rate Study
Revenue Requirements by Service Characteristics

	2012					2013					2014					2015					2016					2017				
Item	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**
O&M	$2,500,367	$904,317	$2,339,452	$227,404	$5,971,541	$2,509,297	$891,641	$2,390,231	$227,612	$6,018,780	$2,599,044	$926,909	$2,466,710	$235,881	$6,228,544	$2,647,349	$936,749	$2,532,257	$239,985	$6,356,339	$2,715,006	$957,622	$2,605,154	$246,002	$6,523,783	$2,790,928	$982,857	$2,682,122	$252,822	$6,708,729
Debt Service	$227,055	$115,080	$4,657	$36,808	$383,600	$223,504	$113,280	$4,584	$36,232	$377,600	$219,952	$111,480	$4,511	$35,656	$371,600	$224,688	$113,880	$4,608	$36,424	$379,600	$217,940	$110,460	$4,470	$35,330	$368,200	$216,401.00	$109,680.00	$4,438.50	$35,080.50	$365,600
Capital Outlays	$1,040,025	$527,123	$21,331	$168,597	$1,757,076	$1,025,796	$519,911	$21,040	$166,291	$1,733,038	$915,963	$464,244	$18,787	$148,486	$1,547,479	$926,750	$469,711	$19,008	$150,234	$1,565,704	$1,211,358	$613,961	$24,846	$196,372	$2,046,537	$1,114,840	$565,042	$22,866	$180,725	$1,883,473
Less: Operations Non-Rate Revenue	$1,318,911	$477,016	$1,234,030	$119,953	$3,149,909	$1,319,360	$468,815	$1,256,756	$119,676	$3,164,607	$1,326,828	$473,193	$1,259,271	$120,419	$3,179,710	$1,387,417	$490,930	$1,327,100	$125,771	$3,331,217	$1,393,022	$491,339	$1,336,658	$126,219	$3,347,238	$1,399,349	$492,797	$1,344,794	$126,763	$3,363,703
Less: Expansion Non-Rate Revenue	$69,641	$35,297	$1,428	$11,289	$117,656	$69,739	$35,346	$1,430	$11,305	$117,822	$69,841	$35,398	$1,432.47	$11,322	$117,993	$69,945	$35,451	$1,435	$11,339	$118,169	$70,052	$35,505	$1,437	$11,356	$118,350	$70,163.17	$35,561.28	$1,439.08	$11,374.06	$118,538
Total	**$2,378,895**	**$1,034,208**	**$1,129,982**	**$301,567**	**$4,844,652**	**$2,369,498**	**$1,020,671**	**$1,157,668**	**$299,154**	**$4,846,990**	**$2,338,290**	**$994,042**	**$1,229,305**	**$288,283**	**$4,849,920**	**$2,341,425**	**$993,960**	**$1,227,339**	**$289,534**	**$4,852,257**	**$2,681,230**	**$1,155,199**	**$1,296,374**	**$340,128**	**$5,472,931**	**$2,652,657**	**$1,129,221**	**$1,363,193**	**$330,491**	**$5,475,561**

Table 16
Mount Olympus Improvement District - Sewer Rate Study
Cost Allocations to Customer Classes

	2012					2013					2014					2015					2016					2017				
	Volume	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**	**Volume**	**Capacity**	**Strength**	**Customer**	**Total**
Residential	$1,085,409	$471,874	$515,572	$250,303	$2,323,159	$1,081,182	$465,724	$528,234	$248,304	$2,323,444	$1,066,875	$453,544	$560,886	$239,276	$2,320,582	$1,068,365	$453,533	$560,021	$240,319	$2,322,237	$1,223,473	$527,129	$591,549	$282,318	$2,624,469	###########	$515,304	$622,074	$274,323	$2,622,204
Multiple Unit	$835,952	$363,424	$397,080	$32,348	$1,628,804	$832,540	$358,620	$406,755	$32,083	$1,629,998	$821,649	$349,295	$431,964	$30,922	$1,633,830	$822,642	$349,221	$431,216	$31,051	$1,634,130	$942,220	$405,952	$455,563	$36,483	$1,840,218	$932,056.19	$396,771	$478,981	$35,443	$1,843,251
Commercial	$443,609	$192,856	$210,715	$18,473	$865,654	$441,912	$190,355	$215,905	$18,327	$866,499	$436,094	$185,390	$229,267	$17,662	$868,412	$436,733	$185,398	$228,928	$17,740	$868,799	$499,874	$215,369	$241,689	$20,830	$977,761	$494,608.56	$210,552	$254,178	$20,241	$979,580
Churches	$5,552	$2,414	$2,637.05	$199	$10,801	$5,527	$2,381	$2,700	$197	$10,806	$5,451	$2,317	$2,866	$190	$10,824	$5,456	$2,316	$2,860	$191	$10,822	$6,245	$2,690	$3,019	$224	$12,178	$6,175.09	$2,629	$3,173	$218	$12,195
Schools	$1,989	$865	$945	$133	$3,932	$1,981	$853	$968	$132	$3,933	$1,953	$830	$1,027	$127	$3,937	$1,955	$830	$1,025	$127	$3,937	$2,238	$964	$1,082	$149	$4,433	$2,213	$942	$1,137	$145	$4,437
Government	$6,384	$2,776	$3,033	$111	$12,303	$6,356	$2,738	$3,105	$110	$12,309	$6,269	$2,665	$3,296	$106	$12,335	$6,274	$2,663	$3,289	$106	$12,332	$7,181	$3,094	$3,472	$124	$13,872	$7,101	$3,023	$3,649	$121	$13,895
Total	**$2,378,895**	**$1,034,208**	**$1,129,982**	**$301,567**	**$4,844,652**	**$2,369,498**	**$1,020,671**	**$1,157,668**	**$299,154**	**$4,846,990**	**$2,338,290**	**$994,042**	**$1,229,305**	**$288,283**	**$4,849,920**	**$2,341,425**	**$993,960**	**$1,227,339**	**$289,534**	**$4,852,257**	**$2,681,230**	**$1,155,199**	**$1,296,374**	**$340,128**	**$5,472,931**	**$2,652,657**	**$1,129,221**	**$1,363,193**	**$330,491**	**$5,475,561**
Allocation Basis	Avg. Demand	Pk. Demand	Strength	Account		Avg. Demand	Pk. Demand	Strength	Account		Avg. Demand	Pk. Demand	Strength	Account		Avg. Demand	Pk. Demand	Strength	Account		Avg. Demand	Pk. Demand	Strength	Account		Avg. Demand	Pk. Demand	Strength	Account	

Table 17
Mount Olympus Improvement District - Sewer Rate Study
Calculated Monthly Rates

Monthly Base Rate	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Residential	$ 0.92	$ 0.91	$ 0.88	$ 0.88	$ 1.04	$ 1.01
Multiple Unit	$ 0.92	$ 0.91	$ 0.88	$ 0.88	$ 1.04	$ 1.01
Commercial	$ 0.92	$ 0.91	$ 0.88	$ 0.88	$ 1.04	$ 1.01
Churches	$ 0.92	$ 0.91	$ 0.88	$ 0.88	$ 1.04	$ 1.01
Schools	$ 0.92	$ 0.91	$ 0.88	$ 0.88	$ 1.04	$ 1.01
Government	$ 0.92	$ 0.91	$ 0.88	$ 0.88	$ 1.04	$ 1.01

Volume Rate	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Volume Component						
Residential	*$ 0.66*	*$ 0.66*	*$ 0.65*	*$ 0.65*	*$ 0.74*	*$ 0.74*
Multiple Unit	*$ 0.66*	*$ 0.66*	*$ 0.65*	*$ 0.65*	*$ 0.74*	*$ 0.74*
Commercial	*$ 0.66*	*$ 0.66*	*$ 0.65*	*$ 0.65*	*$ 0.74*	*$ 0.74*
Churches	*$ 0.66*	*$ 0.66*	*$ 0.65*	*$ 0.65*	*$ 0.74*	*$ 0.74*
Schools	*$ 0.66*	*$ 0.66*	*$ 0.65*	*$ 0.65*	*$ 0.74*	*$ 0.74*
Government	*$ 0.66*	*$ 0.66*	*$ 0.65*	*$ 0.65*	*$ 0.74*	*$ 0.74*
Capacity Component						
Residential	*$ 0.29*	*$ 0.28*	*$ 0.28*	*$ 0.28*	*$ 0.32*	*$ 0.31*
Multiple Unit	*$ 0.29*	*$ 0.28*	*$ 0.28*	*$ 0.28*	*$ 0.32*	*$ 0.31*
Commercial	*$ 0.29*	*$ 0.28*	*$ 0.28*	*$ 0.28*	*$ 0.32*	*$ 0.31*
Churches	*$ 0.29*	*$ 0.28*	*$ 0.28*	*$ 0.28*	*$ 0.32*	*$ 0.31*
Schools	*$ 0.29*	*$ 0.28*	*$ 0.28*	*$ 0.28*	*$ 0.32*	*$ 0.31*
Government	*$ 0.29*	*$ 0.28*	*$ 0.28*	*$ 0.28*	*$ 0.32*	*$ 0.31*
Strength Component						
Residential	*$ 0.31*	*$ 0.32*	*$ 0.34*	*$ 0.34*	*$ 0.36*	*$ 0.38*
Multiple Unit	*$ 0.31*	*$ 0.32*	*$ 0.34*	*$ 0.34*	*$ 0.36*	*$ 0.38*
Commercial	*$ 0.31*	*$ 0.32*	*$ 0.34*	*$ 0.34*	*$ 0.36*	*$ 0.38*
Churches	*$ 0.31*	*$ 0.32*	*$ 0.34*	*$ 0.34*	*$ 0.36*	*$ 0.38*
Schools	*$ 0.31*	*$ 0.32*	*$ 0.34*	*$ 0.34*	*$ 0.36*	*$ 0.38*
Government	*$ 0.31*	*$ 0.32*	*$ 0.34*	*$ 0.34*	*$ 0.36*	*$ 0.38*
Total Volume Rate						
Residential	**$ 1.26**	**$ 1.26**	**$ 1.27**	**$ 1.27**	**$ 1.43**	**$ 1.43**
Multiple Unit	**$ 1.26**	**$ 1.26**	**$ 1.27**	**$ 1.27**	**$ 1.43**	**$ 1.43**
Commercial	**$ 1.26**	**$ 1.26**	**$ 1.27**	**$ 1.27**	**$ 1.43**	**$ 1.43**
Churches	**$ 1.26**	**$ 1.26**	**$ 1.27**	**$ 1.27**	**$ 1.43**	**$ 1.43**
Schools	**$ 1.26**	**$ 1.26**	**$ 1.27**	**$ 1.27**	**$ 1.43**	**$ 1.43**
Government	**$ 1.26**	**$ 1.26**	**$ 1.27**	**$ 1.27**	**$ 1.43**	**$ 1.43**

Industrial Surcharges	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Volume Surcharge ($/kgal)	$0.66	$0.66	$0.65	$0.65	$0.74	$0.74
Capacity Surcharge ($/gpd)	$0.0046	$0.0045	$0.0044	$0.0044	$0.0051	$0.0050
BOD Surcharge ($/lb)	$0.0960	$0.0983	$0.1044	$0.1042	$0.1100	$0.1156
TSS Surcharge($/lb)	$0.1336	$0.1368	$0.1452	$0.1449	$0.1529	$0.1607

Table 18
Mount Olympus Improvement District - Sewer Rate Study
Recommended Rates

Monthly Base Rate/RE	2012	2013	2014	2015	2016	2017
Residential	$8.00	$8.00	$8.00	$8.00	$9.00	$9.00
Multiple Unit	$8.00	$8.00	$8.00	$8.00	$9.00	$9.00
Commercial	$8.00	$8.00	$8.00	$8.00	$9.00	$9.00
Churches	$8.00	$8.00	$8.00	$8.00	$9.00	$9.00
Schools	$8.00	$8.00	$8.00	$8.00	$9.00	$9.00
Government	$8.00	$8.00	$8.00	$8.00	$9.00	$9.00

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