

MEMORANDUM

SUBJECT: CITY OF SEDONA 2013 WASTEWATER SYSTEM RATE STUDY

January 17, 2014

To: Karen Daines, Assistant City Manager
Charles Mosley, Director of Public Works/City Engineer

From: Grant Hoag, Project Manager

The purpose of this memo is to document my report on the City of Sedona 2013 Wastewater System Rate Study. The Study is a comprehensive wastewater financial plan, cost of service analysis and rate structure update. The City contracted with Hoag Consulting, LLC in January of 2013 to prepare this Study. The preliminary findings on all Study elements have been previously discussed with City staff and Council; this memo provides documentation supporting the assumptions, findings and recommendations for all elements of the Study. The detailed technical analysis tables and appendices are provided in the final section of the memo.

This memo is supported with an Executive Summary, and is divided into the following sections:

- I. Financial Plan
- II. Cost of Service Analysis
- III. Other Rates and Fees Update
- IV. Recommended Wastewater Rate Structure
- V. Glossary
- VI. Tables and Appendices

Executive Summary

This section summarizes the Study objectives, findings and recommendations of this comprehensive wastewater financial plan, cost of service analysis and rate study.

Background

The City of Sedona owns and operates a wastewater utility providing service to much of the community. The utility currently has more than 6,500 customer accounts, including approximately 4,700 single-family residences and 600 businesses. The wastewater collection system consists of 44 miles of 4 to 21 inch diameter pipelines and numerous lift stations. It conveys sewage to the City's wastewater reclamation plant located 5 miles to the southwest; the collection system has already been extended to another 1,200 undeveloped parcels.

The annual operating budget for the utility is \$3.4 million, plus an additional \$6.1 million in debt service. Capital project expenditure for each of the next five years average \$3.2 million. Current annual funding for the utility costs includes \$5.3 million in rate-based revenues and \$4.0 million in citywide sales tax subsidies to the utility enterprise. Currently, single family dwelling residential households pay \$47.34 monthly for wastewater services.

Key Study Objectives

The key study objectives addressed in this Study are:

- I. Prepare a wastewater enterprise financial plan identifying annual rate-based revenue requirements beyond the duration of the existing debt service, and evaluate the financial impact of reducing the sales tax subsidies to the enterprise;
- II. Analyze the cost of service equity of wastewater charges to the local restaurants and other customers based on flow and strengths of sewage discharges;
- III. Update the equitable charges for vacant businesses, minimum monthly service charges, septage dumping and other charges; and
- IV. Identify alternative wastewater rates based on metered water demands.

Key Recommendations

We recommend that the City of Sedona adopt the following wastewater service customer billing structural changes:

- I. Based on our financial plan, for the next six years increase the wastewater rate-based revenues by 4 percent annually and immediately reduce the sales tax subsidies from the current 35 percent transfer to 30 percent, followed by a reduction to 25 percent in FY 2017-18;

- II. For all customer classifications, implement one-time adjustments to unit rates based on the cost of service analysis findings for billing proportionality, including a new minimum charge for all commercial accounts;
- III. Based on the findings of the 2013 Wastewater Capacity Fee memo, enact updated fees;
- IV. Enact the updated wastewater charges and fees including availability charges and septage disposal fees; and
- V. For all restaurants and hotel with independent, dedicated (unshared) water service metering, switch to water flow-based wastewater charges that vary with actual water usage. The change-over will be mandatory as of FY 2015-16; restaurants without independent meters or without a 12-month water usage history will be billed based on the customer serving areas.

These key recommendations are based on the Study technical analysis and are supported by the calculation tables included at the end of this report. The study process has included discussions with City staff and with City-wide restaurant managers, and has used data from the two water companies serving the City. A variety of alternatives were evaluated and discussed with staff; these recommendations are believed to best reflect the goals and needs of the City's residents and businesses. The recommendations are made pursuant to ARS 9-511.01 and other Arizona statutes, and are based on the Water Environment Federation Manual of Practice No. 27 for wastewater rate-making.

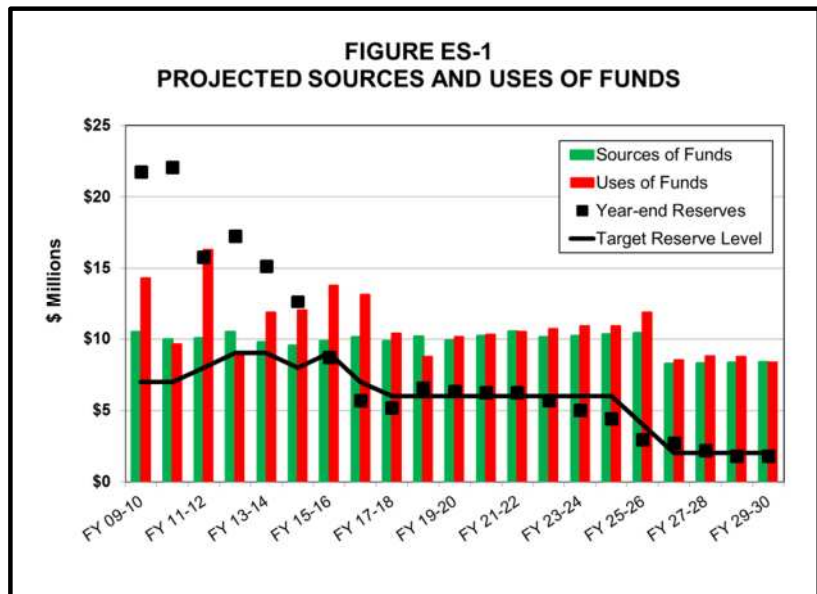
The following is a summary of the findings of each of the four technical analysis sections of this Study.

I. Financial Plan (Tables 1 to 12)

The wastewater utility enterprise is currently in very good financial health, with sufficient revenues for operating expenses and abundant reserves for the on-going capital projects. However, unlike most self-supporting utility enterprises, the wastewater utility funding relies on \$4 million per year in local sales taxes to subsidize 34 percent of the required expenditures. These tax subsidies support the existing debt service payments, which will end in FY 2026-27 (Year 14 of the Financial Plan).

Based on the projected utility costs and expenditures, and current level of sales tax transfers to the wastewater utility, no increase in rate-based revenues is required in this current year (FY 2013-14). However, we recommend that the sales tax subsidies (currently at 35 percent of the total citywide sales tax proceeds) be reduced to 30 percent next year in FY 2014-15 and to 20 percent by FY 2019-20 (Year 7), and that the wastewater service charge revenues be concurrently increased by the same amount using a series of six annual rate-based revenue increases of 4 percent, starting in FY 2014-15 (Years 2 through 7). By reducing the tax subsidies to the wastewater enterprise, these revenues can fund other City services by almost \$2 million per year. As shown in Figure ES-1, with this Financial Plan, the wastewater enterprise cash reserve levels will remain at or above target levels for most projected years, and will never decline below a prudent level.

Using these recommendations, by FY 2022-23 (Year 10), the residential rate will increase by 38 percent over the current rates. In the remaining years of the Plan, the wastewater rates will not be increased. Over the entire 17 year Plan, the proposed rate increases will average 1.9 percent annually, while inflation is projected to be 3 percent. Over the 17 year Plan the City general fund sales tax subsidies to the wastewater fund will total more than \$37 million. The sales tax subsidies to the wastewater fund will be eliminated in FY 2026-27 (Year 14) when the debt service of approximately \$4 to \$5 million per year is fully paid off. The Plan duration serves to identify the financial impacts of the paying-off the outstanding debt, but note that the credibility of the rate-based revenue requirement projections is significantly enhanced if the Plan is updated every four to five years.



II. Cost of Service Analysis (Tables 13 to 21)

The cost of service analysis (COSA) recommendation for billing proportionality ranges from a one-time negative 27 percent reduction (in billing rates) to a one-time increase of 23 percent.

For the 2,700 regular single family residential customers, the rate increase for proportional billing equity is a 10.3 percent increase. For the 2,000 low-flow residential customers, a rate decrease for proportional equity of 5.4 percent is recommended. The most significant change in rates for proportional equity is a 27 percent decrease in restaurants rates. The greatest increases in rates are for Other Commercial accounts (all commercial accounts other than hotels and restaurants). For this consolidated group of 471 accounts, a 23 percent increase for proportional equity is identified.

We recommend that the one-time COSA adjustments be implemented in FY 2014-15 concurrently with the proposed rate-based revenue increases previously identified in the Financial Plan. Alternatively, if the 23 percent one-time COSA increase is so high as to cause rate-shock to certain Other Commercial customers, then all COSA-based recommendations for all customer classes (including the reductions) can be more slowly phased-in over several years concurrent with the Financial Plan recommendations.

III. Other Rates and Fees (Tables 22 to 24)

We recommend that Sewer availability monthly charges for sewerred but undeveloped parcels remain at 0.5 ERUs. A minimum monthly bill for all active non-residential wastewater accounts

should be at 0.63 ERUs, regardless of the bill calculated from the rate schedule. We recommend that the septage fees be increased by 20 percent.

IV. Recommended Wastewater Rate Structure (Tables 25 to 29)

We recommend that the City adopt a proportional and equitable rate structure based on the enactment of the cost of service analysis recommendations and the recommended rate-based revenue increases, starting in FY 2014-15. We have found that the water usage-based wastewater billing is appropriate for qualified restaurant and hotel/resort customers, but is not warranted for either other commercial accounts or for the residential customers. Therefore, we recommend qualified restaurants and hotels convert to water flow-based wastewater charges that vary with actual water usage, starting in FY 2014-15 and with a deadline in FY 2015-16. Billing of residential accounts using water usage was evaluated, but is not recommended.

I. Financial Plan

The purpose of this financial plan (Plan) is to develop a multi-year forecast of the rate-based revenue requirements. These revenues are needed to fund utility operations and maintenance, debt service and capital projects for the projected fiscal years FY 2013-14 through FY 2029-30 (Years 1 through 17). The 17 year duration of the financial plan encompasses FY 2026-27 (Year 14), when all bonded debt is paid off and the sales tax subsidies to the utility can be eliminated. Tables 1 to 12 analyzing the Plan are described in detail at the end of this Financial Plan section. The key to the Plan is coordinating two major financial events in the wastewater fund enterprise:

- The end of the annual \$4 million debt service payment in FY 2026-27 (Year 14), and
- The reduction and elimination of wastewater utility subsidies from citywide sales tax proceeds over the projection period.

Over the next 10 years, the local community benefits of sales tax proceeds for general fund activities such as road maintenance, parks and other public services may be more than its value in subsidizing wastewater fund costs. Therefore, the optimum wastewater enterprise Plan includes a balance between (1) a steady and timely reallocation of citywide sales tax revenues from subsidizing the wastewater fund to supporting other City services, (2) sustainable rate-based funding of essential wastewater utility services to protect community health and quality of life, and (3) the avoidance of rate shocks from too rapid an increase in wastewater service charges to the local residents and businesses.

Recommendations

The key product of a financial plan is a multi-year projection of rate-based revenue requirements that identifies uniform annual changes to the current utility rate structure. Our Plan finding is that the wastewater utility enterprise is currently in very good financial health, with sufficient revenues for operating expenses and abundant reserves for the on-going capital projects. However, unlike most self-supporting municipal utility enterprises, the wastewater utility relies on \$4 million per year in local sales tax subsidies. This \$4 million represents 35 percent of the City-wide sales tax revenues to subsidize 34 percent of the wastewater expenditures. These tax subsidies support the existing debt service payments, which will end in FY 2026-27 (Year 14), so the optimum Plan is based on the staged drawdown and elimination in the current subsidies in 5 percent increments (35 to 30 percent etc.) until all debt is paid off, as which point the remaining subsidy can be stopped completely. The most immediate reductions are:

- 35 percent to 30 percent in July 2014, for FY 2014-15,
- 30 percent to 25 percent in FY 2017-18 (Year 5), and
- 25 percent to 20 percent in FY 2019-20 (Year 7).

Based on the projected utility costs and expenditures, and current rate of sales tax transfers to the wastewater utility, we recommend that the wastewater service revenues be increased in a series of six annual rate-based revenue increases of 4 percent starting in FY 2014-15 (Years 2

through 7). By reducing the subsidies to the wastewater enterprise, these sales tax revenues can fund other City services by almost \$2 million per year, by 2020.

Note that during this six year period, the capital improvement plan expenditures are \$15 million; these projects are associated with significant increases in the wetlands receiving the highly-treated effluent for the wastewater treatment plant, and exclude any expansion of the sewage collection system of pipelines. The funding of these projects will come from a \$10 million drawdown of bond proceeds, plus the use of net operating revenues. These projects are required to comply with the wastewater treatment plant discharge permit, and to prevent sewage spills by repairing the aging sections of the sewage collection system.

Using these Baseline Plan recommendations, by FY 2022-23 (Year 10) the residential rate will have increased by 38 percent over the current rates. There is no rate increase in the remaining years of the Plan. Over the entire 17 year Plan, the proposed rate increases will average 1.9 percent annually, less than the projected annual inflation of 3 percent. Over the 17 year Plan the City general fund sales tax subsidies to the wastewater fund will total more than \$37 million. The sales tax subsidies to the wastewater fund will be eliminated in FY 2026-27 (Year 14) when the debt service of approximately \$4 to \$5 million per year is fully paid off.

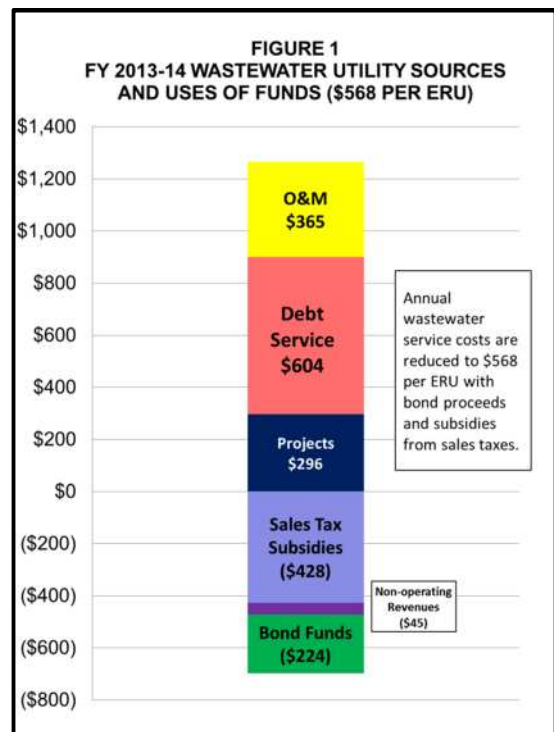
In the following sections of the Financial Plan, the projected annual rate-based revenue requirements are detailed, several financial plan alternatives to the Baseline Plan recommendation are described, and a sensitivity analysis on the costs assumptions is documented.

Current Revenue Requirements

The wastewater utility system is operated as a stand-alone business enterprise run by the City. The utility enterprise is audited; annual reports include a balance sheet, revenue and expenditure itemization and a sources and uses of funds statement. Non-cash expenses of depreciation are part of the audits; for development of this financial plan the actual flow of funds in the capital improvement plan project expenditures is emphasized over non-cash expenses such as depreciation. In the Plan, we have used inflation adjusted capital expenditures that grow to \$3.3 million per year in 2028 to represent deprecation-related system rehabilitation and replacement costs.

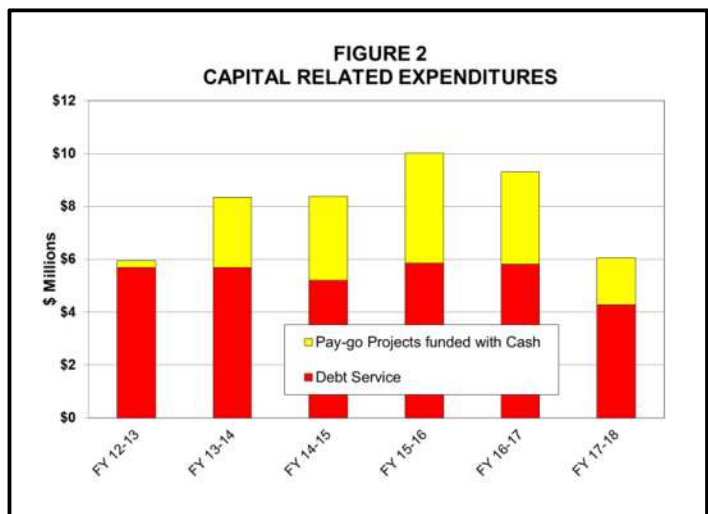
Last fiscal year (FY 2012-13), the total sources of funds were \$10.6 million. These were from sewer service charges to customers (50 percent of total revenues, based on \$568 annually per residence), citywide sales tax subsidies for debt service (42 percent of revenues), capacity fees from new connections to the system (which vary year to year, but were 5 percent), and other miscellaneous revenues plus interest earnings on cash reserves (3 percent). The uses of the wastewater system funds during FY 2012-13 include debt service (66 percent), labor costs (11 percent of total), supplies and services (17 percent) and projects (6 percent). The project expenditures, most of which funded from bond proceeds, will be significantly higher over the next five years. In this current fiscal year (FY2013-14), the existing cash reserves available for pay-go funding of wastewater projects exceeds \$10 million.

Figure 1 illustrates the FY 2013-14 sources and uses of funds for each single-family dwelling customer. As shown, the current sewer service charges of \$568 per year covers the annual operating and maintenance costs and some project expenditures, while debt service is supported with sales tax subsidies to the wastewater utility and project costs are funded from bond proceeds. Municipal utility financial planning goals typically require sewer service charges to fund no less than the operating expenditures and the non-cash depreciation of the enterprise. Details on the revenue requirements are provided in the following section.



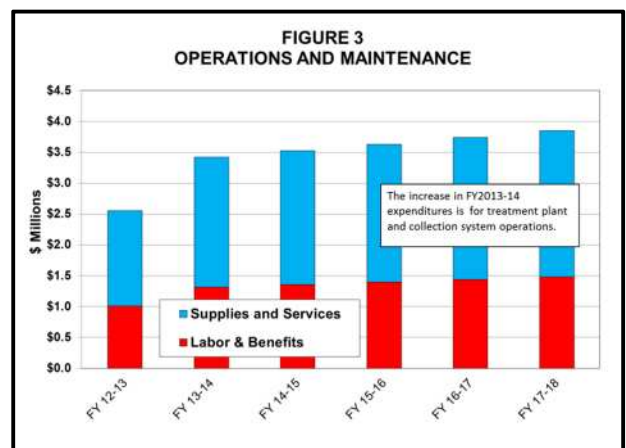
Projection of Wastewater Utility Expenditures

A five-year projection of expenditures is divided between capital-related expenditures for projects and debt service, and Operation and maintenance (O&M) costs. Note that the total Plan covers the next 17 years in order to include the major financial events to the wastewater fund, but only the most immediate five years are detailed in this description.



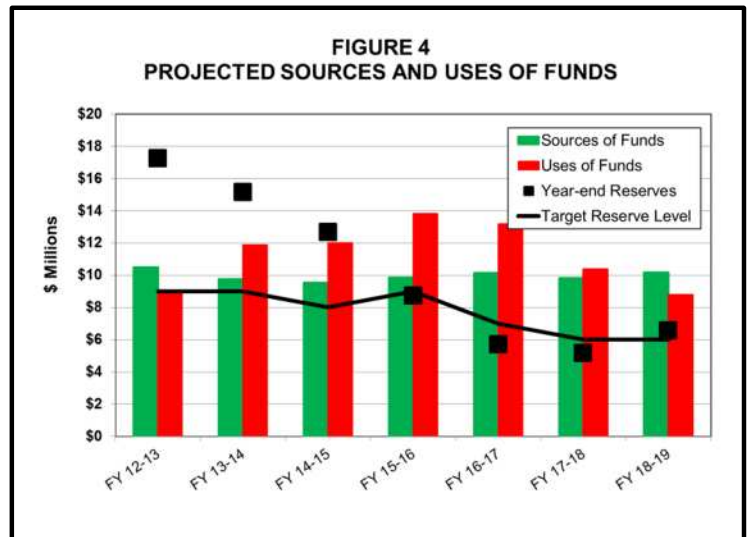
The capital-related expenditures including debt service are illustrated in Figure 2. The project expenditures are based on the five year capital improvement plan (CIP) of \$14.8 million through FY 2017-18. The projects will be funded on a cash pay-as-you-go basis.

O&M costs include labor and supplies, and services. The supplies and services consist of plant maintenance, utilities and other operating costs. Figure 3 illustrates these costs. As shown, in FY 2012-13 O&M costs were \$1.0 million for labor and \$1.6 for supplies and services, for a total of \$2.6 million. In contrast, in FY 2008-09 O&M costs were \$2.9 million. The O&M expenditures are projected to grow to \$3.9 million, due to an annual inflation rate of 3 percent and enhanced treatment levels at the City’s Wastewater Reclamation Plant.



Projection of Sources and Uses of Funds

The Baseline Financial Plan results in the funding of utility operations and the CIP. Figure 4 illustrates the total sources and uses of funds in the Plan over a projected six years to FY 2018-19 (Year 6). As shown, with an unchanged level of combined rate-based and sales tax revenues, the projected cash reserves will decrease by \$12 million to \$5 million in Year 5 due to capital project expenditures. The cash reserves target is based on having working cash for operating expenditures of 10 percent of the annual O&M budget, project contingency funds for unanticipated expenditures of 20 percent of the average annual pay-go project expenditures, and one year of debt service.



The rate-based revenue requirements of the Baseline financial plan utilizes a low 0.5 percent growth rate in residential accounts through 2015, followed by a slightly higher 0.6 percent annual growth. The number of non-residential (commercial) wastewater accounts is not projected to change significantly for the purposes of this study.

To fund the projected expenditures over the projection period, the current rate-based revenues must increase by 4 percent annually for six years starting in FY 2014-15 (Years 2 through 7), followed by increases of 3 percent annually over the following three years to FY 2022-23 (Year 10), with no increases thereafter. As previously described, the percentage of Citywide sales tax revenues subsidizing the wastewater fund will decrease from the current 35 percent to 20 percent by FY 2019-20 (Year 7), will drop to 15 percent in Year 10 and will end with the last debt service payment in FY 2026-27 (Year 14). With this projected balance of sources and uses of funds, the year-end cash reserves will settle on target at \$6 million in FY 2018-19 (Year 6), and will slowly decline to meet the post debt-service target reserve level of \$2 million by FY 2029-30 (Year 15).

Alternative Financial Plans

The proposed Baseline Financial Plan maintains the current level of total utility revenues by increasing rate-based revenues while reducing the proceeds of sales tax subsidies. The following three financial plan alternatives were evaluated as options to the proposed Baseline Plan. The first two alternatives fully fund the utility, and vary only by the speed the sales tax subsidies are eliminated and wastewater rates are increased. The third alternative demonstrates the effect of failing to back-fund the elimination of subsidies. The recommended Plan and the three alternative five-year financial plans to this Baseline are:

- **Recommended Baseline Financial Plan.** 4 percent annual rate increases for six years through Year 7, concurrent with a reduction in sale tax subsidies from the current 35 to 20 percent;

- Alt. A: No rate increases or sales tax subsidy reductions for five years;
- Alt. B: Eliminate the sales tax subsidies by FY 2022-23 (Year 10) with higher rate increases; or
- Alt. C: Enact the recommended Baseline rate increases while eliminating subsidies by Year 10.

The financial results of these alternatives are:

Alt. A. No Immediate Rate Increases. Monthly rates would remain unchanged at the current \$47.34 per month per Equivalent Residential Unit (ERU) through FY 2017-18 (Year 5), and the existing 35 percent sales tax subsidy would be kept intact. By FY 2022-23 (Year 10), the residential rate must be increased by 23 percent over current rates. Thereafter, eight rate increases of up to 4 percent per year are required, and the wastewater fund subsidy is reduced slowly until both the debt and the subsidies diminish to zero in FY 2026-27 (Year 14). The biggest advantage of this alternative is a delay of four years in raising the customer wastewater rates, while the biggest disadvantage to the City is that wastewater subsidies from the City's general fund are more than \$9 million higher than the Baseline Plan.

Alt. B. Eliminate the subsidies by Year 10. This alternative quickly reduces the sales tax subsidy to zero in ten years rather than over the 14 years of remaining debt service. It requires annual rate increases of 6 percent to 8 percent in Years 2 to 10, which increases the residential rate by 79 percent from \$47.34/month to \$84.60, by Year 10. Concurrently, the \$4 million per year in sales tax currently subsidizing the wastewater fund is increasingly available to other City services. However, the wastewater rates replace the sales tax subsidies before the debt service is completed, so after the debt service ends, the level of total revenues is excessive. As such, after debt service ends in Year 14, the wastewater rates can be reduced by approximately 20 percent.

Alt. C. Enact the Baseline Rate Increases but Eliminate Subsidies by Year 10. This alternative attempts to have it both ways by both reducing the subsidy to zero in ten years, but keeping the rate increases to the preferred Baseline Plan schedule. By FY 2019-20 (Year 7) the wastewater utility is out of cash.

None of these three alternatives is believed to have a better balance of rate increases and subsidy elimination than the Baseline Plan.

Sensitivity Analysis

The recommended Baseline Plan includes a number of cost, growth and inflationary assumptions. A sensitivity analysis was prepared to determine the impact of varying these key assumptions on the short-term Baseline Plan recommendations. Note that the short-term Baseline Plan recommendation is for six four-percent annual rate increases in FY 2014-15 through FY 2019-20 (Years 2 through 7).

In the recommended Financial Plan, the baseline assumptions are:

- 3 percent annual inflation on operations and projects;
- 0.5 percent annual growth in the number of residential connections; and

- 2 percent annual growth in citywide sales taxes.

The assumption values varied are: (1) annual inflation on operations and projects, (2) annual customer growth, (changes) in the number of residential connections, (3) faster economic growth and increasing sales tax revenues, and (4) changes to the capital project costs. The key findings are:

- Inflation on operating and project costs has the biggest impact on rate-based revenue requirements. If, over the next six years, inflation is actually 1 percent per year rather than the projected 3 percent, then the six 4 percent annual rate increases can be reduced to six 2.6 percent increases. Alternatively, one annual increase of 4 percent can be eliminated in Year 4. Conversely, if the annual inflation is actually 5 percent, then the six 4 percent annual rate increases must be increased to six increases of 5.4 percent.
- Growth in customer accounts has the second biggest impact on rates. If, over the next six years, the number of residential customers actually increases by 2 percent per year, then the six 4 percent annual rate increases can be reduced to 3.2 percent. Conversely, if the number of residential customers actually decreases by 1 percent per year, then the six 4 percent annual rate increases must be increased to 5 percent each. This asymmetrical impact is due in part to the Sewer Availability Charge.
- Growth in sales taxes is likely to vary from the 2 percent annually projected in the base case. If the growth is only 1 percent, then the annual rate increases must be increased from 4 percent to 4.3 percent; this impact is not material compared to the other variables.
- If capital project construction costs are 20 percent more than projected in the CIP, then the six 4 percent annual rate increases must be increased to 5 percent each.

In conclusion, the greatest impact of changes to the assumptions used in the Baseline Plan recommendations is from inflation and customer growth, both of which are outside of the control of the City. On a practical basis, changes in the findings from variances in the assumptions will not manifest themselves before Year 3 of the Plan. Therefore, the enacted Plan should be monitored for variances with the actual wastewater enterprise cashflows and cash reserve levels in the following years, and corrective adjustments to the recommended annual rate adjustments be enacted to maintain the financial health of the utility.

City Rate Comparison

As detailed in Table 12, the City's current monthly sewer service bill of \$47.34 per ERU is lower than the bills for five larger communities of Sahuarita, Chino Valley, Prescott City, Kingman and Lake Havasu City, at a water consumption of 10 Hgal. However, Sedona's rates are higher than the statewide average of \$32.79 and of several other local communities.

Detailed Financial Plan Tables 1 to 12

The detailed financial plan in this section describes the technical calculations developing the Baseline Plan, based on a series of tables that model the sources and uses of funds in the Plan. These tables are located at the end of this report.

Table 1 Assumptions. The purpose of this table is to summarize the current financial indices and general wastewater utility financial policies. City policy is to have target reserves totaling 10 percent of annual costs, capital contingency reserves of 100 percent of average year pay-go project expenditures, and reserves of one year of debt service. Other conservative assumptions include a minimum of customer growth and a 3 percent inflationary escalation in annual operating and capital costs. We have estimated that the City will receive 1.3 percent interest earnings on cash reserves. Per City staff, the utility can anticipate 0.5 percent annual growth in residential accounts until the end of FY 2014-15 and 0.6 percent thereafter. There will be no growth in commercial accounts throughout the Study period.

Table 2 Sewer Service Accounts. The purpose of this table is to list the utility's existing sewer service customer accounts, as of FY 2012-13. As shown, there are almost 30 different customer classifications, in addition to the penalty charges for Deferral Fees and Environmental Fees. Each classification lists the number of accounts, number of billing units and their unit rates, the May 2013 and estimated FY 2012-13 charges in dollars and the billable equivalent residential units (ERUs). The billing system is based on ERUs, with 1.0 ERU equal to the customer burden associated with an average single family residential customer connection. Based on the reported current number and type of billing accounts, the City has a customer base of 9,353 ERUs, up from 8,370 ERUs in 2009 due to growth and the addition of the Sewer Availability charge to undeveloped parcels with access to the wastewater system. The budgeted customer revenue for FY 2012-13, net of bad debt from 3 percent from non-payment of service charges, is \$5.1 million.

Table 3 Projected Billable Customers. The purpose of this table is to project the future wastewater customer accounts and ERUs. Based on the low growth projections, the 9,353 billable ERUS in FY 2012-13 will grow to 9,515 ERUs by FY 2017-18, and 9,877 by FY 2027-28.

Table 4 Sales Tax Subsidies to Wastewater Utility. The purpose of this table is to project the City sales tax subsidies to wastewater enterprise under the Baseline Plan. In FY 2013-14 the wastewater utility is projected to receive \$4.0 million in sales taxes subsidies at a transfer rate of 35 percent of the total sales tax revenues to the City. With a 2 percent growth in the local economy, and a reduction in wastewater fund transfers from 35 percent to 20 percent by FY 2019-20 (Year 7), the current \$4.0 million subsidy is projected to decline to \$2.6 million over seven years, and be eliminated by FY 2026-27 (Year 14), when the wastewater debt service is fully paid off.

Table 5 Historical & Budgeted Revenues. The purpose of this table is to summarize historical and budgeted utility revenues. As shown, the revenues are divided between operating and non-operating revenues. The major sources of revenues are the wastewater service charges and the sales tax subsidies. The wastewater service charge revenues are projected at \$5.0 million in FY 2013-14 (\$5.3 million including Standby Fees), and the sales tax subsidies are budgeted at \$4.0 million. Non-operating revenues, including \$177,000 in interest earnings on cash reserves, total \$436,000 in FY 2013-14.

Table 6 Debt Service. This table summarizes the projected debt service from the four different bond series. As shown, over the next five year the debt service including interest and principal varies between \$4.7 million in FY 2017-18 to \$5.8 million in FY 2015-16. Currently, the

wastewater enterprise has \$39.9 million in outstanding debt, but with the significant principal payoffs for Series 2004, 2005 and 2007 bonds that outstanding debt will drop to \$22.7 million over five years. No new bonds or debt-financed capital projects are planned for the wastewater enterprise.

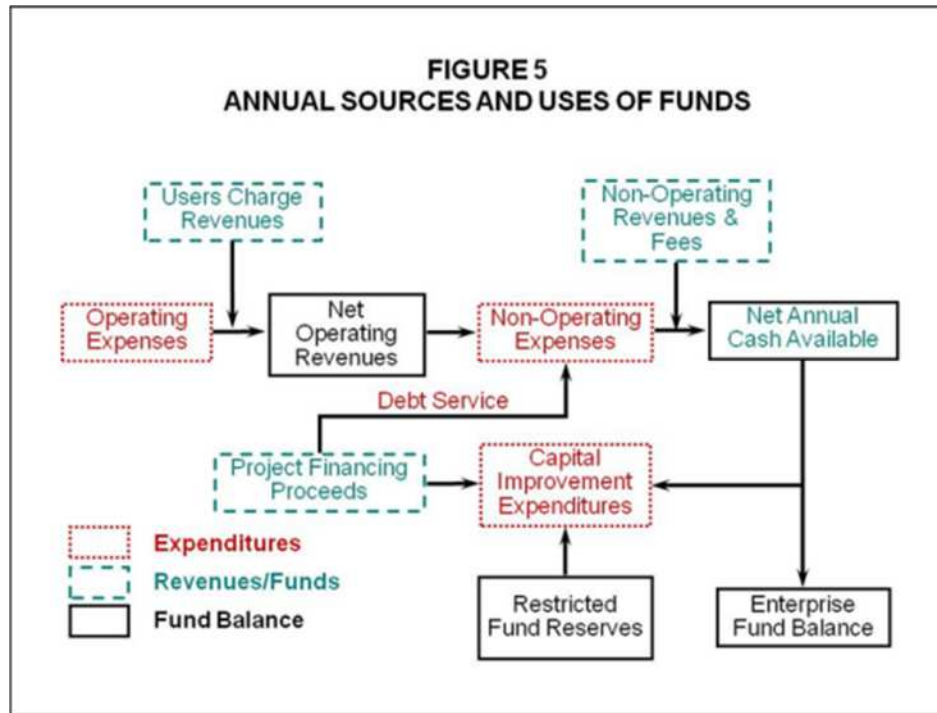
Table 7 O&M Budget. The purpose of this table is to detail the estimated FY 2012-13 operating and maintenance (O&M) expenditures, and provide the approved budget for the current FY 2013-14. As shown previously in Figure 3, the current O&M budget of \$3.4 million includes \$2.1 million for supplies and \$1.3 million for labor. At \$1.3 million, the budgeted expenditures at the Wastewater Reclamation Plant (WWRP) are the highest, followed by the wastewater collection system of pipelines and pump stations at \$1.2 million, and administrative services, customer service and utility management at \$1.0 million. Annual non-cash depreciation of \$2.5 million is not an element of the rate calculations.

The current FY 2013-14 budget is \$869,000 higher than the FY 2012-13 estimated expenses due to increasing operating costs of the WWRP and collection system. Part of this increase is \$77,000 in utility salaries, primarily due to allocating additional portions of existing City-wide staff salaries to the WWRP. Non-cash depreciation is not part of the sources and uses of funds cashflow analysis.

Table 8 Capital Improvement Program. The purpose of this table is to tabulate the projected \$14.8 million in capital improvement project expenditures for years FY 2013-14 through FY 2017-18 (Years 1 through 5) approved by City Council on June 25, 2013. As shown previously in Figure 2, the projected annual expenditures are between \$1.6 million in FY 2017-18, and \$4.1 million in FY 2015-16. A total of \$7.9 million is for WWRP effluent disposal improvements. The project costs have been escalated for inflation for the cashflow analysis. All projects are funded from a combination of cash reserves and pay-go funding, and no new bonds will be required.

Table 9 Target Cash Reserve Requirements. The purpose of this table is to identify the appropriate level of cash reserves based on current financial policies for the wastewater enterprise. As shown, the annual target is based on having working cash for uneven operating expenditures of 10 percent of the annual O&M budget, project contingency funds for unanticipated expenditures of 20 percent of the average annual pay-go project expenditures, and one year of debt service. The reserve target for FY 2018-19 (Year 6) is \$5 million, but drops to \$2 million with the pay-off of all debt principal in FY 2026-27 (Year 14).

Table 10 Projected Utility Cashflow. The purpose of this key table is to project the rate-based revenue requirements and wastewater utility financial performance for the next five years and beyond. The calculations are based on a cashflow projection of the annual sources and uses of funds, as illustrated in Figure 5.



This table combines the projected debt service, budgeted operating expenses (with inflationary escalations) and capital expenditures of the prior tables. It contrasts these funding requirements with the current annual revenues in an annualized sources and uses of funds analysis. It compares the annual net cash shortfall (or additions) with the cash on hand to calculate the drawdown from (or increase to) the enterprise reserves. Based on a comparison with the cash reserve targets, any required changes to the level of rate-based revenues are recommended. In the case of this Baseline Plan, a series of six annual 4 percent rate-based revenue increases is recommended while the sales tax subsidies are reduced, followed by lower rate increases.

As described in the Plan summary, the wastewater utility enterprise is in very good financial health, with sufficient rate-based revenues for operating costs and abundant cash reserves for the approved CIP. As shown previously in Figure 4, the current reserves as of the beginning of FY 2013-14 are estimated at \$17.3 million, including the working cash and capital contingencies. This reserve level is down from \$21.7 million in 2009 due to project expenditures in the prior years.

Table 11 Sewer Service Charges. The purpose of this table is determine the true cost of the wastewater utility versus the current customer charges, as previously shown in Figure 1. The current sewer service charge is \$568 per ERU-year, or \$47.34 monthly. As shown, the FY 2013-14 the true cost of wastewater services is \$996 per year (\$83 monthly). This true cost is reduced by 43 percent with a combination of subsidies from city sales taxes and drawdowns of

available reserves. Specifically, in FY 2013-14 the shortfall in sources of funds is supported from a drawdown of \$224 per year in cash reserves, and sales tax subsidies of \$428 per ERU.

The current rate-based revenues do fund the wastewater utility's annual operating costs of \$365, and much of the annual non-cash depreciation expense. However, in the municipal utility industry it is irregular if any subsidies are used, especially for a utility budgeted within an enterprise.

Table 12 Rate Survey. Table 12 provides a comparison of the sewer service charges for Sedona and other wastewater utilities in Arizona. Comparisons of sewer service charges among different communities are popular, but can be misleading; the City's rate subsidy from sales tax proceeds being a case in point. In addition, the costs of a community's wastewater utility service that are outside the control of a local city government include:

- Permit-based discharge quality and costly regulations required by state regulators;
- Residential densities impacting average pipeline costs;
- Economies of scale affecting unit costs of overhead compared to larger communities;
- Soil condition and topography impacting collection system construction costs; and
- Land costs for treatment plant sites.

Alternative revenue sources for wastewater utilities will also affect monthly sewer service charges. These include:

- Tax subsidies, including sales and property;
- Special improvement districts with benefit assessments on property tax rolls;
- Interfund transfers from city general funds;
- State and federal project grants and low interest rate loans; and
- Labor costs and power rates in the community.

A proper comparison of charges is typically prepared in a benchmarking study, which will segregate the costs, revenues and service levels to normalize the comparison. Otherwise, a wastewater rate survey should be critically reviewed.

As shown in Table 12, City of Sedona's current sewer service bill of \$47.34 per ERU is lower than the bills for five larger communities of Sahuarita, Chino Valley, Prescott City, Kingman and Lake Havasu City. However, Sedona's rates are higher than the statewide average of \$32.79 and of several other local communities.

II. Cost of Service Analysis

The purpose of a cost of service analysis is to validate that the City's costs of providing wastewater service are proportional to the charges billed to the different customer classes served. The cost of service analysis is based on the cost of service calculation methodology defined in the Water Environment Federation Manual of Practice No. 27, as is done herein. The COSA is based on a single audited test year, but the findings will remain reliable over several years for any normally occurring changed conditions such as minor customer growth. The COSA does not address financial plan issues such as inflation or bond funding of capital; nor are the wastewater system subsidies from sales taxes integrated into these findings. This cost of service analysis (COSA) is based on the premise that a wastewater system is designed to serve a variety of sewer loads from different users, and that the wastewater charges to the customer should be proportionate to the costs of these loads.

The COSA is based on the audited wastewater system operating and capital-related costs from FY 2011-12, the system sewage flows, and the customer discharges. The most recent audited City Comprehensive Annual Financial Report available to the Study was from FY 2011-12, and is the test year for the COSA. The estimates of sewage flows are based on Arizona Water Company water sales to the wastewater customers, standard sewage strengths for restaurants and other commercial accounts, and a mass balance calculation of water sales to restaurants, hotels, other commercial accounts, single family residences and multi-family apartments with the recorded wastewater flows to the City wastewater reclamation plant.

The COSA findings support changes to the wastewater rate structure for improving customer bills so that the charges are proportional to the projected City costs of service. Any changes identified in this COSA are in addition to the rate-based revenue requirements described in the prior section. Tables 13 to 21 detailing the COSA are described at the end of this section.

COSA Findings and Recommendations

The following recommend COSA adjustments are revenue-neutral. In other words, unlike the annual increases in total rate-based revenues defined in the previous Baseline Plan, the sum of the COSA-based increases and decreases in rates will not change the total annual revenues to the City. Instead, these charges are recommended for improving wastewater service billing equity and proportionality among the different customer classifications.

As a rule of thumb, a cost of service finding within 10 percent of the target level for a customer class with at least 10 percent of the system loads can be considered equitable. For this reason, the equity findings on customers, while exact, must be treated as general indications of the equity of the current charges rather than as the singular representation of the billing proportionality. Regardless of the level of credibility, updated charges should be equitable within the reasonable limitations of the agency's billing capabilities.

While the COSA conclusions on the proportional share of the wastewater utility costs among the different customer classes is based on a set of structured formulaic calculations defined by the Water Environment Federation Manual of Practice No. 27, the historical basis for the existing charge structure is not addressed in this study; a formal explanation for the current charges is not included in this study, which focuses on a defensible recommendation for a future rate structure.

The COSA is based on three utility (City) cost categories:

- Wastewater flow-related costs in moving sewage through the collection system and treatment plant;
- Sewage strength-related costs from the removal of biochemical oxygen demands and total suspended solids from the sewage during in the treatment process; and
- System management and Customer Administration costs.

These three cost categories are cross-referenced to the service functions delivered to each wastewater utility customer; their level of service requirements defines the costs that are proportionally recovered from the customer through their service charges.

The COSA findings and recommended changes for billing proportionality are:

- The 2,700 Single Family Dwelling (SFD) standard residence accounts discharge 36 percent of the system loads; their rates should be increased by 10 percent;
- The 2,000 SFD low-flow households discharge 22 percent of the system loads; their rates should be decreased by 5.4 percent;
- The Multi-family Dwelling (MFD) accounts discharging 2 percent of the system loads should have their rates decreased by 17 percent;
- The 76 Restaurant accounts are 12 percent of the total customer loads, and pay 39 percent of all commercial wastewater charges. They are treated as a key customer classification along with SFD customers. Restaurant rates should be decreased by 27 percent;
- The 71 Hotels accounts are 20 percent of the total customer loads, and pay 45 percent of all commercial wastewater charges. They are treated as a key customer classification along with SFD customers. Hotel rates should be increased by 6.4 percent;
- The 471 accounts classified as other commercial business discharge 8 percent of the wastewater system loads. Their rates should be increased by 23 percent.

The COSA rate increases or decreases are in addition to the rate-base revenue increases identified in the Baseline Plan.

Changes in Single Family Dwelling Flows

Consistent with the higher sewage strength levels observed by another City study, the mass balance analysis in COSA Tables 17 through 21 identifies that the SFD household average sewage flow has decreased by 25 percent from the historical 6,080 gallons per month to 4,584 gallons per month (203 gpd to 153 gpd). In contrast, the low-flow SFD household flows have decreased 42 percent due to vigorous conservation efforts. It is unlikely that there has been any reduction in the BOD or TSS solids discharged from either household class, and there has been

no reduction in the City's obligation for 24/7 service availability to accept any discharges, as represented by its readiness to serve. The drop in residential sewage flows does not materially reduce the City's overall costs of owning and operating the utility, but does result in an increase in the proportion of utility costs that should be collected from non-residential versus residential customers.

Rate Shock Avoidance

These COSA recommendations for billing proportionality result in a 23 percent increase in the wastewater charges to the 471 other commercial customers (not including hotels, resorts or restaurants). To minimize the rate shock to these accounts, the City may wish to consider phasing-in the COSA changes over several years concurrently to the rate-based revenue increases. In order to collect the correct rate-based revenues each year, if the COSA changes are to be phased-in, then both the increases and decreases in equity should occur, i.e. the decreases in rates should be phased-in as well as the increases.

Restaurant Sewage Discharge Characteristics

The results of an in-depth literature search of popular wastewater service billing alternatives and of sewage strength values for restaurants is provided in the Appendices C and D. The results indicate that there is no predictable difference in sewage strengths among the different restaurant subclasses, including strip mall restaurants, take-out pizza parlors and other fast-food restaurants, delicatessens or full service restaurants. In addition, the COSA findings indicate that only 22 percent of the wastewater utility costs of service are related to sewage discharge strengths. Therefore, individual restaurant sewage strength variations are not significant to determining the City's cost of providing wastewater services, and sampling of restaurant sewage strengths of BOD and TSS will not help support equitable wastewater charges, especially among the different restaurant types.

Based on the typical restaurant having little or no landscape irrigation, and the lack of accuracy of sewage flow monitoring devices at the low flows of individual dischargers, the recorded water consumption times a metered water use returned to sewer ratio represents the best tool to estimate of the costs of the City in serving individual restaurants.

The use of low-flow fixtures that reduce wastewater flows is currently recognized in existence of the Regular and Low-flow Residential classifications. Residential customers are not billed for wastewater service using actual water use in the calculation of monthly bills. Low-flow fixtures may include low-flow customer toilets, Energy Star dishwashers, etc. As provided in the following sections, replacement of fixed residential wastewater service charges with variable water use-based charges could eliminate the need for two residential classes, by focusing on the level of water use rather than the tools to conserve water and reduce sewage discharges.

As shown in Appendix E, there is little homogeneity of estimated wastewater flows among the City's restaurants, so creating a restaurant subclass certified as using low-flow fixtures would not in itself reliably predict the wastewater discharge per customer seat or customer service area. In conclusion, the only credible predictor of restaurant sewage discharges is water use by

an individual restaurant. In the following sections of this Study, the relationship between estimated sewage discharges and restaurant serving areas and number of seats is evaluated.

Detailed Cost of Service Analysis Tables 13 to 21

The detailed COSA in this section describes the technical calculations developing the adjustments to customer charges for billing equity. The technical calculation tables are located at the end of this report.

Table 13 2010 Census Persons per Household. The purpose of this table is to identify the ratio of persons per household (PPH) of single-family versus multi-family household. As shown, according to the 2010 Census, there are on average 1.55 PPH in SFDs, versus 1.054 PPH in apartment dwellings. This information is useful in validating the COSA wastewater flow estimates developed in the mass balance.

Table 14 Wastewater Fixed Assets. Table 14 develops the current value the utility's fixed assets. This information is used to calculate updated capacity fees (provided in a separate memo) and the sewer availability charge. The information is also used for the COSA calculations to allocate asset values between the collection system and treatment plant functions. The total original book value of all assets is approximately \$115 million; the fixed assets listed in this analysis do not include rolling stock or assets with a live less than 7 years.

As shown, the original cost less depreciation (OCLD) value of assets is \$91 million. Annual depreciation based on replacement costs is \$3.7 million, and the replacement cost less depreciation (RCLD) value of the system is \$122 million. RCLD asset values are developed using inflationary escalations on OCLD values. RCLD values represent the value of facilities at the time when a customer actually connects, and represents the utility's implicit cost of early investing in excess facility capacity for the benefit of future development.

Table 15 Wastewater Flow and Capacity. This table identifies the current loadings on the City's wastewater reclamation plant, and the total plant capacity after the solids handling process expansion projects are complete. As shown, the 2012 actual flows are 1.12 MGD, with an estimated BOD of 365 PPM and a TSS of 384 PPM. The plant capacity, by 2018, is projected to be 1.63 MGD. This flow is equivalent to 12,718 ERUs.

Table 16 Utility Cost of Service Allocations. This cost of service allocation procedure develops equitable costs of service to verify the billing equity of the customer bills. The purpose of a cost of service analysis is to determine the wastewater system costs incurred to serve each of the customer classes. To recover the costs of providing the wastewater services based on cost of service principals, the utility costs are first allocated into expenditure categories as developed above. The purpose of this table is to allocate the wastewater enterprise cost among different expenditure function. The costs are from the financial plan operating expenditures, as well as the capital-related depreciation costs representing a stable level of capital expenditures. These expenditures and costs were identified from financial statements and fixed asset reports.

There are three utility cost functions used in this COSA. They are:

- Wastewater flow costs in the collection system and treatment plant;
- Strength-related costs in the treatment process; and
- System and Customer Administration costs.

These allocations are allocated using the cost-causative approach. As shown, 66 percent of the costs are allocable to flows in collection and treatment, 22 percent to sewage strength costs of treatment for the removal of BOD and TSS, and 12 percent for system administrative costs including the management of customer service accounts. Note that these expenditure functions are also used for the customer loading functions, thus providing the cross-reference between customer loads and utility costs. The table also identifies the facilities maintenance share of the annual operating costs for the development of the sewer availability charge. The maintenance activities represent 41 percent of the O&M budget, excluding depreciation.

In the following tables, the customer burdens on the system are identified, so that their wastewater loading characteristics can be cross-referenced with the expenditure functions. This results in an allocation of the costs to each customer class.

Table 17 Mass Balance of Water Use & Wastewater Discharges. In this table, a mass balance is used to balance the sewage loads arriving at the headworks of the City's wastewater reclamation plant with the metered water use reported for the different wastewater customer classifications. The result of the analysis is the identification of how much sewage is being discharged from each customer classification. The process of the mass balance analysis is to start with the metered water use reported for each of the six main wastewater customer classifications. They are: SFD, MFD, Hotel, Motel & Resort, Restaurants, Other Commercial classes, and mobile home parks. The average water use by customer class for a historical year as reported by the Arizona Water Company excludes water customers on septic systems, and a ratio of water use returned to sewer is applied. The resulting wastewater volume is calibrated to equal the flows at the plant headworks. For strength factors, the same mass balance process is used except that industrial standard sewage strengths are applied to the different customer classes, and the loadings are calibrated to equal the headworks flows.

As tabulated, the average SFD sewage flows are estimated at 139 GPD with strengths of 237 biochemical oxygen demand (BOD) and 278 total suspended solids (TSS).

Table 18 Wastewater Load Details. This table details sewage strength information useful in categorizing the discharges by customer classifications. The average of these strengths by classification is calibrated with the actual wastewater strengths in the City so that the total discharge loads by consolidated class are the same as the sewage loading measured at the City's wastewater reclamation plant.

Table 19 Wastewater Loads by Customer Type. This table summarizes the detailed calculations of the flow, BOD and TSS loads developed in the prior tables. The loads allocated to each customer class are used to develop the cost of equity findings in the following tables. The restaurant and hotel data is from three sampling studies of large western US metropolitan sewerage agencies in California and Missouri, as well as documents from the California State Water Resources Control Board. The most current information was provided by the Los Angeles

County Sanitation District, as detailed in Appendix D. The values are calculated from the metered water use returned to sewers of the individual customers, and a calibrated mass-balance with the metered sewage at the City's wastewater reclamation plant.

Table 20 FY 2011-12 Wastewater Charges. This table itemizes the FY 2011-12 rate-based revenues by customer billing classification. The purpose of this summary is to provide a comparison of the wastewater charges paid by each customer classification with the City's costs of providing wastewater services to that class. As shown, the charges are calculated from the unit service charges in effect during that year times the billing units under each customer billing classification. The calculated results differ from the actual revenues reported for that year by less than 2 percent; differences of less than 5 percent are considered immaterial, and are due to a variety of accounting issues such as billing adjustments and changes in customer account status during the year.

Table 21 Cost of Service Analysis. This table combines the results of the prior tables to verify the proportionality of the wastewater charges paid by each customer classification with the City's costs of providing wastewater services to that class. As shown, the total utility service costs have been allocated among sewage flow (66 percent), sewage strength (22 percent total) and customer accounts (12 percent). These costs are cross referenced to the loads of each customer class, and the unit charge in FY 2011-12 is calculated for each billing parameter (account, hundred gallons of sewage and pound of sewage solids) in dollars and ERUs. These unit costs are useful in determining COSA findings. The results are:

- The Single Family Dwelling (SFD) rate-based revenues in COSA test year FY 2011-12 were 10 percent lower than the City's costs for treating the loads;
- The SFD low-flow account rate-based revenues were 5 percent higher than the City's costs for treating their 2,000 low-flow households loads;
- The Multi-family Dwelling (MFD) rate-based revenues were 17 percent higher than the COSA costs to that small class representing only 2 percent of the loading;
- Restaurant rate-based revenues were 27 percent higher than the COSA costs to that class of the 76 accounts plus patios subclass accounts;
- Hotel rate-based revenues were 7 percent below the City's costs for treating the loads from the 71 accounts accounting for 20 percent of the system loads; and
- Other commercial business' discharging 8 percent of the system loads have rate-based revenues that are 23 percent below the City costs of providing services.

Table 21 also identifies that the SFD household average sewage flow has decreased by 25 percent from the historical 6,080 gallons per month to 4,584 gallons per month (203 to 153 GPD). In contrast, the low-flow SFD household flows have decreased 42 percent.

Based on these findings, to improve the proportionality and equity of the future charges to all customer classes, we recommend that the changes described above should be incorporated into the rates. If the COSA changes increasing the rates for Other Commercial customers are anticipated to result in rate shock, then the City may also consider phasing-in all changes over several years.

III. Other Rates and Fees Update

Other wastewater charges and fees include availability charges, minimum service charge and septage disposal fees. In this section, these other charges are evaluated and updated. Also discussed in this section are private collection system credits. Tables 22 to 24 detailing other rates and fees are described at the end of this section. An analysis of wastewater capacity fees is provided in the separate 2013 Wastewater Capacity Fee study.

Recommendations

Based on the analysis provided in this section, we recommend the following rate and fee updates.

Sewer Availability Charge Unchanged

Sewer availability charges are for sewerred but undeveloped parcels. We recommend that the charge remain at 0.5 ERUs per parcel, rather than increased slightly based on our findings. Note that any parcel with a restrictive covenants of legal/land use findings precluding sewer discharges can never be connected to the sewer system, and should not be billed an availability charge.

Minimum Monthly Service Charge

Minimum service charges are for active commercial accounts for very small offices, whose calculated rates would otherwise be below the level of capacity allocated to the connection. A minimum charge can also be used for a vacated commercial account during changes of ownership or prolonged closures of more than one year; residential accounts are billed a fixed charge that should not be adjusted for occupancy status. The City's wastewater system capacity is designed for connected capacity of no less than one ERU per parcel. The City's fixed cost of this capacity allocation is represented by the Sewer Availability Charge of 0.5 ERUs; a small account not currently utilizing that level of service is nevertheless costing the City for allocated capacity, billing services and administration. Therefore, a minimum service charge should be billed to commercial account that is equal to the current Availability Charge plus the administrative and billing costs, or 0.63 ERUs.

Septage Disposal Fee Update

Based on the calculated cost of wastewater treatment, and required resources for handling and billing services at the City's wastewater reclamation plant septage station, we recommend that the current septage fees be increased by 20 percent.

Private Collection System Credits

The City currently is responsible for a sewer laterals up to the property line but not beyond. City Government Code Section 13.15.050 B. provides that where there exists a cluster system connected to the city's wastewater system:

“existing sewer lines comply with the city design requirements and are considered acceptable for donation, the city may, at its discretion, accept responsibility for the sewer lines as designated main sewer lines on the city’s wastewater system.”

Currently, a local collection system in a subdivision can be accepted by the City when the easement width, pipe materials, and system access meet City standards; the City does not compensate the developer for the developer’s contribution of the local sewer system within a new development, but does commit to maintaining it. The City cannot accept a transfer of pipelines built to substandard conditions, as the City would be accepting a liability for higher than normal maintenance and repair of potential poorly built assets. However, when the City does not accept a private sewer, it may consider providing a discounted capacity fee to the new customers representing the value of City expenses avoided by not having to maintain the private system.

A rough estimate of the discount to the capacity fee is as follows: The COSA indicates that the total collection system costs recovered in sewer rates is approximately \$2 million per year. Using rough assumptions that the average City pipe diameter is 8 inches, the annual city unit rate charged for the collection system is \$0.09 per inch-foot of pipe. For a privately owned sewer system of 2 miles of 4 inch diameter pipe, the City is saving \$4,000 per year by not maintaining or funding the depreciation of the private system. If there are 100 homes in the private cluster system, then the annual charge for maintaining their private system is \$40. The City’s discounted present value of a savings of \$40 per year in perpetuity is between \$500 and \$600, or roughly 5 percent of the capacity charge per ERU. This discount is de minimus, and we do not recommend its adoption. Instead, we recommend an awareness program be instituted for developers and perspective new homeowners within the City defining the value of complying with design standards necessary for transferring new subdivision sewer systems.

Note that it is inappropriate to retroactively offer capacity fee discounts to any developer who sought to connect with the City using a substandard local collection system, as the City acted in good faith using the best available information at the time of the capacity fee was assessed. Moreover, the financial plan and cost analysis does not include any rate discounts to these customers, so discounts, if any, should be funded from the City General Fund until the total annual costs of the discounts can be recovered in increased rates to the remaining customers.

Detailed Calculation Tables 22 to 24

The following describes the technical calculations used to determine the updated fees and charges in this section. The technical calculation tables are located at the end of this report.

Table 22 Sewer Availability Charge Update. A Sewer Availability (Vacant Lot) Charge of 0.5 ERUs per parcel is billed to 1,265 unconnected and undeveloped parcels with immediate access to existing sewers. Based on the annual depreciation of the capacity in the wastewater system that was built for these parcels, the annual City cost of service to these parcels is 0.562 ERUs. However, for continuity we recommend that the fee remain at 0.5 ERUs, or \$27.16 in FY

2014-15. Note that the charge is on parcels that are expected to be developed and to connect into the wastewater system. If any parcel has a Restrictive Covenant or other legal/land use finding that prohibits sewage discharges, then the sewer availability charge should be waived.

Table 23 Updated Minimum Service Charge for Accounts. The City's annual cost of wastewater system capacity allocated to all parcels within the utility service area is represented by the Sewer Availability Charge of 0.5 ERUs. Parcels have planned capacities of no less than 1.0 ERU. Therefore, a wastewater account that is not utilizing its allocated capacity is nevertheless costing the City the same as an Availability Charge, plus the administrative costs of billing. The total of these two elements is a monthly service charge per account of 0.63 ERUs, or \$32.73 per month-account in FY 2013-14, and \$34.04 in FY2014-15. We recommend that all parcels with sewer accounts are billed this charge at a minimum, including vacated commercial buildings.

Table 24 Updated Septage Disposal Fees. An analysis of the City's costs of maintaining a septage dumping station at the wastewater reclamation plant is tabulated in this table. As shown, the City's costs include the treating the septage, as well as the burdened labor cost of station operation and administration. Based on the calculated costs of operating the station in FY 2011-12 versus the total septage service fees collected, we recommend an increase in septage dumping rates of 20 percent.

IV. Recommended Wastewater Rate Structure

In this section several alternative monthly wastewater rate structures are evaluated, and the recommended rate structure is provided. The recommended rate structure includes the cost of service adjustments for billing proportionality and a five-year projection of the rates based on the Plan rate-based revenue requirements; the rate-based revenue increases developed in the Financial Plan for Years 6 through 17 are not included in rates recommended for enactment. Tables 25 to 29 detailing the recommended rates are described at the end of this section.

Recommendations

We recommend that the City of Sedona adopt an equitable rate structure based on the cost of service analysis (COSA) findings for billing proportionality and for the recommended rate-based revenue increases. We have found that the water usage-based wastewater billing should be required for qualified restaurant and hotel/resort customers starting in FY 2014-15, but is not warranted for either other commercial accounts or for the residential customers.

These recommendations are based on the technical analysis of this Study, discussions with City staff and with City-wide restaurant managers, and data availability from the two water companies serving the City. A variety of alternatives were evaluated and discussed with staff; these recommendations are believed to best reflect the goals and needs of the City's residents and businesses.

Restaurant & Hotel Water Usage Billing Recommended

Starting in FY 2014-15, all restaurants and hotels with independent, dedicated (unshared) water service metering shall convert to variable water flow-based wastewater charges. The charges shall be based on the 12 consecutive months of prior actual water usage (plus a fixed monthly service charge). All other restaurants (including hotel restaurants) must convert from the existing billing basis to updated charges using customer serving areas (and hotel rooms).

Many of the 76 restaurants and 71 hotels/resorts have their own water accounts with the Arizona Water Company (AWC). AWC can provide the City with historical annual water consumption records, and the City can utilize the existing Springbrook wastewater utility billing system to determine wastewater charges for individual customer accounts, based on their water demands.

Where water-based billing is used, the FY 2014-15 wastewater charges are a fixed \$34.04 per account-month as a service charges, plus \$1.06 per Hgal of prior 12 month average metered water use for restaurants, and \$0.70 per Hgal for hotels, as shown in Table 27. Analysis of the 76 restaurants with their own water accounts, as provided in Appendix A through E, indicates that water per user and per serving area varies; many of the larger water-conserving restaurants will benefit from more equitable and lower bills with these water-based wastewater charges.

Restaurants wishing to be billed for wastewater services based on water use but without independent water meter service must re-plumb and start water services in FY 2015-16 if they wish to convert; all water-based bills require 12 months of historical metered water use before they are eligible for water-based wastewater bills. Restaurants without 12 months of continuous water use from an independent water meter will be billed on a customer serving area basis; this area is defined as the customer seating area and passageways, not including restrooms or private areas such as kitchens and storage areas. Hotels without 12 months of continuous water metering information will be billed on a per room basis, plus charges for any restaurant located within the hotel. Note that hotels offering their guests only preprocessed foods prior to room check-out on disposable serving wear without staff in attendance are not classified as operating a restaurant with respect to wastewater service billings.

Residential Water Usage Billing Not Recommended

Billing of residential accounts using water usage was evaluated, but not recommended, for the following reasons:

- As described in the COSA, only an estimated 37 percent of residential summertime water demand is returned to sewers, with the remainder used for home cooling and landscape irrigation; therefore, the FY 2014-15 water-usage based charges for residents would be only \$0.20 per Hgal of year-round metered water use, plus the fixed \$34.04 per account-month service charge. In contrast, the recommended fixed monthly COSA charge in FY 2014-15 is \$54.33 for these same residents.
- Residential water use for cooling and landscape irrigation varies significantly among households, so the actual water use return to sewer ratio for a household is unlikely to equal the average ratio identified in this Study; the calculated wastewater billing rate for year-round metered water use will be too high for the larger landscaped estates using evaporative cooling systems, and too low for small households with electric air conditioners.
- Most single family dwelling residences are homogenous in character (size and persons per household). Within this relatively homogenous customer class, most wastewater bills will not vary regardless of the complexity of the billing system.
- The added complexity of a wastewater billing system using water-based billing must be justified with significant increases in customer billing equity. For residential wastewater customers, the increase in household billing equity is not significant. However, the administrative burden of calculating unique water-use bills for more than 5,000 households will be significant, and may require additional administrative staff.

Justifications for the Administrative Burden of Billing with Water Usage

Significant additional administrative costs are associated with the City's water use billing of any account. Where there is significant variation in estimated water use returned to sewers within the customer class accounts, and the total dollar impact on the individual customer bill are significant, then additional City administrative burden may be justified by the greater billing equity and service delivered to the wastewater customer. Conversely, significant administrative staffing effort, especially workload that required hiring of additional staffing, is not justified when the result is only an incremental improvement in the equity of the customer's bill.

There are 471 Other Commercial customers, with all but 60 classified as low strength wastewater dischargers. Most of these customers do not have their own water accounts, and would not be eligible for water-usage billing. We believe that few of these wastewater customers will benefit materially from water usage-based wastewater billing. For this reason, water usage-based bills are not recommended for any customers except restaurants, hotels and resorts.

Frequency of Water-based Data Updates

Unlike water service customers, timely billing of seasonal variations in wastewater bills is less essential than the overall equity of the charges. In addition, monthly water usage will result in sewer service bills no sooner than one month after the water use, and as long as three months later. Therefore, we believe that the added administrative burden of recalculating wastewater service bills 12 times per year based on 12 monthly variations in water usage is not proportional to the benefit derived to the customers. We recommend that the City's administrative burden of billing restaurants and hotels based on water usage be minimized by updating the wastewater bills once a year, based on prior year usage.

Detailed Calculation Tables 25-29

The following describes the technical calculations used to determine the recommended wastewater rate structure. The technical calculation tables are located at the end of this report.

Table 25 Projected Flat Rates with Existing Structure Unchanged. Table 25 provides a five year projection of the current rate structure with the annual rate-based revenue increases recommended in the financial plan. This projection is a baseline of the unit rates without the inclusion of the cost of service analysis (COSA) or rate restructuring recommendations. As shown, over each of the five year projection period the rate-based revenue requirements are increased 4 percent annually, for an increase of \$8.04 (17 percent) from the current \$47.34 per month sewer service charge for residential customers. Note that during the same five year period we have included a projected cumulative inflation of 16 percent, using 3 percent per year.

Table 26 Rates Based on Cost of Service. The purpose of Table 26 is to utilize the COSA findings of Table 21 to recommend updates for improving the equity of customer billing using charges that are proportional to City's costs of delivering services to the different customer classifications. As shown, the COSA was conducted on the City's last audited financial statement of the wastewater enterprise in FY 2011-12; in FY 2012-13 the wastewater rates were uniformly increased by 10 percent. The COSA recommendations do not increase the total rate-based revenues to the City; every increase in unit rates is matched by a proportional decrease so that the total revenues are unchanged.

As shown, based on the COSA, certain customer classes are increased, such as the 10.3 percent increase to Residential accounts, and others are decreased, such as the 5.4 percent to Residential Low Flow accounts. Note that the recommended first year of new rates is FY 2014-15, so the unit rates of this table are not the rates to be implemented. Also shown are both the existing seat-based and updated area-based restaurant rates; the area-based rates are

identified in Appendices A through E, based on the number of seats per one-hundred square feet of customer serving areas in Sedona largest restaurants.

Table 27 Alternative Water-Usage Based Wastewater Rates. Table 27 identifies alternative water usage based wastewater rates for restaurants, hotels and single-family dwelling residential customers, effective in the current FY 2013-14.

The water usage rate structure includes both a flat monthly account service charge representing the City's fixed costs of service to each account, plus a variable water usage charge based on the City's estimated costs of treating water that is returned to the sewer. The unit water usage rate is calculated from the total annual costs of service minus the flat revenues from the recommended fixed charges, divided by the metered water use.

As described above, we recommend that this alternative rate structure be required for commercial accounts with dedicated water accounts, and we do not recommend that water usage-based wastewater rates be available to residential accounts. Wastewater accounts with water service from master meters with several other different businesses are not eligible for this billing alternative due to the difficulty of estimating the water usages among the different users of the master meter, and the administrative and legal challenges of billing wastewater charges based on water demand of a third party. In addition, all water meters on a hotel or resort account, including dedicated irrigation meters, must be charged due to the basis of the estimated water use returned to sewer ratio used in the development of the unit rates, based on all meters.

Table 28 Recommended Monthly Service Rates. This unit rate structure table lists the recommended monthly service charges for all customer classes. As shown, for the 2,700 regular single-family dwelling customers the FY 2014-15 rate increase including the COSA changes is almost \$7 per month, or 15 percent (with the revenue-based increase amounting to only 4 percent). However, for the 2,000 Low-flow Residential accounts, there is a \$2.32 per month decrease in rates. Similarly, all restaurant accounts have significant decreases in wastewater charges, all hotels will have increases of 11 percent, and the 471 Other Commercial accounts will have a dramatic one-time increase of 27 percent.

After the significant adjustments for FY 2014-15, the remaining projection period has rate-based revenue requirement adjustments of 4 percent each year. The bottom of Table 28 provides the required water usage-based rates for eligible restaurants and hotels with dedicated water services.

Table 29 Alternative Rates -- Four Year Phase-In of COSA Rates. The potential for rate-shock to certain customers with a one-time 27 percent increase is real for some of the 471 Other Commercial class customers; despite accounting for only 7 percent of the wastewater accounts. To reduce the one-time impact of the increase, it can be phased-in using four 9.6 percent increases (5.6 percent annual COSA rate increases concurrent with the 4 percent increases for revenue requirements), as shown in Table 29.

However, for equality and consistency, as well as to secure the same level of annual rate-based revenues recommended in the financial plan, a phase-in of rate adjustments for one class of customers must be accompanied with a phase-in of rates for all classes. In this way, the targeted level of rate-based revenues is secured to the City in each projected year, and the potential of rate shock to customers is reduced.

A cautionary note is required for this alternative: While the recommended Baseline Plan of four 4 percent rate-based revenue increases may be modified in the future years 3 to 5 due to changes in projected versus actual inflation or other costs, the schedule of COSA adjustments is not subject to revision. However, in actual practice, if the one-time COSA adjustment is phased-in over several years, the possibility of interruptions, delays or suspensions to the schedule is high. For this reason, we do not recommend this alternative, and instead recommend that the COSA adjustments be enacted immediately at one time in FY 2014-15.

V. Glossary

The technical terms and abbreviations used in the Study tables and documentation are:

Acct	Account	Incr	Increase
Adj	Adjustment	KSF	Thousand square feet
AF	Acre-feet volume	Lbs.	Pounds
AFY	Acre-foot per year	LF	Linear Foot
Alt	Alternative	MD	Maximum Day
Avg.	Average	MFD	Multi-family dwelling
AWC	Arizona Water Company	MGD	Million gallons per year
BOD	Biochemical Oxygen Demand	MH	Maximum Hour
CAF	Capital Annual Financial Report	Mi.	Mile
Cap	Capacity or Capital	Min	Minimum
Ccf	Hundred cubic feet	mo	Month
CFS	Cubic feet per second	Non-op	Non-operating
Chg	Charges	O&M	Operations and maintenance
CIP	Capital improvement program	OCLD	Original Cost Less Depreciation
COD	Chemical Oxygen Demand	OCWC	Oak Creek Water Company
COS	Cost of service analysis	Ops	Operations
Cust	Customer	Pay-go	Pay-as-you-go (capital funding)
CY	Calendar year	PPH	Persons per household
Dia.	Diameter	ppm	Parts per million
DU	Dwelling Unit	R&R	Repair and Replacement
EM	Equivalent 5/8" by 3/4" water	RCLD	Replacement Cost Less
ENR	Engineering New Record	Rev	Revenues
ERU	Equivalent Residential Unit	RoR	Rate of Return
FA	Fixed Assets	RTS	Readiness to Serve
ft.	Foot	SF	Square feet
FY	Fiscal Year	SFD	Single family dwelling
gals	gallons	SOP	Standard operating procedures
GIS	Geographic Information System	Svc	Service
GPD	Gallons per Day	SWRC	State Water Resources Control
GPM	Gallons per Minute	TSS	Total Suspended Solids
Hcf	Hundred cubic feet	V	Volume
HET	High efficiency toilet	WEF	Water Environment Federation
Hgal	Hundred gallons	Wtr	Water
ID	Inner Diameter	WW	Wastewater
Imp	Improvement	WWRP	Wastewater Reclamation Plant
in.	Inch	Yr	Year

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TABLE 1
ASSUMPTIONS

Description	Value
<u>Inflation & Interest (per year)</u>	
O&M and Capital (a)	3.0%
Fund Reserve Interest Earnings Rate	1.3%
<u>Target Reserve Levels (2009 goals)</u>	
Working Cash (months of O&M)	1.2
Capital Contingency (years of pay-go CIP)	100%
Years of Debt Service	1.0
Non-payment of Monthly Fees (2012 actual)	3.0%
Capitalized Labor Cost as % of CIP	4.0%
Annual Growth in Sedona Taxable Sales	2.0%
<u>Account Growth Rate (b)</u>	
Residential Accounts	
Through 2015	0.5%
2016 and Beyond	0.6%
Non-Residential Accounts	0.0%

a. Salary and benefit increases are based on CPI inflation

b. Source: City staff, 2009.

TABLE 2
SEWER SERVICE ACCOUNTS

Category	Billing Classifications	Billing Units	Current ERU per Billing	May 2013			FY 2012-13 Service chg. (\$/Unit-mo)	May 2013 Billings	Estimated FY 2012-13 Charges	
				Accts	Units	ERUS				
SRES1	101 Residential	Dwelling	1.00	2,691	2,791	2,857	\$47.34	\$135,272	\$1,623,267	
SRES2	102 Residential (Low Flow)	Dwelling	0.91	1,983	2,233	2,078	\$42.94	\$98,391	\$1,180,695	
ADU	18 ADU - Accessory Dwelling Unit	Connection	0.50	-	8	4	\$23.67	\$189	\$2,272	
SMFAPT	15 Multi Family/Apartments	Dwelling	0.85	15	186	167	\$40.47	\$7,927	\$95,129	
SRSUB	Residential Subsidy	Connection	0.58	41	25	15	\$27.50	\$1,025	\$8,251	
SASBF	1001 Vacant - Sewer Availability	Parcel	0.50	1,214	1,222	590	\$23.67	\$28,922	\$335,221	
Residential Total Monthly Fees				5,944	6,465	5,712		\$271,728	\$3,244,835	
STLC	104 Theaters, Libraries, Churches	Seat	0.01	26	4,310	57	\$0.63	\$2,715	\$32,584	
SBDIN	105 Bar without dining facility	Seat	0.09	17	309	27	\$4.19	\$1,299	\$15,587	
SCWNR	107 Car Wash with Recycle	Bay	2.00	2	5	10	\$94.47	\$472	\$5,668	
SDRTL	108 Department, Retail Stores	Restroom	0.15	149	308	45	\$7.13	\$2,125	\$25,497	
SHOTEL	110 Hotel, Motel, B&, RV Park	Room	0.56	48	1,704	979	\$26.61	\$46,343	\$556,121	
SRCV	111 Resort - Cottages, Villas	Connection	1.12	23	629	637	\$53.22	\$30,150	\$361,800	
SFTNS	112 Fitness Center / Beauty Salon	100 sq. ft.	0.06	18	398	17	\$2.94	\$799	\$9,585	
SCWSH	113 Private Tour Jeep & Rental Car/Jeep Washing	Vehicle	0.06	3	48	3	\$2.69	\$129	\$1,549	
SMKT	115 Market	Connection	3.69	4	4	15	\$174.92	\$700	\$8,396	
SMORT	116 Mortuaries	Connection	5.84	1	1	6	\$276.32	\$276	\$3,316	
SOFF	117 Offices, Med Bldg., Mfg., Contractors	100 sq. ft.	0.01	203	6,498	82	\$0.63	\$3,885	\$46,623	
SRSHOP	118 Repair Shops, Service Stations	Connection	0.74	15	16	12	\$34.99	\$560	\$6,718	
SRSTRT	120 Restaurant	Seat	0.31	76	4,499	1,393	\$14.66	\$63,639	\$763,668	
PSS	2 Restaurant w/Patio Seats (seasonal)	Seat	0.15	16	399	62	\$7.33	\$2,645	\$31,742	
SSCHG	121 School, College, w/ gym, shower	Student	0.17	1	390	67	\$8.17	\$3,186	\$38,236	
SSCHC	122 School, College w/ cafeteria	Student	0.28	1	338	94	\$13.20	\$4,455	\$53,460	
SSCHNG	123 School, College w/o gym/shower/cafeteria	Student	0.06	6	329	21	\$2.96	\$972	\$11,670	
SPRST	124 Public Restroom	Fixture	1.00	17	88	88	\$47.33	\$4,170	\$50,037	
SLMATE	125 Laundromat (efficiency)	Machine	0.59	1	18	11	\$27.93	\$503	\$6,033	
SLMT18	126 Laundromat (12-18 lb.)	Machine	0.76	2	9	2	\$35.98	\$108	\$1,295	
ALMT27	127 Laundromat (25-35 lb.)	Machine	1.06	-	8	8	\$45.62	\$401	\$4,816	
ALMT29	128 Laundromat (50 lb.)	Machine	1.55	-	-	0	\$73.38	\$0	\$0	
SCOMMA	129 Commercial - minimum	Connection	1.00	5	5	5	\$47.34	\$237	\$2,840	
Non-Residential Total				634	20,312	3,641		\$169,770	\$2,037,242	
Total Monthly Service Charges Invoiced				6,578	26,777	9,353		\$441,498	\$5,282,077	
Est Non-payment of Monthly Charges (Bad debt)								3%	(\$157,888)	
Septage Haulers (in City) \$0.155 per gallon								Calculated Revenues Net of Bad Debt		\$5,124,189
Septage Haulers (Out of City) \$0.165 per gallon								Total Budgeted YE Charges (net of bad debt)		\$5,140,044
Accounts Excluding Sewer Availability:				5,364				Difference	0.3%	

Source: May 2013 accounts, billing units and rate schedule from customer billing records.

Some commercial accounts get billed without direct wastewater service because they have access to toilets, ie mall restrooms.

ERUs: Equivalent residential units. Deferral Fees Category DEFFEE are penalties not included above.

Environmental fee penalty Category ENV 1502 are for developed parcels not connecting with existing sewers, and are not include above. The environmental fee (penalty) for non-connection is double the regular monthly ERU fee.

TABLE 3
PROJECTED BILLABLE CUSTOMERS

Description	Estimated	Current	Projected	Year 5			Year 10	Year 15
	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 22-23	FY 27-28
Equivalent Residential Dwelling (ERU) Billing Units								
Residential	5,712	5,740	5,769	5,804	5,839	5,874	6,052	6,236
Non-Residential	3,641	3,641	3,641	3,641	3,641	3,641	3,641	3,641
Total ERUs	9,353	9,381	9,410	9,445	9,480	9,515	9,693	9,877
New ERUs		28	29	35	35	35	36	37
Customer Accounts								
Residential	5,944	5,974	6,004	6,040	6,076	6,112	6,298	6,489
Non-Residential	634	634	634	634	634	634	634	634
Total ERUs	6,578	6,608	6,638	6,674	6,710	6,746	6,932	7,123

ERUs: Equivalent Residential Billing Units, based on the annual charge per single-family dwelling unit. Values include Sewer Availability accounts.

TABLE 4
SALES TAX SUBSIDIES TO WASTEWATER UTILITY

Description	Estimated	Current	Projected			Year 5	Year 6	Year 7	Year 13	Year 14
	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 25-26	FY 26-27
Annual Change in Sedona Taxable Sales	0%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Sedona Taxable Sales (est)	\$374,482,250	\$381,982,667	\$389,622,320	\$397,414,766	\$405,363,062	\$413,470,323	\$421,739,729	\$430,174,524	\$484,446,383	\$494,135,310
Adjustment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Sales Tax Rate	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Sales Tax Revenues	\$11,234,468	\$11,459,480	\$11,688,670	\$11,922,443	\$12,160,892	\$12,404,110	\$12,652,192	\$12,905,236	\$14,533,391	\$14,824,059
Tax Proceeds Transferred to Sewer Fund	40%	35%	30%	30%	30%	25%	25%	20%	15%	0%
Wastewater Fund Tax Proceeds	\$4,493,787	\$4,010,818	\$3,506,601	\$3,576,733	\$3,648,268	\$3,101,027	\$3,163,048	\$2,581,047	\$2,180,009	\$0
Sales Tax Proceeds to WW Fund at Current 35% Share		\$4,010,818	\$4,091,034	\$4,172,855	\$4,256,312	\$4,341,438	\$4,428,267	\$4,516,833	\$5,086,687	\$5,188,421
Projected WW Fund Proceeds		\$4,010,818	\$3,506,601	\$3,576,733	\$3,648,268	\$3,101,027	\$3,163,048	\$2,581,047	\$2,180,009	\$0
Funds Available for Additional Bond Retirement			\$584,433	\$596,122	\$608,045	\$1,240,411	\$1,265,219	\$1,935,785	\$2,906,678	\$5,188,421
Cumulative Funds Available for Additional Bond Retirement			\$584,433	\$1,188,153	\$1,811,644	\$3,075,606	\$4,380,808	\$6,373,544	\$22,621,696	\$28,104,199
Outstanding Debt		\$39,900,000	\$35,825,000	\$32,050,000	\$27,445,000	\$22,655,000	\$18,780,000	\$14,700,000	\$4,290,000	\$0

FY 2013-14 Wastewater Fund Tax Proceeds are per the current budget, and are based on the 35% of the City Tax Proceeds being transferred to Sewer Fund.

TABLE 5
HISTORICAL & BUDGETED REVENUES

Description (a)	Actual			Est YE	Budgeted/ Projected
	FY 2009-10	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14
Operating Revenues					
Monthly Wastewater Fees	\$3,232,840	\$3,795,392	\$4,460,670	\$4,962,711	\$4,967,678
Vacant - Sewer Availability	\$0	\$251,003	\$326,650	\$335,221	\$361,493
City Sales Tax to WW Fund	\$4,925,801	\$5,413,877	\$4,617,347	\$4,493,787	\$4,010,818
Total Operating Revenues	\$8,158,641	\$9,460,272	\$9,404,667	\$9,791,719	\$9,339,989
Non-operating Revenues					
Other Fees/Charges	\$13,220	\$10,563	\$23,699	\$17,897	\$10,373
Late Fee & Environ Penalty	\$82,771	\$94,578	\$142,807	\$83,894	\$142,451
Interest on Funds	\$411,096	\$135,601	\$196,571	\$252,178	\$176,854
Septage Dumping Fees	\$20,658	\$28,936	\$4,287	\$1,277	\$5,099
Capacity Fee Revenues	\$986,957	\$227,647	\$204,758	\$487,125	\$101,500
Subtotal Non-Op Revenues	\$1,514,702	\$497,325	\$572,121	\$842,371	\$436,277
Total Revenues	\$9,673,343	\$9,957,597	\$9,976,788	\$10,634,090	\$9,776,266
Monthly Service Fee (\$/ERU)	\$32.54	\$37.42	\$43.03	\$47.34	\$47.34
New Capacity Fee (\$/ERU)	\$5,150	\$5,325	\$6,427	\$8,631	\$8,890

Environmental fees and Deferral Fees Category DEFFEE are part of Late Fees and Environmental Penalties. Interest revenue includes interest income on LGIP, T-Bills, Pre pay Capacity fees and Bond Series.

TABLE 6
DEBT SERVICE

Bond Series - Debt Service Schedules	Actual	Current	Projected		Year 5			Year 10			Year 15	
	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 22-23	FY 23-24	FY 25-26	FY 27-28
Series 1998												
Principal (restarts in 2020)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,400,000	\$1,190,000	\$1,130,000		
Interest	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,910,000	\$3,120,000	\$3,180,000		
Total	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,310,000	\$4,310,000	\$4,310,000	\$0	\$0
Series 2004 - 2												
Principal	\$2,970,000	\$3,130,000	\$2,790,000	\$3,585,000	\$1,385,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Interest	\$664,850	\$516,350	\$359,850	\$220,350	\$55,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total	\$3,634,850	\$3,646,350	\$3,149,850	\$3,805,350	\$1,440,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Series 2005												
Principal	\$0	\$0	\$0	\$0	\$2,335,000	\$3,875,000	\$4,080,000	\$0	\$0	\$0	\$0	\$0
Interest	\$500,838	\$500,838	\$500,838	\$500,838	\$500,838	\$407,438	\$204,000	\$0	\$0	\$0	\$0	\$0
Total	\$500,838	\$500,838	\$500,838	\$500,838	\$2,835,838	\$4,282,438	\$4,284,000	\$0	\$0	\$0	\$0	\$0
Series 2007												
Principal	\$910,000	\$945,000	\$985,000	\$1,020,000	\$1,070,000							
Interest	\$218,100	\$181,700	\$143,900	\$104,500	\$53,500							
Total	\$1,128,100	\$1,126,700	\$1,128,900	\$1,124,500	\$1,123,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Series 2012												
Principal												\$4,290,000
Interest	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$193,050
Total	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$377,775	\$4,483,050
Arbitrage & COP Admin Fees	\$12,440	\$12,000	\$12,000	\$12,000	\$12,000							
Total Debt Service	\$5,654,003	\$5,663,663	\$5,169,363	\$5,820,463	\$5,789,513	\$4,660,213	\$4,661,775	\$4,687,775	\$4,687,775	\$4,687,775	\$4,687,775	\$4,483,050
Outstanding Debt	\$43,780,000	\$39,900,000	\$35,825,000	\$32,050,000	\$27,445,000	\$22,655,000	\$18,780,000	\$14,700,000	\$10,715,000	\$9,525,000	\$4,290,000	

Updated Series 1998 values were provided by City on 10 July 2013. Updated Series 2012 values were provided by City on 10 September 2013.

a. All the bond series principal and interest payments are for wastewater fund only and are based on the existing total debt service provided by the City.

TABLE 7
O&M BUDGET

Description	Actual FY 2011-12	Estimate FY 2012-13	Budget FY 2013-14
Administration			
Salary and Wages incd O/T	\$441,383	\$480,069	\$525,792
Employee Expenses	\$144,562	\$171,907	\$219,222
Professional services	\$38,667	\$82,234	\$28,247
Other O&M	\$167,176	\$238,885	\$237,654
Total	\$791,788	\$973,095	\$1,010,915
Collection System			
Salary and Wages incd O/T	\$245,677	\$244,254	\$217,438
Employee Expenses	\$102,050	\$112,905	\$92,879
Professional services	\$18,499	\$18,975	\$52,445
Utilities	\$198,911	\$167,357	\$194,150
Other O&M	\$322,113	\$347,429	\$622,939
Total	\$887,250	\$890,920	\$1,179,851
Wastewater Reclamation Plant (WWRP)			
Salary and Wages incd O/T	\$183,261	\$195,241	\$253,439
Employee Expenses	\$76,204	\$85,129	\$117,852
Professional services	\$59,266	\$61,636	\$62,880
Utilities	\$175,006	\$235,427	\$217,349
O&M	\$445,828	\$391,721	\$693,615
Total	\$939,565	\$969,154	\$1,345,135
O&M Salaries and Benefits			
Salary and Wages incd O/T	\$870,321	\$919,564	\$996,669
Employee Expenses	\$322,816	\$369,941	\$429,953
Less Capitalized Labor Costs	(\$219,658)	(\$278,123)	(\$112,186)
Total Salaries and Benefits	\$973,479	\$1,011,382	\$1,314,436
O&M: Supplies and Services			
Professional services (all)	\$116,433	\$162,845	\$143,572
Utilities	\$373,917	\$402,784	\$411,499
Administrative Ops (O&M)	\$167,176	\$238,885	\$237,654
Plant O&M	\$445,828	\$391,721	\$693,615
Collections O&M	\$322,113	\$347,429	\$622,939
Total Supplies and Services	\$1,425,466	\$1,543,664	\$2,109,279
Total Operating Expenses	\$2,398,946	\$2,555,046	\$3,423,715
Bad Debt (a)	\$134,861	\$150,039	\$161,118
Debt Service	\$5,806,615	\$5,654,003	\$5,663,663
Non-cash Depreciation	\$2,457,203	\$2,518,940	\$2,592,701

Source: City finance reports June 2013

a. Bad debt is non-payment of monthly fees. In FY 2012 bad debt was \$134,861 (3%) of the invoiced amount.

Salaries and Benefits include payments capitalized (included with) project costs.

TABLE 8

CAPITAL IMPROVEMENT PROGRAM PROJECTS

Construction Projects	Estimated	Current	Projected		Year 5			Year 10	Year 15	
	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 22-23	FY 27-28
WWRP Effluent Disposal - Wetlands		\$8,625	\$988,000	\$2,556,250	\$2,587,500	\$0	\$0			
WWRP Effluent Disposal - Injection/Recharge		\$1,675,583	\$0	\$0						
WWRP Future Effluent Mgmt. - Optimization		\$75,000	\$0							
WWRP Process Capacity Enhancement		\$809,781	\$1,526,200	\$471,250	\$600,000	\$0	\$0			
WW Pump Station at Back O Beyond		\$97,000	\$0	\$0						
WWRP New Headworks Installation					\$100,000	\$1,500,000	\$0			
WWRP Reservoir #2 Liner			\$221,000	\$1,022,500	\$0					
WW Master Plan		\$0	\$200,000	\$0	\$0	\$0	\$100,000			
Mystic Hills Lift Station Access Improvement					\$0	\$120,000	\$0			
Major Collection System Rehabilitation			\$250,000					\$1,100,000	\$1,100,000	\$2,200,000
Subtotal - Construction Costs	\$269,163	\$2,665,989	\$3,185,200	\$4,050,000	\$3,287,500	\$1,620,000	\$100,000	\$1,100,000	\$1,100,000	\$2,200,000
Plus Inflation Adjustment				\$121,500	\$200,209	\$150,218	\$12,551	\$175,201	\$293,447	\$1,030,774
Plus Capitalized Costs	\$278,123	\$112,186	\$134,035	\$170,426	\$138,339	\$68,170	\$4,208	\$46,288	\$46,288	\$92,577
Grand Total Capital-related Costs	\$547,286	\$2,778,175	\$3,319,235	\$4,341,926	\$3,626,048	\$1,838,388	\$116,759	\$1,321,490	\$1,439,736	\$3,323,351

The FY 13-14 through FY 18-19 CIP expenditures were approved by City Council on June 25, 2013.

TABLE 9
TARGET CASH RESERVE REQUIREMENTS

Description	Target	Value	Historical	Current	Projected			Year 5	Year 10	Year 15	
			FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 22-23	FY 25-26	FY 27-28
Working Cash	Months of O&M	1.2	\$255,505	\$342,372	\$352,797	\$363,732	\$375,205	\$387,245	\$457,187	\$508,505	\$547,495
Capital Contingency	Years of Pay-Go CIP	100%	\$2,922,500	\$3,180,800	\$2,648,500	\$2,480,800	\$1,860,400	\$977,600	\$1,127,400	\$1,365,600	\$1,747,800
One Year of Debt Service (rolling average)			\$5,658,833	\$5,416,513	\$5,494,913	\$5,804,988	\$5,224,863	\$4,660,994	\$4,687,775	\$2,241,525	\$0
Total Target Reserves (rounded)			\$9,000,000	\$9,000,000	\$8,000,000	\$9,000,000	\$7,000,000	\$6,000,000	\$6,000,000	\$4,000,000	\$2,000,000

TABLE 10
PROJECTED UTILITY CASH FLOW

Description	Estimated	Current	Projected	Year 5			Year 6	Year 7	Year 10	Year 15
	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 22-23	FY 27-28
Rate Increase	10%	0%	4%	4%	4%	4%	4%	4%	3%	0%
Taxes Transferred to WW Fund	40%	35%	30%	30%	30%	25%	25%	20%	15%	0%
Rate (\$/ERU-year)	\$568	\$568	\$591	\$614	\$639	\$665	\$691	\$719	\$785	\$785
Operating Revenues										
Monthly Fees	\$5,297,932	\$5,329,171	\$5,559,471	\$5,803,356	\$6,057,855	\$6,323,430	\$6,600,557	\$6,889,738	\$7,613,431	\$7,757,955
City Sales Tax	\$4,493,787	\$4,010,818	\$3,506,601	\$3,576,733	\$3,648,268	\$3,101,027	\$3,163,048	\$2,581,047	\$2,054,271	\$0
Total Operating Revenues	\$9,791,719	\$9,339,989	\$9,066,072	\$9,380,088	\$9,706,123	\$9,424,457	\$9,763,605	\$9,470,785	\$9,667,702	\$7,757,955
Operating Expenses										
Labor & Benefits	\$1,011,382	\$1,314,436	\$1,353,869	\$1,394,485	\$1,436,320	\$1,479,409	\$1,523,792	\$1,569,505	\$1,715,041	\$1,988,202
Supplies and Services (a)	\$1,543,664	\$2,109,279	\$2,174,102	\$2,242,839	\$2,315,731	\$2,393,040	\$2,475,044	\$2,562,045	\$2,856,833	\$3,486,750
Total Operating Expenses	\$2,555,046	\$3,423,715	\$3,527,971	\$3,637,324	\$3,752,051	\$3,872,449	\$3,998,835	\$4,131,551	\$4,571,874	\$5,474,952
Net Operating Revenue	\$7,236,673	\$5,916,274	\$5,538,101	\$5,742,764	\$5,954,072	\$5,552,008	\$5,764,770	\$5,339,234	\$5,095,828	\$2,283,003
Non Operating Revenues										
Interest	\$252,178	\$176,854	\$197,036	\$164,623	\$113,496	\$74,255	\$67,292	\$85,463	\$81,149	\$35,093
Bad Debt on Monthly Fees	(\$150,039)	(\$161,118)	(\$168,081)	(\$175,454)	(\$183,149)	(\$191,178)	(\$199,557)	(\$208,299)	(\$230,179)	(\$234,548)
Other Non-op Revenues	\$103,068	\$157,923	\$162,661	\$167,541	\$172,567	\$177,744	\$183,076	\$188,568	\$206,054	\$238,873
Capacity Fees (b)	\$487,125	\$249,509	\$265,542	\$330,096	\$339,999	\$350,199	\$360,705	\$371,526	\$417,576	\$497,532
Total Non Op Revenues	\$692,332	\$423,167	\$457,158	\$486,805	\$442,913	\$411,020	\$411,517	\$437,258	\$474,600	\$536,950
Adjusted Net Income	\$7,929,005	\$6,339,442	\$5,995,259	\$6,229,569	\$6,396,985	\$5,963,028	\$6,176,287	\$5,776,492	\$5,570,428	\$2,819,952
Total Existing Debt	\$5,654,003	\$5,663,663	\$5,169,363	\$5,820,463	\$5,789,513	\$4,660,213	\$4,661,775	\$4,687,775	\$4,687,775	\$0
Pay-go Project Expenditures (includ Cap Lbr)	\$547,286	\$2,778,175	\$3,319,235	\$4,341,926	\$3,626,048	\$1,838,388	\$116,759	\$1,321,490	\$1,439,736	\$3,323,351
Net Increase (Decrease) in Cash	\$1,727,716	(\$2,102,396)	(\$2,493,339)	(\$3,932,819)	(\$3,018,576)	(\$535,573)	\$1,397,753	(\$232,773)	(\$557,082)	(\$503,399)
Beginning Unrestricted Reserves	\$15,800,000	\$17,259,017	\$15,156,621	\$12,663,282	\$8,730,463	\$5,711,887	\$5,176,313	\$6,574,066	\$6,242,235	\$2,699,477
Adjustments	\$268,699	\$0								
Ending Unrestricted Reserves (c)	\$17,259,017	\$15,156,621	\$12,663,282	\$8,730,463	\$5,711,887	\$5,176,313	\$6,574,066	\$6,341,293	\$5,685,152	\$2,196,078
Target Reserves (O&M & Capital)	\$9,000,000	\$9,000,000	\$8,000,000	\$9,000,000	\$7,000,000	\$6,000,000	\$6,000,000	\$6,000,000	\$6,000,000	\$2,000,000

a. The O&M cost for Supplies and Services is increased for inflation; 23% of the this cost is proportional to the number of ERUs.

b. Capacity fees are based on the unit fee times the number of new ERUs per year.

c. The FY-ending 2012-13 wastewater enterprise fund balance as of June 30, 2013 is \$17.3 million. The funds exclude \$844,000 in refundable deposits and prepaid capacity fees, and \$686,000 in normal accounts receivable levels.

TABLE 11
SEWER SERVICE CHARGES WITH EXISTING STRUCTURE

	Estimated	Current	Projected			Year 5	Year 10	Year 15
City Wastewater System Costs	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18	FY 22-23	FY 27-28
O&M Costs	\$273	\$365	\$375	\$385	\$396	\$407	\$472	\$554
Debt Service	\$605	\$604	\$549	\$616	\$611	\$490	\$484	\$0
Pay-go Project Costs	\$59	\$296	\$353	\$460	\$382	\$193	\$149	\$336
Bad Debt	\$17	\$17	\$18	\$19	\$19	\$20	\$24	\$24
Less Funding from Sales Taxes	(\$480)	(\$428)	(\$373)	(\$379)	(\$385)	(\$326)	(\$212)	\$0
Less Miscellaneous Revenues	(\$90)	(\$62)	(\$66)	(\$70)	(\$66)	(\$63)	(\$73)	(\$78)
Money to (from) Project Funds	\$185	(\$224)	(\$265)	(\$416)	(\$318)	(\$56)	(\$57)	(\$51)
Annual Wastewater Charge (\$/ERU)	\$568	\$568	\$591	\$614	\$639	\$665	\$785	\$785
Monthly Wastewater Charge (\$/ERU)	\$47.34	\$47.34	\$49.23	\$51.20	\$53.25	\$55.38	\$65.45	\$65.45
Billable ERUs	9,353	9,381	9,410	9,445	9,480	9,515	9,693	9,877
Annual Net Sewer Service Charge Revenues	\$5,297,932	\$5,329,171	\$5,559,471	\$5,803,356	\$6,057,855	\$6,323,430	\$7,613,431	\$7,757,955
Change in Annual Revenues	11%	1%	4%	4%	4%	4%	3%	0%
Change in Unit Wastewater Charge (ERU)	10%	0%	4.0%	4%	4%	4%	3%	0%
Actual City Cost of WW System (\$/ERU-yr)	\$1,049	\$996	\$963	\$993	\$1,024	\$990	\$997	\$785
Actual City Cost of WW System (\$/ERU-month)	\$87.38	\$82.97	\$80.29	\$82.76	\$85.32	\$82.54	\$83.12	\$65.45
WWRP Capacity Fee (\$/ERU)	\$8,631	\$8,890	\$9,157	\$9,431	\$9,714	\$10,006	\$11,599	\$13,447

TABLE 12
RATE SURVEY

Name of Wastewater System	No. of Connections	Charge Structure		Fixed Service Charge (\$/mo)	Monthly Charge (\$/ERU)		
		Residential	Restaurant		5 kgal	7 kgal	10 kgal
Wastewater Monthly Service Charges							
Coolidge (2011)	3,800	--- Winter Wtr Use ---		\$15.23	\$15.23	\$15.23	\$17.30
Douglas (2012)	5,600	----- Flat Rate -----		\$25.00	\$25.00	\$25.00	\$25.00
Cottonwood (2014)	5,330	----- Flat Rate -----		\$26.25	\$26.25	\$26.25	\$26.25
Show Low (2012)	5,200	Flat Rate	Uniform	\$27.58	\$27.58	\$27.58	\$27.58
Bullhead City (2011)		----- Flat Rate -----		\$28.00	\$28.00	\$28.00	\$28.00
San Luis (2013)	5,900	----- Flat Rate -----		\$30.61	\$30.61	\$30.61	\$30.61
Flagstaff (2013)	18,600	Winter Use	Uniform	\$0	\$15.40	\$21.56	\$30.80
Camp Verde Sanitary District (a)	1,300	Fixture Count		\$31.50	\$31.50	\$31.50	\$31.50
Queen Creek (2011)	6,600	--- Winter Wtr Use ---		\$7.81	\$26.16	\$33.50	\$44.51
Sedona (2013)	4,800	----- Flat Rate -----		\$47.34	\$47.34	\$47.34	\$47.34
Sahuarita (2012)	5,100	--- Winter Wtr Use ---		\$11.14	\$29.84	\$37.32	\$48.54
Chino Valley (2013)	18,400	----- Flat Rate -----		\$53.37	\$53.37	\$53.37	\$53.37
Prescott City (2013)	18,700	--- Winter Wtr Use ---		\$19.07	\$39.72	\$47.98	\$60.37
Kingman (2013)	9,000	Winter Use	Uniform	\$22.24	\$44.89	\$53.95	\$67.54
Lake Havasu City (2013)	24,750	--- Winter Wtr Use ---		\$41.00	\$48.81	\$68.33	\$97.61
Average Charge Statewide for 1,000 to 5,000 connections (b)					\$29.55	\$30.97	\$32.79

Source: WIFA 2011 Survey of 136 Wastewater Agencies: 95 agencies use flat rates, 26 use winter water use, 14 use uniform rates and 1 uses fixture counts.

a. Camp Verde Sanitary District 2012 charges are based on fixture units, with an average of 18 per home at \$1.75 per fixture unit, \$45/mo maximum.

b. Source: Water Infrastructure Finance Authority of Arizona 2011 Wastewater Rate Survey

TABLE 13
 2010 CENSUS PERSONS PER HOUSEHOLD

Description	2010 Population	Available Dwelling Units	Persons per Household
Single Family Dwellings	8,229	5,305	1.55
<u>Multi-family Dwelling Apartments</u>			
2 to 4	199	347	
5 or more	595	416	
Total	794	763	1.04
Total	9,023	6,068	
Persons per Household Ratio -- Multi to Single Family			0.671
<u>Residences Excluded from Analysis</u>			
Boat, RV, van, etc.	35	17	
Mobile home (on septic)	1,249	726	1.72

Census 2010 Summary File B25033 - Sedona city

TABLE 14
WASTEWATER FIXED ASSETS

Asset Description (a)	Date of Service	Asset Life (c)	Years in Service	Original Cost	Annual Depreciation	2013 Total Depreciation	Original Cost	Replacement Cost New	Annual RC Depreciation	FY 2013 RCLD (b)	
							Less Deprc (OCLD)				
Building Improvements											
WW Pump Station Imp FY 09	2008	25	5	\$1,604,277	\$51,337	\$256,684	\$1,347,593	\$1,842,120	\$58,948	\$1,547,380	
Other Assets	2008	25	5	\$2,382,815	\$30,721	\$153,605	\$2,229,210	\$2,528,766	\$32,603	\$2,365,752	
WW Pump Station Imp FY 10	2009	25	4	\$1,846,760	\$55,403	\$221,611	\$1,625,149	\$2,056,218	\$61,687	\$1,809,471	
Treatment Plant Upgrade 2001	2001	50	12	\$3,328,560	\$61,039	\$732,465	\$2,596,094	\$4,970,440	\$91,147	\$3,876,671	
Land Acquisition											
Land-Waste WWRP SED Dell	1992	na	21	\$1,873,033			\$1,873,033	\$1,873,033		\$1,873,033	
Sedona Dells Prop. Crt Settlem	1992	na	21	\$2,940,792			\$2,940,792	\$2,940,792		\$2,940,792	
Area 4 Us Forest 265 Acres	2002	na	11	\$5,008,432			\$5,008,432	\$5,008,432		\$5,008,432	
Other Lands	1997	na	16	\$1,337,155			\$1,337,155	\$1,337,155		\$1,337,155	
Land Improvements											
WWRP Imp FY 96	1996	50	17	\$3,871,039	\$72,879	\$1,238,944	\$2,632,094	\$6,430,615	\$121,068	\$4,372,466	
Other Assets	1998	50	15	\$545,126	\$10,178	\$152,665	\$392,461	\$868,235	\$16,210	\$625,082	
Building Lands 1991 To 1994	1994	50	19	\$5,793,968	\$109,814	\$2,086,463	\$3,707,505	\$10,164,744	\$192,654	\$6,504,322	
Sedona Dells Wetland Imp	2012	20	1	\$2,613,861	\$130,693	\$130,693	\$2,483,168	\$2,649,964	\$132,498	\$2,517,465	
Infrastructure	2010	45	3	\$1,106,153	\$8,297	\$24,891	\$1,081,262	\$1,161,261	\$8,710	\$1,135,130	
Machinery and Equipment	2004	7	9	\$3,984,675	\$562,158	\$3,848,630	\$136,045	\$7,016,760	\$989,924	\$239,567	
Sewer Lines											
WW Line Additions FY 01	2001	50	12	\$920,578	\$16,881	\$202,577	\$718,000	\$1,374,672	\$25,209	\$1,072,169	
WW Line Additions FY 02	2002	50	11	\$4,514,833	\$82,110	\$903,214	\$3,611,619	\$6,564,153	\$119,381	\$5,250,962	
WW Line Additions FY 03	2003	50	10	\$2,705,787	\$48,719	\$487,190	\$2,218,597	\$3,806,934	\$68,546	\$3,121,477	
WW Line Additions FY 04	2004	50	9	\$1,825,889	\$32,471	\$292,242	\$1,533,647	\$2,448,719	\$43,548	\$2,056,790	
WW Line Additions FY 05	2005	50	8	\$3,867,146	\$67,702	\$541,612	\$3,325,534	\$4,955,722	\$86,759	\$4,261,649	
WW Line Additions FY 06	2006	50	7	\$4,248,357	\$72,862	\$510,036	\$3,738,321	\$5,230,011	\$89,698	\$4,602,123	
WW Line Additions FY 07	2007	50	6	\$6,766,923	\$112,844	\$677,063	\$6,089,860	\$8,105,696	\$135,169	\$7,294,682	
WW Line Additions FY 08	2008	50	5	\$11,235,630	\$179,822	\$899,110	\$10,336,521	\$12,901,370	\$206,481	\$11,868,963	
WW Line Additions FY 09	2009	50	4	\$3,862,051	\$57,931	\$231,723	\$3,630,328	\$4,300,080	\$64,501	\$4,042,075	
WW Lines as of FY 93	1993	50	20	\$12,746,244	\$242,214	\$4,844,271	\$7,901,973	\$22,904,832	\$435,255	\$14,199,741	
WW Projects FY 00	2000	50	13	\$8,947,469	\$165,222	\$2,147,881	\$6,799,588	\$13,588,532	\$250,922	\$10,326,542	
WWRP Improvements	1996	50	17	\$4,184,850	\$78,787	\$1,339,381	\$2,845,469	\$6,951,922	\$130,882	\$4,726,926	
WW Projects FY 98	1998	50	15	\$4,283,645	\$79,977	\$1,199,655	\$3,083,990	\$6,822,658	\$127,381	\$4,911,940	
WW Projects FY 99	1999	50	14	\$5,598,469	\$103,993	\$1,455,909	\$4,142,560	\$8,718,883	\$161,956	\$6,451,495	
Other WW Lines	2000	50	13	\$1,644,897	\$23,150	\$300,950	\$1,343,948	\$2,270,316	\$31,952	\$1,854,940	
Total Value (b)	1999	47		\$115,589,415	\$2,457,203	\$24,879,469	\$90,709,946	\$161,793,036	\$3,683,089	\$122,195,197	
Fixed Asset Value (RCNLD)											
				Flow				BOD			
				TSS				Total			
				Annual RC Depreciation				Total RCNLD			
Wastewater Reclamation Plant:				\$18,114,305	\$9,019,208	\$9,019,208	\$36,152,721	\$1,705,449	\$36,152,721		
Collection System:				\$86,042,476			\$86,042,476	\$1,977,640	\$86,042,476		
Total Fixed Asset Allocations				85%	7%	7%	\$122,195,197		100%		

Replacement Cost values are based on original costs increased by the Engineering News Record Construction Cost Index Average for 20 Cities in US. OCLD: Original Cost Less Depreciation. RCLD: Replacement Cost Less Depreciation.

c. City asset life values are standard service life values for assets and systems. Assets such as the vehicles, furniture, computers and software are not included.

TABLE 15
WASTEWATER FLOW AND CAPACITY

Description	FY 2011-12 ERUs	2012 Flows (MGD)	Total Plant Capacity (MGD, a)	Flow Capacity (ERUs)
Current Sewer System	8,738	1.12	1.41	11,002
Current Expansion project (FY 17/18)			1.63	12,718
Historic WWRP Headworks Influent				
FY 2011-12 Month	Total Flow (MG)	Avg Flow (MG)	COD (ppm)	TSS (ppm)
Jul-11	35.73	1.15	847	459
Aug-11	34.84	1.12	783	300
Sep-11	33.65	1.12	711	296
Oct-11	35.61	1.15	855	378
Nov-11	32.97	1.10	812	329
Dec-11	32.35	1.04	960	462
Jan-12	32.11	1.04	781	329
Feb-12	30.96	1.07	864	411
Mar-12	35.46	1.14	932	432
Apr-12	35.74	1.19	868	438
May-12	34.76	1.12	829	436
Jun-12	34.58	1.15	715	335
Total	408.74	1.12	830	384
BOD Equivalent Value			365	

Source: WWRP Records

a. Total Plant Capacity is currently 1.41 MGD but will increase to 1.63 with the expansion of the WWRP solids handling process.

BOD is 365 ppm per a Council presentation on 5/29/13 regarding WWRP Upgrade projects.

TABLE 16
UTILITY COST OF SERVICE ALLOCATIONS

Description	Fac Maint vs. Ops	Collection (flow)	Wastewater Reclamation Plant			Administration	Total
			Flow	Strength	Total		
Facility Maintenance versus Operating Costs		Collection			WWRP	Administration	Total
Facilities Maintenance	41%	\$439,380			\$623,748	\$0	\$1,063,129
System Operations (including utilities)	59%	\$447,870			\$511,132	\$596,473	\$1,555,475
Total O&M (excluding depreciation)	100%	\$887,250			\$1,134,880	\$596,473	\$2,618,603
Cost of Service Allocations of Total System Costs							
Labor	30%	\$347,727	\$345,392	\$109,388	\$454,780	\$390,630	\$1,193,137
Professional services	70%	\$18,499	\$19,558	\$39,709	\$59,266	\$38,667	\$116,433
Utilities	0%	\$198,911	\$57,752	\$117,254	\$175,006	\$167,176	\$541,093
Other/Maintenance	100%	\$322,113	\$147,123	\$298,705	\$445,828		\$767,941
Total O&M (excluding depreciation)		\$887,250	\$569,825	\$565,055	\$1,134,880	\$596,473	\$2,618,603
Depreciation (original cost)	100%	\$1,319,399	\$568,902	\$568,902	\$1,137,804		\$2,457,203
Total		\$2,206,649	\$1,138,727	\$1,133,957	\$2,272,684	\$596,473	\$5,075,807
Total Allocations (WWRP Flow/Strength)			50%	50%	100%		
Total Allocations (Collection/WWRP Flow/Strength/Admin)			43%	22%	45%	12%	100%
Consolidated Allocations (Flow/Strength/Admin, a)			66%	22%		12%	100%
System Facilities Cost of Maintenance and Depreciation							
Annual Depreciation (original cost)		\$1,319,399			\$1,137,804		\$2,457,203
Facilities Maintenance		\$439,380			\$623,748		\$1,063,129
Total Maintenance & Depreciation Costs		\$1,758,779			\$1,761,552		\$3,520,332

Values above represent utility costs, not revenues.

Cost allocations among the service functions are based on typical industrial parameters.

a. Restaurant discounts for water saving and strength reducing appliances are based on these percentages

TABLE 17
 MASS BALANCE OF WATER USE & WASTEWATER DISCHARGES

Water Accounts	No. of Customers/ Dwellings	Total Wtr Use (Hgal/yr)	Est Accts or Dwellings on Septic System	Sewered Water Use (Hgal/yr)	Accounts: Water Use Returned to Sewers (%)		Sewer Flow Total (Hgal/yr)	No. of WW Accts/ Dwellings	Average WW Flows (GPD)
					Winter	Summer			
Other Commercial Accts	437	557,300	0	557,300	65%	55%	327,869	471	191
Restaurant Accts	76	554,930	0	554,930	75%	65%	384,951	92	1,146
Hotel, Resort & Motel	88	1,612,248	10	1,429,038	75%	54%	900,906	71	3,476
Mobile Home & RV Park Accts	18	104,751	15	17,459	75%	54%	10,667	1	2,923
Multi-family Dwellings (MFD)	763	467,368	577	113,933	75%	58%	74,353	186	110
Single Family Dwellings (SFD)	5,263	5,972,010	548	5,350,185	57%	37%	2,386,405	4,715	139
Total	6,645	9,268,607	1,150	8,022,844			4,085,152	5,536	

Total connected WW accounts excludes patios linked to master restaurant accounts
 There is no significant inflow/infiltration (I/I) in the average annual flows.

WW Acct Strengths	WW Flow Total (Hgal/yr)	Average Wastewater Strengths				Calculated Wtr Return to Sewer
		BOD		TSS		
		PPM	PPD	PPM	PPD	
Other Commercial Accts	327,869	341	255	456	342	59%
Restaurant Accts	384,951	1,146	1,008	868	764	69%
Hotel, Resort & Motel	900,906	384	791	429	884	63%
Mobile Home & RV Park	10,667	384	9	429	10	61%
Multi-family Dwellings (MFD)	74,353	237	40	278	47	65%
Single Family Dwellings (SFD)	2,386,405	237	1,292	278	1,516	45%
Total Wastewater Discharges	4,085,152		3,397		3,563	
WWRP Influent Load (Hgal/yr)	4,087,390	365	3,409	384	3,588	

TABLE 18
WASTEWATER LOAD DETAILS

Category	Billing Classifications	Billing Unit	Sewage Strength Class	Accounts	WW Flow (Hgal/yr)	GPD per Unit	BOD (Lbs/yr)	TSS (Lbs/yr)			
Other Commercial Dischargers											
STLC	104	Theaters, Libraries, Churches	Seat	4,310	Low	26	35,446	2	6,215	8,257	
SBDIN	105	Bar without dining facility	Seat	309	Med	17	17,539	16	3,743	5,053	
SCWNR	107	Car Wash with Recycle	Bay	5	Low	2	6,727	369	834	1,752	
SDRTL	108	Department, Retail Stores	Restroom	308	Low	149	18,180	16	3,188	4,272	
SFTNS	112	Fitness Center / Beauty Salon	100 sq ft	398	Low	18	13,840	10	2,610	3,224	
SCWSH	113	Private Tour Jeep & Rental Car/Jeep Wa	Vehicle	48	Med	3	1,569	9	358	529	
SMKT	115	Market	Connection	4	High	4	5,984	410	4,601	5,789	
SMORT	116	Mortuaries	Connection	1	High	1	2,363	648	1,771	2,325	
SOFF	117	Offices, Med Bldg, Mfg, Contractors	100 sq ft	6,498	Low	203	48,414	2	8,569	11,871	
SRSHP	118	Repair Shops, Service Stations	Connection	16	Med	15	6,048	104	1,380	2,064	
SSCHG	121	School, College, w/ gym showers	Student	390	Med	1	55,933	39	447	424	
SSCHC	122	School, College w/ café	Student	338	High	1	38,104	31	29,295	36,858	
SSCHNG	123	School, College w/o gym or café	Student	329	Low	6	3,462	3	12,768	18,515	
SPRST	124	Public Restroom	Fixture	88	Med	17	56,305	175	13,244	19,190	
SLMATE	125	Laundromat (efficiency)	Machine	18	Low	1	7,159	109	1,350	1,668	
SLMT18	126	Laundomat (12-18 lb)	Machine	9	Low	2	4,611	140	870	1,074	
ALMT27	127	Laundromat (25-35 lb)	Machine	8	Med	-	4,932	169	1,664	1,542	
SCOMM/	129	Commercial - minimum	Connection	5	Low	5	1,405	77	249	344	
Subtotal Other Commercial Dischargers						471	328,022		93,154	124,751	
									BOD/TSS (PPM)	341	456
Consolidated Water and Strength-based Classes											
									BOD (PPM)	TSS (PPM)	
SFR Dischargers			Unit		Sewage Strength Class	Accounts	WW Flow (Hgal/yr)	GPD per Unit	BOD (Lbs/yr)	TSS (Lbs/yr)	
MFD Dischargers											
Vacant - Sewer Availability Accounts											
Subtotal Other Commercial Dischargers						471	328,022		93,154	124,751	
Restaurant Dischargers			4,898		Rest	92	384,951	22	368,040	278,761	
Hotels & Resort Dischargers			2,333		Hotel	71	911,573	107	292,218	326,331	
Total at Wastewater Reclamation Plant						6,578	4,085,305		1,239,802	1,300,374	

a. The average GPD per unit is not modified in this update

TABLE 19
WASTEWATER LOADS BY CUSTOMER TYPE

Sedona Billing Classifications	State Water Resources Control Board		Los Angeles County Sanitation Districts			Kansas City, Missouri		Avg of All Sources (ppm)		Est. WW Flows (Hgal/yr)	Mass Balance of System Loads (PPD)	
	BOD	SS	COD	BOD	TSS	BOD	SS	BOD	SS		BOD	SS
	Residential SFD								237		278	2,386,405
Multi Family/Apartments								237	278	74,353	40	47
Subtotal Residential										2,460,758	1,333	1,563
Other Commercial Accounts								341	456	328,022	255	342
Hotels	310	120	520	230	270	429	486	384	429	911,573	801	894
Restaurants	1,000	600	2,000	890	600	1,000	572	1,146	868	384,951	1,008	764
Subtotal Non-residential										1,624,547	2,064	2,000
Total WW Flows & Loads										4,085,305	3,397	3,563

TABLE 20
FY 2011-12 WASTEWATER CHARGES

Category	Billing Classifications	Billing Units	Estimated FY 2011-12			FY 2011-12	Estimated FY
			Accts	Units	ERUs	Service chg (\$/Unit-mon)	2011-12 Revenues
SRES1	101 Residential	Dwelling	2,691	2,819	2,815	\$43.03	\$1,453,347
SRES2	102 Residential (Low Flow)	Dwelling	1,983	2,255	2,037	\$39.04	\$1,051,736
ADU	18 ADU - Accessory Dwelling Unit	Connection	0	8	4	\$21.52	\$2,065
SMFAPT	15 Multi Family/Apartments	Dwelling	15	186	159	\$36.79	\$82,145
SRSUB	Residential Subsidy	Connection	41	25	15	\$25.00	\$7,500
Residential Total Monthly Fees			4,730		5,029		\$2,596,793
STLC	104 Theaters, Libraries, Churches	Seat	26	4,310	57	\$0.57	\$29,617
SBDIN	105 Bar without dining facility	Seat	17	309	27	\$3.81	\$14,168
SCWNR	107 Car Wash with Recycle	Bay	2	5	10	\$85.88	\$5,152
SDRTL	108 Department, Retail Stores	Restroom	149	308	46	\$6.48	\$23,871
SHOTEL	110 Hotel, Motel, RV Park	Room	48	1,704	959	\$24.19	\$495,380
SRCV	111 Resort - Cottages, Villas	Connection	23	629	707	\$48.38	\$365,035
SFTNS	112 Fitness Center / Beauty Salon	100 sq ft	18	398	25	\$2.67	\$12,720
SCWSH	113 Private Tour Jeep & Rental Car/Jeep V	vehicle	3	48	3	\$2.45	\$1,408
SMKT	115 Market	Connection	4	4	15	\$159.02	\$7,632
SMORT	116 Mortuaries	Connection	1	1	6	\$251.20	\$3,014
SOFF	117 Offices, Med Bldg, Mfg, Contractors	100 sq ft	203	6,498	86	\$0.57	\$44,498
SRSHOP	118 Repair Shops, Service Stations	Connection	15	16	12	\$31.81	\$6,106
SRSTRT	120 Restaurant	Seat	76	4,499	1,393	\$13.33	\$719,406
PSS	2 Restaurant w/Patio Seats (seasonal)	Seat	16	399	62	\$6.67	\$31,901
SSCHG	121 School, College, w/ gym showers	Student	1	390	67	\$7.43	\$34,754
SSCHC	122 School, College w/ café	Student	1	338	94	\$12.00	\$48,593
SSCHNG	123 School, College w/o gym or café	Student	6	329	21	\$2.69	\$10,607
SPRST	124 Public Restroom	Fixture	17	88	88	\$43.03	\$45,482
SLMATE	125 Laundromat (efficiency)	Machine	1	18	11	\$25.39	\$5,484
SLMT18	126 Laundromat (12-18 lb)	Machine	2	9	7	\$32.71	\$3,532
ALMT27	127 Laundromat (25-35 lb)	Machine	0	8	8	\$41.46	\$3,984
ALMT29	128 Laundromat (50 lb)	Machine	0	0	0	\$66.71	\$0
SCOMMA	129 Commercial - minimum	Connection	5	5	5	\$43.03	\$2,582
Non-Residential Total			634		3,709		\$1,914,926
Total Accounts (excluding Sewer Availability)			5,364		8,738	Grand Total	\$4,511,719
Vacant - Sewer Availability Accounts			1,214			Bad Debt 3%	(\$134,861)
Total Accounts (including Sewer Availability)			6,578			Total Calculated Charges	\$4,376,858
Total Charges Reported Excluding Vacant - Sewer Availability							\$4,325,809
Difference Between Reported and Calculated Values							-1.2%

ERUs: Equivalent residential units.

Not included: Vacant - Sewer Availability Revenues of \$326,650 in FY 2011-12 at a rate of \$21.52 per parcel.

Deferral Fees Category DEFFEE are penalties not included above.

Environmental fee penalty Category ENV 1502 are for developed parcels not connecting with available sewers, and are not included above.

The environmental fee (penalty) for non-connection is double the regular monthly ERU fee.

a. Source: May 2013 accounts and billing units, and rate schedule from customer billing records.

TABLE 21
COST OF SERVICE ANALYSIS

Category	Rate-based Revenues	FY 2011-12 Accounts	WW Flow (Hgal/yr)	BOD (Lbs/yr)	TSS (Lbs/yr)	Share of Loads	Annual Cost of Service	Adjustment to Charges
Total WW System Annual Charges		\$530,186	\$2,973,596	\$503,969	\$503,969		\$4,511,719	
Share of one ERU Loads		12%	66%	11%	11%			
Unit Charges		5,364	4,085,305	1,239,802	1,300,374			
		\$98.84	\$0.7279	\$0.41	\$0.39			
		(\$/Acct-yr)	(\$/Hgal)	(\$/Lbs)	(\$/Lbs)			
SFR Dischargers	\$1,462,912	2,732	1,535,310	263,232	308,770	36%	\$1,614,218	10%
SFR Low Flow	\$1,051,736	1,983	851,095	208,460	244,523	22%	\$994,998	-5.4%
MFD Dischargers	\$82,145	15	74,353	14,696	17,239	2%	\$68,257	-17%
Other Commercial Dischargers	\$303,204	471	328,022	93,154	124,751	8%	\$371,529	23%
Restaurant Dischargers	\$751,307	92	384,951	368,040	278,761	12%	\$546,931	-27%
Hotels & Resort Dischargers	\$860,415	71	911,573	292,218	326,331	20%	\$915,786	6.4%
Subtotal All Customers	\$4,511,719	5,364	4,085,305	1,239,802	1,300,374	100%	\$4,511,753	0.0%
Vacant - Sewer Availability	\$326,650	1,214					\$326,650	
Grand Total all Rate-based Revenues	\$4,838,369	6,578					\$4,838,403	
Residential Dischargers		Account	Sewage Gallons per Month	Change in Flows	BOD Lbs/Month	TSS Lbs/Month	ERUs	Change in ERUs
Updated SFR Discharger (1.0 ERU)		1	4,584	-25%	7.9	9.2	1.00	0%
Prior SFR Discharge Load (1.0 ERU)		1	6,080		na	na	1.00	
Updated Low flow SFR Discharger		1	3,176	-42%	7.9	9.2	0.78	-14%
Prior Low flow SFR Discharger		1	5,515		na	na	0.91	

a. Residential Potential HET Water Savings is 34 gpd. HET are 1.6 gpd, while regular toilets are 5 gpd. Toilets are flushed 5 times per day with 2 pph.

TABLE 22
SEWER AVAILABILITY CHARGE UPDATE

Description	WWTP	Collection	Total
Annual Depreciation of Fixed Assets	\$1,137,804	\$1,319,399	\$2,457,203
Annual Maintenance of Facilities	\$623,748	\$439,380	\$1,063,129
Annual Maintenance Cost of Facilities	\$1,761,552	\$1,758,779	\$3,520,332
System Capacity (ERUs)			11,002
FY 11-12 Cost of Unused Facilities (\$/Year per undeveloped parcel)			\$319.98
FY 11-12 COS Sewer System Charge (\$/Year-ERU)			\$569.77
Cost of Service Sewer Availability Charge (COS-based ERU per parcel)			0.562
Recommended Rounded Down Sewer Availability Charge (ERU per parcel)			0.500
FY 2011-12 Recommended Unchanged Sewer Availability Charge (\$/parcel-mo)			\$21.52
FY 2012-13 1.0 ERU			\$47.34
FY 2013-14 COSA-based 1.0 ERU			\$52.24
FY 2014-15 1.0 ERU			\$54.33
FY 2013-14 Recommended Sewer Availability Charge (\$/parcel-mo)			\$26.12
FY 2014-15 Recommended Sewer Availability Charge (\$/parcel-mo)			\$27.16
FY 11-12 Current Sewer Availability Charge (\$/parcel-mo)			\$21.52
Number of Parcels Billed (billing units)			1,265
Total Annual Revenues			\$326,650

Sewer availability charges are for sewerred but vacant (undeveloped) parcels.
Parcels with restrictive covenants precluding future use of the sewers should not be billed.
Developed parcels on septic with fronting sewers are charged an Environmental fee.

TABLE 23
 UPDATED MINIMUM SERVICE CHARGE FOR ACCOUNTS

Description	Sewer Availability Charge (ERU per parcel)	Unit Rates (\$/mo per ERU, FY 2011-12)	Billing Units
Cost of Service Based Minimum Account Charge			
Sewer Availability Charge	56.2%	\$26.67	\$ per month-ERU
WW System Administrative Costs of Service		\$8.24	\$ per month-Account
COSA-based Minimum Commercial Charge	73.5%	\$34.90	\$ per month-Account
Recommended Minimum Account Charge FY 2011-12			
Sewer Availability Charge Rounded Down	50%	\$21.52	\$ per month-ERU
WW System Administrative Costs of Service		\$8.24	\$ per month-Account
Recommended Minimum Commercial Charge	63%	\$29.75	\$ per month-Account
<hr/>			
FY 2012-13 1.0 ERU		\$47.34	
FY 2013-14 COSA-based 1.0 ERU		\$52.24	
FY 2014-15 1.0 ERU		\$54.33	
Recommended Min Acct Charge for FY 2013-14 (ERUs)	0.63	\$32.73	\$ per month-Account
Recommended Min Acct Charge for FY 2014-15 (ERUs)	0.63	\$34.04	\$ per month-Account

Minimum Service Charges are for parcels with active sewer accounts connections. Sewer availability charges are for sewerred but undeveloped parcels. The City wastewater system capacity is designed based on connected capacity equal to no less than one ERU per parcel.

TABLE 24
 UPDATED SEPTAGE DISPOSAL FEES

Description	FY 2011-12 Accounts	WW Flow (Hgal/yr)	BOD (Lbs/yr)	TSS (Lbs/yr)	Total
System Cost of Service FY 2011-12	\$530,186	\$2,973,596	\$503,969	\$503,969	\$4,511,719
Less Costs of Collection System		\$1,961,418			
Net System Cost of Service FY 11-12	\$530,186	\$1,012,178	\$503,969	\$503,969	\$4,511,719
FY 2011-12 System Loads	5,364	4,085,305	1,239,802	1,300,374	
Unit Cost of Service for WW System Excd Sewage Collection	\$98.84 (\$/Acct-yr)	\$0.25 (\$/Hgal)	\$0.41 (\$/Lbs.)	\$0.39 (\$/Lbs.)	

FY 11-12 Septage in 28 Discharged Loads	Account Billings (c)	Hgal	BOD	TSS	Total
Loads Total (PPM, b)	28	345	5,400	12,000	
Loads Total (Lbs.)	28	345	1,554	3,453	
Unit Cost of Service	\$98.84	\$0.25	\$0.41	\$0.39	
System Cost of Service FY 2011-12	\$2,768	\$85	\$632	\$1,338	\$4,823
Operation of Septage Station (d)					\$320
FY 11-12 Total Cost of Operating the Septage Station					\$5,143
FY 11-12 Septage Fees Collected (a)					\$4,287
Recommended Cost of Service Increase to Septage Fees					20%

Analysis is based on not providing WWTP dedicated capacity to the septage station.

a. FY 11-12 Septage Fees Collected per CAFR at \$0.12 per Gal in CY 2011 and \$0.16 per Gal in CY 2012. Septage fees were \$29,000 in FY 2010-11

b. Septage Strength values are per the California SWRCB standards

c. Each load requires 30 minutes of administration support to process the invoicing, with hourly salaries of \$18 plus benefits.

d. Each load requires 30 minutes of operator time for load receiving.

TABLE 25
PROJECTED FLAT RATES WITH EXISTING STRUCTURE UNCHANGED

Category		Billing Classifications	Billing Units	FY 2011-12	FY 2012-13	Current		Projected		Year 5
				Service chg. (\$/Unit-mo.)	Service chg. (\$/Unit-mo.)	FY 13-14	FY 14-15	FY 15-16	FY 16-17	FY 17-18
			Unit Rate Increase:	15%	10%	0%	4%	4%	4%	4%
SRES1	101	Residential	Dwelling	\$43.03	\$47.34	\$47.34	\$49.23	\$51.20	\$53.25	\$55.38
SRES2	102	Residential (Low Flow)	Dwelling	\$39.04	\$42.94	\$42.94	\$44.66	\$46.44	\$48.30	\$50.23
ADU	18	ADU - Accessory Dwelling Unit	Connection	\$21.52	\$23.67	\$23.67	\$24.62	\$25.60	\$26.63	\$27.69
SMFAPT	15	Multi Family/Apartments	Dwelling	\$36.79	\$40.47	\$40.47	\$42.09	\$43.77	\$45.52	\$47.34
SASBF	1001	Vacant - Sewer Availability	Parcel	\$21.52	\$23.67	\$23.67	\$24.62	\$25.60	\$26.63	\$27.69
SRSUB		Residential Subsidy	Connection	\$25.00	\$27.50	\$27.50	\$28.60	\$29.75	\$30.94	\$32.18
STLC	104	Theaters, Libraries, Churches	Seat	\$0.57	\$0.63	\$0.63	\$0.66	\$0.68	\$0.71	\$0.74
SBDIN	105	Bar without dining facility	Seat	\$3.81	\$4.19	\$4.19	\$4.36	\$4.53	\$4.71	\$4.90
SCWNR	107	Car Wash with Recycle	Bay	\$85.88	\$94.47	\$94.47	\$98.25	\$102.18	\$106.27	\$110.52
SDRTL	108	Department, Retail Stores	Restroom	\$6.48	\$7.13	\$7.13	\$7.42	\$7.71	\$8.02	\$8.34
SHOTEL	110	Hotel, Motel, B&, RV Park	Room	\$24.19	\$26.61	\$26.61	\$27.67	\$28.78	\$29.93	\$31.13
SRCV	111	Resort - Cottages, Villas	Connection	\$48.38	\$53.22	\$53.22	\$55.35	\$57.56	\$59.87	\$62.26
SFTNS	112	Fitness Center / Beauty Salon	100 sq. ft.	\$2.67	\$2.94	\$2.94	\$3.06	\$3.18	\$3.31	\$3.44
SCWSH	113	Private Tour Jeep & Rental Car/Jeep Washing	Vehicle	\$2.45	\$2.69	\$2.69	\$2.80	\$2.91	\$3.03	\$3.15
SMKT	115	Market	Connection	\$159.02	\$174.92	\$174.92	\$181.92	\$189.19	\$196.76	\$204.63
SMORT	116	Mortuaries	Connection	\$251.20	\$276.32	\$276.32	\$287.37	\$298.87	\$310.82	\$323.26
SOFF	117	Offices, Med Bldg., Mfg., Contractors	100 sq. ft.	\$0.57	\$0.63	\$0.63	\$0.66	\$0.68	\$0.71	\$0.74
SRSHOP	118	Repair Shops, Service Stations	Connection	\$31.81	\$34.99	\$34.99	\$36.39	\$37.85	\$39.36	\$40.93
SRSTRT	120	Restaurant	Seat	\$13.33	\$14.66	\$14.66	\$15.25	\$15.86	\$16.49	\$17.15
PSS	2	Restaurant w/Patio Seats (seasonal)	Seat	\$6.67	\$7.33	\$7.33	\$7.62	\$7.93	\$8.25	\$8.58
SSCHG	121	School, College, w/ gym, shower	Student	\$7.43	\$8.17	\$8.17	\$8.50	\$8.84	\$9.19	\$9.56
SSCHC	122	School, College w/ cafeteria	Student	\$12.00	\$13.20	\$13.20	\$13.73	\$14.28	\$14.85	\$15.44
SSCHNG	123	School, College w/o gym/shower/cafeteria	Student	\$2.69	\$2.96	\$2.96	\$3.08	\$3.20	\$3.33	\$3.46
SPRST	124	Public Restroom	Fixture	\$43.03	\$47.33	\$47.33	\$49.22	\$51.19	\$53.24	\$55.37
SLMATE	125	Laundromat (efficiency)	Machine	\$25.39	\$27.93	\$27.93	\$29.05	\$30.21	\$31.42	\$32.67
SLMT18	126	Laundromat (12-18 lb.)	Machine	\$32.71	\$35.98	\$35.98	\$37.42	\$38.92	\$40.47	\$42.09
ALMT27	127	Laundromat (25-35 lb.)	Machine	\$41.46	\$45.62	\$45.62	\$47.44	\$49.34	\$51.32	\$53.37
ALMT29	128	Laundromat (50 lb.)	Machine	\$66.71	\$73.38	\$73.38	\$76.32	\$79.37	\$82.54	\$85.84
SCOMMA	129	Commercial - minimum	Connection	\$43.03	\$47.34	\$47.34	\$49.23	\$51.20	\$53.25	\$55.38

TABLE 26
RATES BASED ON COST OF SERVICE

Category	Billing Classifications	Sewage Strength Class	FY 2011-12 Billing Basis			FY 2011-12 Service chg. (\$/Unit-mo)	Cost of Service Adjustment	Updated FY 11-12 Revenues	Updated FY 2011-12 Service chg. (\$/Unit-mo)	ERUs per Billing Unit	Updated FY 2013-14 Service chg. (\$/Unit-mo)
			Billing Units	Units	ERUs						
Rate-based Revenue Increase:											
SRES1	101 Residential	Res - SFR	Connection	2,819	2,815	\$43.03	10.3%	\$1,606,119	\$47.48	1.00	\$52.24
SRES2	102 Residential (Low Flow, a)	Res - SFR	Connection	2,255	2,037	\$39.04	-5.4%	\$999,577	\$36.93	0.78	\$40.62
ADU	18 ADU - Accessory Dwelling Unit	Res - SFR	Dwelling Unit	8	4	\$21.52	10.3%	\$2,280	\$23.75	0.50	\$26.12
SMFAPT	15 Multi Family/Apartments	Res - MFD	Dwelling Unit	186	159	\$36.79	-16.9%	\$68,233	\$30.57	0.64	\$33.63
SRSUB	Residential Subsidy	Res - SFR	Connection	25	15	\$25.00	10.3%	\$8,276	\$27.59	0.58	\$30.35
STLC	104 Theaters, Libraries, Churches	Low	Seat	4,310	57	\$0.57	22.5%	\$36,124	\$0.70	0.01	\$0.77
SBDIN	105 Bar without dining facility	Med	Seat	309	27	\$3.81	22.5%	\$17,311	\$4.67	0.10	\$5.13
SCWNR	107 Car Wash with Recycle	Low	Bay	5	10	\$85.88	22.5%	\$6,314	\$105.23	2.22	\$115.76
SDRTL	108 Department, Retail Stores	Low	Restroom	308	46	\$6.48	22.5%	\$29,347	\$7.94	0.17	\$8.74
SHOTEL	110 Hotel, Motel, RV Park	Hotel	Room	1,704	959	\$24.19	6.4%	\$526,469	\$25.75	0.54	\$28.32
SRCV	111 Resort - Cottages, Villas	Hotel	Connection	629	707	\$48.38	6.4%	\$388,672	\$51.49	1.08	\$56.64
SFTNS	112 Fitness Center / Beauty Salon	Low	100 sq. ft.	398	25	\$2.67	22.5%	\$15,613	\$3.27	0.07	\$3.60
SCWSH	113 Private Tour Jeep & Rental Car/Jeep W.	Med	vehicle	48	3	\$2.45	22.5%	\$1,729	\$3.00	0.06	\$3.30
SMKT	115 Market	High	Connection	4	15	\$159.02	22.5%	\$9,353	\$194.85	4.10	\$214.34
SMORT	116 Mortuaries	High	Connection	1	6	\$251.20	22.5%	\$3,694	\$307.81	6.48	\$338.59
SOFF	117 Offices, Med Bldg, Mfg, Contractors	Low	100 sq. ft.	6,498	86	\$0.57	22.5%	\$54,462	\$0.70	0.01	\$0.77
SRSHP	118 Repair Shops, Service Stations	Med	Connection	16	12	\$31.81	22.5%	\$7,484	\$38.98	0.82	\$42.87
SRSTR	120 Restaurant Indoor Seats	Rest	Seat	4,499	1,393	\$13.33	-27.2%	\$523,893	\$9.70	0.20	\$10.67
PSS	2 Restaurant Seasonal Patio Seats	Rest	Seat	399	62	\$6.67	-27.2%	\$23,249	\$4.86	0.10	\$5.34
SRSTR	120 Restaurant Indoor Seats	Rest	100 sq. ft.	<i>duplicate</i>		<i>na</i>	<i>new</i>	<i>na</i>	\$24.45	0.51	\$26.89
PSS	2 Restaurant Seasonal Patio Seats	Rest	100 sq. ft.	<i>duplicate</i>		<i>na</i>	<i>new</i>	<i>na</i>	\$12.23	0.26	\$13.44
SSCHG	121 School, College, w/ gym showers	Med	Student	390	67	\$7.43	22.5%	\$42,608	\$9.10	0.19	\$10.01
SSCHC	122 School, College w/ café	High	Student	338	94	\$12.00	22.5%	\$59,552	\$14.70	0.31	\$16.17
SSCHNG	123 School, College w/o gym or café	Low	Student	329	21	\$2.69	22.5%	\$12,995	\$3.30	0.07	\$3.63
SPRST	124 Public Restroom	Med	Fixture	88	88	\$43.03	22.5%	\$55,742	\$52.73	1.11	\$58.00
SLMATE	125 Laundromat (efficiency)	Low	Machine	18	11	\$25.39	22.5%	\$6,720	\$31.11	0.66	\$34.22
SLMT18	126 Laundromat (12-18 lb)	Low	Machine	9	7	\$32.71	22.5%	\$4,329	\$40.08	0.84	\$44.09
ALMT27	127 Laundromat (25-35 lb)	Med	Machine	8	8	\$41.46	22.5%	\$4,878	\$50.81	1.07	\$55.90
SCOMMA	129 Commercial - minimum	na	Connection	5	5	\$43.03	-30.9%	\$1,785	\$29.75	0.63	\$32.73
Total					8,738		1.3%	\$4,516,807			
Sewer Availability Charge		na	Parcel	1,265	573	\$21.52	0%	\$326,650	\$21.52	0.50	\$26.12

All other commercial accounts are consolidated to the same cost of service adjustment based on statistically significant class sizes with no less than 10% of total revenues.
a. Residential Potential HET Water Savings is 34 gpd. HET are 1.6 gpf, while regular toilets are 5 gpf. Toilets are flushed 5 times per day with 2 pph.

TABLE 27
 ALTERNATIVE WATER-USAGE BASED WASTEWATER RATES

Description	Strength	Accounts	Updated FY 11-12 Costs of Service	Metered Water Use (hgal/yr)	FY 2011-12 Values		FY 2013-14 Unit Rates		FY 2014-15 Unit Rates	
					Variable Water Use Charge (\$/hgal)	Fixed Charge (\$/Acct- mo)	Variable Water Use Charge (\$/hgal)	Fixed Charge (\$/Acct- mo)	Variable Water Use Charge (\$/hgal)	Fixed Charge (\$/Acct- mo)
Restaurant Dischargers	Rest	92	\$547,141	554,930	\$0.93	\$29.75	\$1.02	\$32.73	\$1.06	\$34.04
Hotels & Resort	Hotel	71	\$915,141	1,446,496	\$0.62	\$29.75	\$0.68	\$32.73	\$0.70	\$34.04
Residential (Regular & Low Flow)	Res	4,674	\$2,598,672	5,319,969	\$0.17	\$29.75	\$0.19	\$32.73	\$0.20	\$34.04

Wastewater accounts must have dedicated water accounts for water-based billing eligibility.
 The water use of Hotels and Resorts includes all metered use on facilities campus including irrigation use.
 This rate structure is structured with water charges based on prior year water use, for administrative convenience.

TABLE 28
RECOMMENDED MONTHLY SERVICE RATES

Category	Billing Classifications	Billing Units	Current Year 1 (FY 2013-14)			Period of Implemented New Rates			
			Existing Rates	Cost of Service Adjustment		Year 2 FY 14-15	FY 15-16	FY 16-17	Year 5 FY 17-18
			Annual Rate-based Revenue Increase:			4%	4%	4%	4%
SRES1	101 Residential	Connection	\$47.34	10%	\$52.24	\$54.33	\$56.50	\$58.76	\$61.11
SRES2	102 Residential (Low Flow, a)	Connection	\$42.94	-5.4%	\$40.62	\$42.25	\$43.94	\$45.70	\$47.52
ADU	18 ADU - Accessory Dwelling Unit	Dwelling Unit	\$23.67	10%	\$26.12	\$27.16	\$28.25	\$29.38	\$30.55
SMFAPT	15 Multi Family/Apartments	Dwelling Unit	\$40.47	-17%	\$33.63	\$34.97	\$36.37	\$37.83	\$39.34
SRSUB	Residential Subsidy	Connection	\$27.50	10%	\$30.35	\$31.56	\$32.83	\$34.14	\$35.50
STLC	104 Theaters, Libraries, Churches	Seat	\$0.63	23%	\$0.77	\$0.80	\$0.83	\$0.87	\$0.90
SBDIN	105 Bar without dining facility	Seat	\$4.19	23%	\$5.13	\$5.34	\$5.55	\$5.78	\$6.01
SCWNR	107 Car Wash with Recycle	Bay	\$94.47	23%	\$115.76	\$120.39	\$125.20	\$130.21	\$135.42
SDRTL	108 Department, Retail Stores	Restroom	\$7.13	23%	\$8.74	\$9.09	\$9.45	\$9.83	\$10.22
SHOTEL	110 Hotel, Motel, RV Park	Room	\$26.61	6.4%	\$28.32	\$29.46	\$30.63	\$31.86	\$33.13
SRCV	111 Resort - Cottages, Villas (master meter)	Unit	\$53.22	6.4%	\$56.64	\$58.91	\$61.27	\$63.72	\$66.27
SFTNS	112 Fitness Center / Beauty Salon	100 sq. ft.	\$2.94	23%	\$3.60	\$3.75	\$3.90	\$4.05	\$4.21
SCWSH	113 Private Tour Jeep & Rental Car/Jeep Wa	vehicle	\$2.69	23%	\$3.30	\$3.43	\$3.57	\$3.71	\$3.86
SMKT	115 Market	Connection	\$174.92	23%	\$214.34	\$222.91	\$231.83	\$241.10	\$250.74
SMORT	116 Mortuaries	Connection	\$276.32	23%	\$338.59	\$352.13	\$366.22	\$380.86	\$396.10
SOFF	117 Offices, Med Bldg, Mfg, Contractors	100 sq. ft.	\$0.63	23%	\$0.77	\$0.80	\$0.83	\$0.87	\$0.90
SRSHOP	118 Repair Shops, Service Stations	Connection	\$34.99	23%	\$42.87	\$44.59	\$46.37	\$48.23	\$50.16
SRSTR	120 Restaurant Indoor Seats	Seat	\$14.66	-27%	\$10.67	\$11.10	na		
PSS	2 Restaurant Seasonal Patio Seats	Seat	\$7.33	-27%	\$5.34	\$5.55	na		
SSCHG	121 Restaurant Indoor Seats	100 sq. ft.	na		\$26.89	\$27.96	\$29.08	\$30.24	\$31.45
PSS	2 Restaurant Seasonal Patio Seats	100 sq. ft.	na		\$13.44	\$13.98	\$14.54	\$15.12	\$15.73
SSCHG	121 School, College, w/ gym showers	Student	\$8.17	23%	\$10.01	\$10.41	\$10.83	\$11.26	\$11.71
SSCHC	122 School, College w/ café	Student	\$13.20	23%	\$16.17	\$16.82	\$17.49	\$18.19	\$18.92
SSCHNG	123 School, College w/o gym or café	Student	\$2.96	23%	\$3.63	\$3.77	\$3.92	\$4.08	\$4.24
SPRST	124 Public Restroom	Fixture	\$47.33	23%	\$58.00	\$60.32	\$62.73	\$65.24	\$67.85
SLMATE	125 Laundromat (efficiency)	Machine	\$27.93	23%	\$34.22	\$35.59	\$37.02	\$38.50	\$40.04
SLMT18	126 Laundromat (12-18 lb)	Machine	\$35.98	23%	\$44.09	\$45.85	\$47.69	\$49.59	\$51.58
ALMT27	127 Laundromat (25-35 lb)	Machine	\$45.62	23%	\$55.90	\$58.14	\$60.46	\$62.88	\$65.40
SCOMMA	129 Commercial - minimum	Connection			\$32.73	\$34.04	\$35.40	\$36.82	\$38.29
Sewer Availability Charge		Parcel	\$26.12	0.0%	\$26.12	\$27.16	\$28.25	\$29.38	\$30.55
Water Usage-based Rates for Restaurant/Hotel Accounts with Dedicated (unshared) Water Service									
Fixed Charge per Account		Acct-mo			\$32.73	\$34.04	\$35.40	\$36.82	\$38.29
Variable Charge									
Restaurant Dischargers with Water Meters		Metered			\$1.02	\$1.06	\$1.10	\$1.15	\$1.19
Hotels & Resorts with Water Meters		Water (Hgal)			\$0.68	\$0.70	\$0.73	\$0.76	\$0.79
Hotels & Resorts without Water Meters		Rooms and Restaurant Areas			See room & restaurant unit rates above				

Note: SHOTEL Category 110 fixed rate is for Rooms only. Restaurants on site have separate service charges.
Wastewater accounts must have dedicated water accounts for water-based billing eligibility.
The water use of Hotels and Resorts includes all metered use on facilities campus including irrigation use.
This rate structure is structured with water charges based on prior year water use, for administrative convenience.

TABLE 29
ALTERNATIVE RATES -- FOUR YEAR PHASE-IN OF COSA RATES

Category	Billing Classifications	Billing Units	Year 1 (FY 2013-14)			Period of Implemented New Rates			
			Existing Rates	COSA Change		Year 2		Year 5	
				Total	Annual	FY 14-15	FY 15-16	FY 16-17	FY 17-18
			Annual Rate-based Revenue Increase:			4%	4%	4%	4%
SRES1	101 Residential	Connection	\$47.34	10.3%	2.6%	\$50.46	\$53.78	\$57.32	\$61.11
SRES2	102 Residential (Low Flow, a)	Connection	\$42.94	-5.4%	-1.3%	\$44.08	\$45.25	\$46.45	\$47.52
ADU	18 ADU - Accessory Dwelling Unit	Dwelling Unit	\$23.67	10.3%	2.6%	\$25.23	\$26.89	\$28.66	\$30.55
SMFAPT	15 Multi Family/Apartments	Dwelling Unit	\$40.47	-16.9%	-4.2%	\$40.38	\$40.29	\$40.20	\$39.34
SRSUB	Residential Subsidy	Connection	\$27.50	10.3%	2.6%	\$29.32	\$31.25	\$33.30	\$35.50
STLC	104 Theaters, Libraries, Churches	Seat	\$0.63	22.5%	5.6%	\$0.69	\$0.76	\$0.83	\$0.90
SBDIN	105 Bar without dining facility	Seat	\$4.19	22.5%	5.6%	\$4.59	\$5.04	\$5.52	\$6.01
SCWNR	107 Car Wash with Recycle	Bay	\$94.47	22.5%	5.6%	\$104	\$114	\$124	\$135
SDRTL	108 Department, Retail Stores	Restroom	\$7.13	22.5%	5.6%	\$7.82	\$8.57	\$9.40	\$10.22
SHOTEL	110 Hotel, Motel, RV Park	Room	\$26.61	6.4%	1.6%	\$28.10	\$29.68	\$31.34	\$33.13
SRCV	111 Resort - Cottages, Villas (master meter)	Connection	\$53.22	6.4%	1.6%	\$56.21	\$59.36	\$62.69	\$66.27
SFTNS	112 Fitness Center / Beauty Salon	100 sq. ft.	\$2.94	22.5%	5.6%	\$3.22	\$3.53	\$3.87	\$4.21
SCWSH	113 Private Tour Jeep & Rental Car/Jeep Wa	vehicle	\$2.69	22.5%	5.6%	\$2.95	\$3.23	\$3.54	\$3.86
SMKT	115 Market	Connection	\$174.92	22.5%	5.6%	\$192	\$210	\$230	\$251
SMORT	116 Mortuaries	Connection	\$276.32	22.5%	5.6%	\$303	\$332	\$364	\$396
SOFF	117 Offices, Med Bldg, Mfg, Contractors	100 sq. ft.	\$0.63	22.5%	5.6%	\$0.69	\$0.76	\$0.83	\$0.90
SRSHOP	118 Repair Shops, Service Stations	Connection	\$34.99	22.5%	5.6%	\$38.36	\$42.06	\$46.11	\$50.16
SRSTR	120 Restaurant Indoor Seats	Seat	\$14.66	-27.2%	-6.8%	\$14.25	na		
PSS	2 Restaurant Seasonal Patio Seats	Seat	\$7.33	-27.2%	-6.8%	\$7.12	na		
SRSTR	120 Restaurant Indoor Seats	100 sq. ft.	na			\$28.88	\$29.72	\$30.57	\$31.45
PSS	2 Restaurant Seasonal Patio Seats	100 sq. ft.	na			\$14.44	\$14.86	\$15.29	\$15.73
SSCHG	121 School, College, w/ gym showers	Student	\$8.17	22.5%	5.6%	\$8.96	\$9.82	\$10.77	\$11.71
SSCHC	122 School, College w/ café	Student	\$13.20	22.5%	5.6%	\$14.47	\$15.87	\$17.39	\$18.92
SSCHNG	123 School, College w/o gym or café	Student	\$2.96	22.5%	5.6%	\$3.25	\$3.56	\$3.90	\$4.24
SPRST	124 Public Restroom	Fixture	\$47.33	22.5%	5.6%	\$51.89	\$56.89	\$62.37	\$67.85
SLMATE	125 Laundromat (efficiency)	Machine	\$27.93	22.5%	5.6%	\$30.62	\$33.57	\$36.80	\$40.04
SLMT18	126 Laundromat (12-18 lb)	Machine	\$35.98	22.5%	5.6%	\$39.45	\$43.25	\$47.41	\$51.58
ALMT27	127 Laundromat (25-35 lb)	Machine	\$45.62	22.5%	5.6%	\$50.01	\$54.83	\$60.12	\$65.40
SCOMMA	129 Commercial - minimum	Connection	\$32.73			\$34.04	\$35.40	\$36.82	\$38.29
Sewer Availability Charge		Parcel	\$26.12	0.0%		\$27.16	\$28.25	\$29.38	\$30.55
Alternative Water Usage-based Rates for Accounts with Dedicated (unshared) Water Service									
Fixed Charge per Account		Acct-mo	\$32.73			\$34.04	\$35.40	\$36.82	\$38.29
Variable Charge									
Restaurant Dischargers with Water Meters		Metered	\$1.02			\$1.06	\$1.10	\$1.15	\$1.19
Hotels & Resorts with Water Meters		Water (Hgal)	\$0.68			\$0.70	\$0.73	\$0.76	\$0.79

Note: SHOTEL Category 110 fixed rate is for Rooms only. Restaurants on site have separate service charges.
Wastewater accounts must have dedicated water accounts for water-based billing eligibility.
The water use of Hotels and Resorts includes all metered use on facilities campus including irrigation use.
This rate structure is structured with water charges based on prior year water use, for administrative convenience.

APPENDIX A
 RESTAURANT WATER USE AND CURRENT BILLING

Rest Study No.	Restaurant Owner and WW Account	Service Address	Restaurant Areas (a, SF)		Billing Units (type varies)	Equivalent Indoor Seats	WW ERUs Billed	Avg Monthly Water Use (Hgal)	Water per ERU (Hgal/mo-ERU)			Shoulder Season		High Season			High Season			Shoulder Season		Low Season			Low Season		
			Interior	Exterior					Shoulder	Summer	Winter	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March				
1	SEDONA CULINARY CONCEPTS: Acct 5245 & 34	320 N SR 89A	3,638	462	183	178	55	908	16	17	17	774	711	798	869	1,021	965	874	1,225	749	1,139	778	990				
2	L'AUBERGE ORCHARDS: 5269, 5261	254 N SR 89A	1,260	1,386	151	197	61	928	16	18	11	1,059	983	1,246	1,325	962	832	1,053	784	816	563	592					
3	QAXACA: Accts 5279, 5280	321 N SR 89A	1,943	660	168	136	42	1,583	42	45	26	1,880	1,925	2,449	1,806	1,784	1,565	1,475	1,805	1,087	961	1,233	1,028				
4	SCD Cowboy Club: 5529, 5528	241 N SR 89A	3,200	700	156	138	43	972	22	28	18	785	931	1,018	1,234	1,297	1,169	989	1,076	851	629	797	886				
6	NEW YORK BAGELS: 13457, 58, 64, 65, 34618	1420 W SR 89A			225	251	78	261	4	6	0	178	338	385	418	439	508	459	367	10	10	13	12				
46	JUDI'S RESTAURANT: 11594	40 SOLDIERS PAS	1,000	-	50	50	15	1,521	93	103	98	1,320	1,393	1,686	1,509	1,343	1,851	1,424	1,620	1,947	1,701	1,237	1,215				
69	FGP Barking Frog: 11524	2620 W SR 89A	8,200	2,000	189	189	59	1,348	23	32	14	1,360	1,050	2,102	1,883	1,316	2,184	1,708	1,213	829	923	757	854				
12	CANYON Breeze (RETAIL #3): Acct 5247	300 N SR 89A	4,291	1,879	152	152	47	1,935	44	54	26	1,684	2,206	2,893	2,616	2,398	2,295	1,964	2,355	1,583	1,299	962	963				
65	HIDEAWAY RESTAURANT: 34642	221 SR 179			110	110	34	1,776	48	50	58	1,454	1,399	1,478	1,642	1,743	2,008	1,478	2,207	3,813	2,451	1,064	580				
57	CAFE JOSE LLC: 13433	2300 W SR 89A			109	109	34	1,275	39	43	31	1,385	1,373	1,643	1,510	1,252	1,463	1,194	1,290	1,035	1,105	1,100	951				
63	SOUND BITES GRILL SEDONA LLC: 33918	101 N SR 89A			176	160	50	752	13	15	17	395	288	432	702	908	913	852	1,066	892	894	790	889				
31	THAI SPICES: 10702	2611 W SR 89A			52	47	15	748	48	61	45	653	688	1,178	848	696	854	722	739	917	668	587	425				
35	COFFEE POT RESTAURANT: 10853	2050 W SR 89A	1,701	1,260	132	132	41	702	18	18	15	790	714	847	743	675	732	644	777	572	677	640	616				
7	RENE'S-TLAQUEPAQUE: 5672, 5669, 5675, 5676	336 SR 179			339	322	100	677	7	9	5	658	672	743	683	1,044	933	622	723	650	531	418	443				
45	HEARTLINE CAFE RESTAURANT: 11569	1610 W SR 89A			76	72	22	648	29	35	23	539	500	965	766	636	766	689	840	602	636	348	491				
34	DAHL & DILUCA: 10840	2321 W SR 89A			118	106	33	600	20	22	13	418	877	826	771	566	733	577	784	456	449	331	408				
33	GOLDEN GOOSE CAFE LLC: 10825	2545 W SR 89A			109	98	30	572	17	20	19	489	674	717	703	580	442	467	459	356	411	1,011	559				
49	CASA BONITA: 12014	170 COFFEE POT DRIVE			74	74	23	544	23	24	24	523	366	377	616	535	682	632	594	634	519	488	567				
16	THAI PALACE UPTOWN: 5531	260 VAN DEREN R	648	702	61	49	15	493	33	38	26	430	490	494	542	599	660	552	546	460	451	395	299				
40	NICKS WEST SIDE: 11298	2920 W SR 89A			72	46	14	454	30	41	25	276	344	716	599	514	506	475	600	446	319	354	302				
36	OAK CREEK BREWING CO: 10874	215 COFFEE POT DRIVE			50	53	16	381	18	36	16	147	150	217	660	886	587	442	432	466	113	162	308				
32	MCDONALD'S #12329: 10706	2380 W SR 89A	792	648	54	54	17	320	20	21	17	347	316	372	369	310	353	311	348	252	287	292	288				
68	FAMOUS PIZZA: 9914, 9915	3190 W SR 89A	405	1,296	27	27	8	312	33	54	25	256	224	205	765	556	295	343	264	271	55	288	224				
30	RELICS LLC: 9920	3235 W SR 89A			52	46	14	278	21	29	9	257	311	408	379	432	416	305	315	175	110	114	113				
60	TORTAS DEL FUEGO: 14633	1630 W SR 89A			12	12	4	278	64	80	80	112	263	287	297	299	301	250	327	516	240	226	213				
15	SHIRAI: 5455	465 JORDAN ROAD			43	45	14	265	20	21	16	199	297	356	336	221	267	362	245	249	191	201	251				
64	INDIA PALACE: 34495	170 COFFEE POT DRIVE			44	44	14	255	21	16	19	381	269	211	228	198	232	222	271	245	321	222	256				
14	TOWER CAPITAL: 5271	273 N SR 89A			72	67	21	238	11	16	7	124	213	449	299	289	272	286	306	255	139	131	90				
17	RED ROCK BBQ: 5633	150 SR 179			58	58	18	214	12	13	10	256	232	209	231	245	242	173	231	196	199	164	187				
24	SENIOR BOB'S HOT DOGS: 5939	841 SR 179			7	7	2	113	45	73	38	110	47	146	176	146	169	110	121	118	66	65	80				
13	MESQUITE GRILL & BBQ: 5270	255 N SR 89A			9	9	3	111	44	25	50	184	172	76	67	71	66	59	79	90	149	213	108				
8	SEDONA SWEET ARTS: 10699, 10700	2675 W SR 89A			10	10	3	102	33	39	27	104	99	145	119	107	114	104	97	96	98	60	86				
11	PINK JAVA CAFE: 5211	204 N SR 89A			25	6	2	96	52	55	50	88	91	112	94	104	90	74	126	97	100	88	82				
	ST Cross-referenced Restaurants	Restaurant Accounts	33		3,054	946		259,916	23	27	19	19,615	20,606	26,186	25,805	24,172	25,557	21,670	24,501	21,699	18,657	16,092	15,356				
	Other Restaurants Not Cross-referenced	Restaurant Accounts	43		1,644	509		295,014	48	57	40	22,264	23,389	29,722	29,290	27,436	29,008	24,596	27,810	24,629	21,176	18,265	17,430				
	GT Restaurants Total Annual Water Use	Restaurant Accounts	76		4,699	1,455		554,930	32	37	26	41,879	43,995	55,908	55,095	51,608	54,565	46,266	52,311	46,328	39,833	34,357	32,786				
	Water Use per Equivalent Seat (GPD)							32	23	27	19	20.7	21.8	27.7	27.3	25.5	27.0	22.9	25.9	22.9	19.7	17.0	16.2				
	Est. Sewage Discharge per Seat (GPD)							22	16	19	13																

a. Restaurant areas are the customer seating area and passageways, not including restrooms or private areas such as kitchens and storage areas. Some of the listed restaurants include multiple wastewater accounts when the water account serves multiple business. All accounts are for restaurants but some water use (including Judi's Restaurant) may include other unrelated businesses in strip malls and resorts. The listed ERUs are all associated with the restaurants. Restaurant Study Nos. 1 to 6 and 46 are key restaurants for review.

APPENDIX B
WATER CUSTOMERS IN THE CITY OF SEDONA

Description	No. of Accounts	Water Use to 3/2013 (Hgal)	Shoulder Season		High Season	High Season		Shoulder Season		Low Season	Low Season		Low Season	
			April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March
AWC Water Customers														
Other Commercial	429	547,098	44,013	47,103	61,857	68,964	55,698	55,913	46,590	48,444	36,028	27,499	27,897	27,092
Restaurant Accounts	72	525,724	42,875	45,003	54,149	51,307	47,578	51,711	42,393	48,881	39,669	36,848	33,020	32,290
Hotel, Motel & B&B Accounts	88	1,612,248	151,597	131,576	164,521	174,699	155,414	155,210	124,695	143,456	118,008	126,898	83,704	82,470
Mobile Home & RV Park Accts	18	104,751	4,398	6,465	13,417	13,003	11,434	14,228	8,810	8,436	5,641	8,693	5,768	4,458
MFD (Dwelling Units)	763	467,368	29,947	30,609	41,206	48,510	42,141	48,756	38,410	45,007	41,510	38,518	35,318	27,436
SFD (Dwelling Units)	4,540	5,149,699	320,049	405,607	596,591	657,709	532,825	545,425	450,459	473,207	350,467	288,640	284,399	244,321
Subtotal	5,910	8,406,887	592,879	666,363	931,742	1,014,191	845,090	871,243	711,357	767,430	591,323	527,096	470,106	418,067
SFD Median (Hgal/mo)	4,540	724	44	52	73	80	64	68	56	61	48	40	39	35
Note: 30% of the MFD water account water use is reclassified to SFD use, and 35% of other commercial use is reassigned to Hotel use.														
OCWC Customers (2012)														
Other Commercial	8	10,202	821	878	1,154	1,286	1,039	1,043	869	903	672	513	520	505
Restaurant Accounts	4	29,207	2,382	2,500	3,008	2,850	2,643	2,873	2,355	2,716	2,204	2,047	1,834	1,794
SFD (Dwelling Units)	723	822,311	67,427	86,831	95,238	93,734	81,098	69,575	81,186	56,581	47,074	46,920	45,315	51,331
Subtotal	735	861,720	70,630	90,210	99,400	97,870	84,780	73,490	84,410	60,200	49,950	49,480	47,670	53,630
Water Customers/Dwellings in the City of Sedona														
Other Commercial	437	557,300	44,834	47,981	63,011	70,250	56,737	56,956	47,459	49,347	36,700	28,012	28,417	27,597
Restaurant Accounts	76	554,930	45,257	47,503	57,158	54,157	50,221	54,584	44,749	51,596	41,873	38,895	34,854	34,084
Hotel, Motel Accounts	88	1,612,248	151,597	131,576	164,521	174,699	155,414	155,210	124,695	143,456	118,008	126,898	83,704	82,470
Mobile Home & RV Park Accts	18	104,751	4,398	6,465	13,417	13,003	11,434	14,228	8,810	8,436	5,641	8,693	5,768	4,458
MFD (Dwelling Units)	763	467,368	29,947	30,609	41,206	48,510	42,141	48,756	38,410	45,007	41,510	38,518	35,318	27,436
SFD (Dwelling Units)	5,263	5,972,010	387,476	492,439	691,829	751,443	613,923	614,999	531,645	529,788	397,541	335,560	329,715	295,652
Grand Total	6,645	9,268,607	663,509	756,573	1,031,142	1,112,061	929,870	944,733	795,767	827,630	641,273	576,576	517,776	471,697

Water Customers/Dwellings in the City of Sedona	Average Use (Hgal/mo-acct)			Average Use (GPD-acct)		
	Winter	Annual	Summer	Winter	Annual	Summer
Commercial Accounts	81	106	131	268	350	431
Restaurant Accounts	532	608	685	1,749	2,002	2,254
Hotel, Motel	1,315	1,527	1,739	4,326	5,023	5,720
Mobile Home & RV Park	328	485	642	1,079	1,596	2,112
MFD (Dwelling Units)	44	51	58	146	168	190
SFD (Dwelling Units)	71	95	118	233	311	389

Average winter temperatures are from 32 to 74 degrees F, and summer temperatures are from 50 to 96. Rainfall in winter is from 1" to 2.2", and in summer is from .2" to 2.1".

APPENDIX C
WASTEWATER DISCHARGES FROM RESTAURANTS

Los Angeles Full Service Restaurant	2008 Water Usage (Hgal)	No. of Days	Water Usage (GPD)	Sewage Generation @ 90% Return to Sewer Ratio	No. of Seats	Sewage Generation (GPD/Seat)
Mesquite Tree Restaurant	7,577	424	1,787	1,608	124	13
Langer's Deli. & Restaurant	7,697	394	1,954	1,758	130	14
IHOP	8,258	426	1,938	1,745	108	16
Musashi Japanese Cuisine	16,493	426	3,872	3,485	147	24
T.G.I. Friday's	30,967	426	7,269	6,542	257	25
Denny's	22,410	426	5,261	4,735	148	32
Norms	34,236	426	8,037	7,233	200	36
AOC	9,387	423	2,219	1,997	54	37
Average Surveyed Sewage Generation per Seat (gpd/seat):						25

Los Angeles Restaurants	Avg WW Generation (GPD/Seat)	Discharge (Hgal/mo-KSF)
Bar: Cocktail, Fixed Set	15	
Coffee House: Serves Prepared Food	25	
Restaurant: Drive-In Seating Area	25	
Restaurant: Fast Food	25	
Restaurant: Take Out		93
Coffee House: No Food Preparation (a)		223
Coffee House: Pastry Baking Only		223
	1,000 SF	720

Source of Los Angeles Data: Black & Veatch Report to the City of Los Angeles, 2010
a. Starbucks Cuts Monthly Water Use to 24 Gallons Per SF, Environmental Leader.com, April 29, 2009.

APPENDIX D

AREA BASED CAPACITY FEES IN LOS ANGELES COUNTY SANITATION DISTRICT

Description	Capacity Units	Flow (GPD/Unit)	BOD (PPM)	TSS (PPM)	Capacity Fee ERUs
Allocation of ERUs Among Flow/BOD/TSS		85.2%	7.4%	7.4%	
RESIDENTIAL					
Single Family Home	Dwelling	260	250	270	1.00
Condominiums	Dwelling	195	250	270	0.75
Multi-Unit Residential	Dwelling	156	250	270	0.60
Mobile Home Parks	Space	156	250	270	0.60
COMMERCIAL					
Hotel/Motel	Room	125	230	270	0.48
Store	1,000 SF	100	230	275	0.38
Supermarket	1,000 SF	150	710	800	0.74
Office Building	1,000 SF	200	230	270	0.76
Medical, Dental, Vet Clinic	1,000 SF	300	230	270	1.15
Restaurant	1,000 SF	1,000	890	600	4.91
Indoor Theatre	1,000 SF	125	230	270	0.48
Car Wash: Tunnel - Recycling	1,000 SF	2,700	230	275	10.33
Car Wash: Wand	1,000 SF	700	230	270	2.67
Bank, Credit Union	1,000 SF	100	230	275	0.38
Auto Repair & Service	1,000 SF	100	230	275	0.38
Animal Kennels	1,000 SF	100	230	275	0.38
Gas Station	1,000 SF	100	230	275	0.38
Auto Sales	1,000 SF	100	230	275	0.38
Nursery/Greenhouse	1,000 SF	25	235	290	0.10
Light Manufacturing	1,000 SF	25	490	430	0.11
Lumber Yard	1,000 SF	25	490	430	0.11
Open Storage	1,000 SF	25	490	430	0.11
Night Club	1,000 SF	350	230	270	1.34
Bowling/Skating	1,000 SF	150	625	440	0.67
Club & lodge Halls	1,000 SF	125	230	260	0.48
Auditorium, Amusement	1,000 SF	350	230	270	1.34
Campground/Marina/RV	Space	55	330	305	0.22
Convalescent Home	Bed	125	230	270	0.48
Laundromat	1,000 SF	3,825	230	270	14.61
Mortuary, Funeral home	1,000 SF	100	710	805	0.49
Health Spa, Gym: with Showers	1,000 SF	600	230	270	2.29
Health Spa, Gym: w/o Showers	1,000 SF	300	230	270	1.15
INSTITUTIONAL					
Private School	1,000 SF	200	230	270	0.76
Library, Museum	1,000 SF	100	230	275	0.38
Post Office (Local)	1,000 SF	100	230	275	0.38
Church	1,000 SF	50	225	265	0.19

Allocation percentages for flow, BOD and TSS are based on Sedona Cost of Service Analysis
 LACSD use of CODs are revised to BOD based on a ratio of 2.25.
 LACSD values are from 2010.

APPENDIX E
WASTEWATER DISCHARGES FROM SEDONA RESTAURANTS

Sedona Estimated Average Sewage Generation	Total Equivalent Seats	Avg WW Generation (GPD/Seat)	Approx Area of Restaurant (SF)		Discharge (Hgal/mo-KSF, b)
			Indoor	Outdoor	
SEDONA CULINARY CONCEPTS	178	11	3,638	462	163
L'AUBERGE ORCHARDS: 5269, 5261	197	11	1,260	1,386	330
OAXACA: Accts 5279, 5280	136	26	1,943	660	483
COFFEE POT RESTAURANT: 10853	132	12	1,701	1,260	209
THAI PALACE UPTOWN: 5531	49	23	648	702	342
SCD Cowboy Club: 5529, 5528	138	16	3,200	700	190
CANYON Breeze (RETAIL #3): Acct 5247	152	28	4,291	1,879	257
MCDONALD'S #12329: 10706	54	13	792	648	199
FAMOUS PIZZA: 9914, 9915	27	26	405	1,296	206
FGP Barking Frog: 11524	189	16	8,200	2,000	102
Average/Total	1,253	17	26,078	10,993	209
Standard Deviation (% of Avg)		38%			50%
Equivalent Seats per Area (Seat/KSF Indoor)					25
Equivalent Seats per Area (seats per hundred square feet Indoor)					2.5

Seasonal Variations in Water Use per Seat	WW Generation (GPD/Seat)			
	Shoulder Seasons	Low	High	Biggest Variation
SEDONA CULINARY CONCEPTS: Acct 5245 & 34655 (Yogurt)	11	11	11	2%
L'AUBERGE ORCHARDS: 5269, 5261	11	8	13	30%
OAXACA: Accts 5279, 5280	29	18	31	39%
COFFEE POT RESTAURANT: 10853	12	11	13	14%
THAI PALACE UPTOWN: 5531	23	18	26	20%
SCD Cowboy Club: 5529, 5528	15	13	19	25%
CANYON Breeze (RETAIL #3): Acct 5247	30	18	38	41%
MCDONALD'S #12329: 10706	14	12	15	15%
FAMOUS PIZZA: 9914, 9915	23	17	38	68%
FGP Barking Frog: 11524	16	10	22	40%
Group Average				30%

b. The sewage discharge per area uses a 50% weighting of outdoor restaurant space