

CITY COUNCIL AGENDA

CITY COUNCIL CHAMBERS . 11465 WEST CIVIC CENTER DRIVE . AVONDALE, AZ 85323

WORK SESSION
October 8, 2012
6:00 PM

CALL TO ORDER BY MAYOR ROGERS

1 ROLL CALL BY THE CITY CLERK

2 ECONOMIC DEVELOPMENT UPDATE

City Council will receive an update regarding the City's Economic Development efforts. For information, discussion and direction.

3 ENTERPRISE RATES ANALYSIS

City Council will receive information regarding the analysis of water, wastewater and sanitation enterprise rates. For information, discussion and direction only.

4 ENHANCED CALL VERIFICATION - INITIAL 3 MONTH UPDATE

Staff is providing City Council with the initial three month report detailing the activity surrounding our enhanced Call Verification Program and our partnership with CryWolf, our third party vendor, in regards to the alarm Ordinance and Officer calls for service.

5 ADJOURNMENT

Respectfully submitted,

A handwritten signature in cursive script that reads "Carmen Martinez".

Carmen Martinez
City Clerk

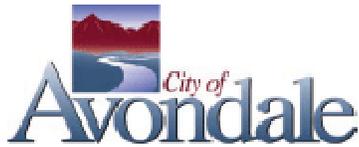
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Personas con necesidades especiales de accesibilidad, incluyendo personas con impedimentos de vista u oído, o con necesidad de impresión grande o interprete, deben comunicarse con la Secretaria de la Ciudad at 623-333-1200 o TDD 623-333-0010 cuando menos dos días hábiles antes de la junta del Concejo.

Notice is hereby given that pursuant to A.R.S. § 1-602.A.9, subject to certain specified statutory exceptions, parents have a right to consent before the State or any of its political subdivisions make a video or audio recording of a minor child. Meetings of the City Council may be audio and/or video recorded and, as a result, proceedings in which children are present may be subject to such recording. Parents, in order to exercise their rights may either file written consent with the City Clerk to such recording, or take personal action to ensure that their child or children are not present when a recording may be made. If a child is present at the time a recording is made, the City will assume that the rights afforded parents pursuant to A.R.S. § 1-602.A.9 have been waived.

De acuerdo con la ley A.R.S. § 1-602.A.9, y sujeto a ciertas excepciones legales, se da aviso que los padres tienen derecho a dar su consentimiento antes de que el Estado o cualquier otra entidad política haga grabaciones de video o audio de un menor de edad. Las juntas del Concejo de la Ciudad pueden ser grabadas y por consecuencia, existe la

posibilidad de que si hay menores de edad presentes éstos aparezcan en estos videos o grabaciones de audio. Los padres puedan ejercitar su derecho si presentan su consentimiento por escrito a la Secretaria de la Ciudad, o pueden asegurarse que los niños no estén presentes durante la grabación de la junta. Si hay algún menor de edad presente durante la grabación, la Ciudad dará por entendido que los padres han renunciado sus derechos de acuerdo a la ley contenida A.R.S. § 1-602.A.9.



CITY COUNCIL REPORT

SUBJECT:
Economic Development Update

MEETING DATE:
October 8, 2012

TO: Mayor and Council
FROM: Daniel Davis, Economic Development Director (623) 333-1411
THROUGH: Charlie McClendon, City Manager

PURPOSE:

Staff will provide the City Council with a summary of Economic Development efforts.

BACKGROUND:

City Council has established a goal to make Avondale an attractive investment opportunity for retail, commercial, office and light industrial development; and focus specifically on attracting businesses that offer quality employment opportunities for our residents.

DISCUSSION:

Staff will provide Council with an update of efforts made in the following areas:

Strategic Business Development Areas: Medical Bio/Life Sciences, Renewable Energy, Amateur Sports and Tourism, Innovation and Technology, Higher Education/Lifelong learning, and Manufacturing.

Retail, Office and Industrial/Flex Space: Trends, vacancy and absorption rates

City Center Development: Leasing activity, Infrastructure improvement, and Multi-Family Housing.

Business Attraction and Retention: EMCC Business Retention Program, Auto Mall Dealers Association and ShopAvondale!

Gangplank-Avondale: Anchor Tenant Metrics and Gangplank Jr.

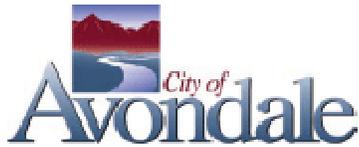
RECOMMENDATION:

For information and discussion only.

ATTACHMENTS:

[Click to download](#)

No Attachments Available



CITY COUNCIL REPORT

SUBJECT:
Enterprise Rates Analysis

MEETING DATE:
October 8, 2012

TO: Mayor and Council
FROM: Kevin Artz, Finance & Budget Director (623) 333-2011
THROUGH: Charlie McClendon, City Manager

PURPOSE:

Staff is presenting information regarding the analysis of water, wastewater and sanitation enterprise rates.

BACKGROUND:

Annually, City staff evaluates the financial status of the City's enterprises to ensure self-sufficiency of each operation. Water and sewer rates are analyzed with the assistance of a rate model developed by Red Oak Consulting for the City in 2004. Sanitation rates are analyzed utilizing a rate model developed by City staff. Both models require input of revenues, operating expenses, capital outlay projections, cash balances and billing data.

The most recent rate adjustments for water, wastewater and sanitation were approved in the 2008-2009 fiscal year. During the last three fiscal years, revenues have been sufficient to cover all required expenses, debt service and transfers for capital projects and/or equipment.

DISCUSSION:

Water and Wastewater

Since the last rate increase, new customers, water production and wastewater treatment have not increased at the levels anticipated in the 2009 update. Therefore costs have not escalated to meet an increasing demand. In fact, staffing levels are slightly below the FY 2008-09 levels primarily due to the elimination of the manual meter reading program. The water capital improvement plan has been adjusted from an \$86 million ten year plan to a \$52 million ten year plan. The wastewater ten year capital plan has also decreased from \$123 million to \$62 million in the same time frame. As costs have declined, so has the need for any rate adjustments. The water operations fund continues to be fully funded for operations, debt service and capital reserve requirements. While the wastewater fund is slightly underfunded for capital reserve requirements at this time, the debt service requirements are expected to drop significantly in the next fiscal year which should provide sufficient savings to build the reserves to more appropriate levels within a few fiscal years (two or less). The full rate analysis report is attached.

Sanitation

Sanitation services have also been provided with the same residential rates for the last three fiscal years given the lack of customer growth and the related cost increases. The sanitation fund has also benefitted from the increased recycling revenue from contracts which were negotiated with increased revenue sharing. The recent competitive contract process resulted in a contract which has the potential to increase recycling revenue to even higher levels. Staffing levels have dropped since the last rate adjustment further reducing the need to increase rate revenue. The balance in the sanitation

fund has grown sufficiently to potentially fund new equipment without imposing a new fee on new homes. The full rate analysis report is attached.

With the appropriate cost cutting and increased efficiencies, no rate increases are recommended at this time. Avondale residents and business owners will not need to budget for increases in utility rates unless some unforeseen mandate or cost increase materializes that is not included in the five year projections included in the attached studies.

RECOMMENDATION:

Staff is presenting this information for review and discussion only.

ATTACHMENTS:

Click to download

- [Water and Wastewater Rate Analysis Report](#)
- [Sanitation Rate Analysis Report](#)

CITY OF AVONDALE



Water and Wastewater Rate and Cost of Service Analysis

PREPARED BY
FINANCE & BUDGET STAFF

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SUMMARY

Water and wastewater rates for the City of Avondale have been in effect since January of 2009. City staff conducts a rate and cost of service analysis each fiscal year to ensure that rates are sufficient to cover the cost of providing water and sewage disposal services. Rates have been sufficient in both enterprises, despite the slow growth in new accounts, for the last few years primarily due to the cost reductions and efficiencies implemented by the Public Works staff. The revenue generated by the current rates continues to be sufficient to fund the ongoing operations. Moving into the future, rates may require adjustment to ensure availability of funding for reserves, refurbishment or replacement of aging system components and other system improvements. This report details all revenues, rate structures, and expenses of each enterprise.

BACKGROUND

City staff currently uses a rate model developed by Red Oak Consulting, which was purchased in 2004, for the analysis of water and wastewater rates. The model has been modified by staff to specifically meet Avondale's requirements and incorporates all funding sources and costs of the two enterprises. Rates for water have been structured to incorporate usage blocks which are intended to encourage water conservation; higher usage is billed at a higher rates. Wastewater rates have been designed to distribute costs based on flow and strength characteristics of sewage by customer class. Residential customer wastewater bills are based on the average water use during the winter months of December, January and February which is then adjusted by an assumed return factor of 80%.

Avondale currently services approximately 22,000 active water accounts. Approximately 94% or 20,590 of these accounts are single family residential. Approximately 96% or 20,511 of all sewer accounts are also residential. Staff has continued to evaluate costs and revenues keeping in the City Council's commitment to minimize impact to residents and businesses during the slowly recovering economy. The results of this study indicate that there is no immediate need to adjust rates or rate structures. This City is however in the midst of preparing an official infrastructure improvement plan which will help identify infrastructure needs, both new and existing, which may change funding requirements for both operations and maintenance and capital.

ENTERPRISE OPERATIONS

The Public Works Department currently has approximately 54 staff members assigned to water and wastewater functions, including a shared administrative function. Water operations are separated into six divisions including Water Distribution, GIS and Land Services, Water Resources, Water Quality, Wetlands Treatment and Water Production. Public Works completed the conversion of meters to a radio read technology, including approximately 200 meters in the recently acquired Rigby Water service

area, which has greatly improved efficiency and eliminates the need to add meter reading staff additions which had been included in previous rate studies.

The wastewater collection and treatment operations are separated into three service division including Collection, Lift Stations and the Water Reclamation Facility. The water reclamation facility is designed to collect and treat nine million gallons per day of sewage. Public Works continues to implement new and improve existing technology to automate plant functions to maximize efficiency. The Supervisory Control and Data Acquisition (SCADA) system was recently migrated to a single Unified Treatment software platform.

FINANCIAL EVALUATION

METHODOLOGY

Each year the enterprise financial evaluation is conducted in the following three phases:

- Revenue Sufficiency Analysis Phase – determined the annual rate revenue required over a five-year period to completely fund the water and wastewater system financial requirements, including the number and type of customers, operating expenses, debt service and the capital improvements program.
- Cost of Service Analysis Phase – determined the cost to serve water and wastewater customers and allocated those costs to rate components and customer classes based on a review of line-item operating, debt service and capital costs.
- Rate Design/Review Phase – reviewed the rate design to ensure the City has a system of rates and charges that are fair and equitable while sufficient to recover the annual rate revenue requirement determined in the revenue sufficiency analysis phase of the study.

REVENUE SUFFICIENCY ANALYSIS

Revenue requirements include operation and maintenance expense, indirect costs, departmental administrative costs, insurance, debt service and projected impact from the capital program. Another driving factor is the need to fund the replacement of system components. As indicated in the City of Avondale's Municipal Code §24-117, the user charge rates for sewer should be revised as needed to pay for the total operations, maintenance and replacement costs for the system. Due to the aging system in some areas of the City, additional replacement funding and/or reserves will be required to ensure the timely replacement of system components.

BASELINE EXPENSE PROJECTIONS

The model was updated to include all new expenses and other revenue needs for a five year study period. Baseline expense projections for the forecast period assumed the following:

- Most operating expenses and transfers out increase by an average of 2% per year with the exception of the following.
- Annual debt service expenses and debt service coverage requirements were taken from the current outstanding debt information and only projected to increase in years in which additional debt is projected. In the 2013-14 fiscal year, debt service on wastewater system bonds is significantly reduced which greatly reduces the need for any rate adjustments.

Table 1 – Water and Wastewater Expenses

	FY 11-12 Actuals	FY 12-13 Estimate	FY 13-14 Estimate	FY 14-15 Estimate	FY 15-16 Estimate	FY 16-17 Estimate
Water Operations						
GIS and Land Services	497,649	590,670	594,793	599,021	603,359	607,809
Water Administration	2,586,313	4,472,680	3,050,264	1,480,512	2,039,349	1,607,868
Water Distribution	2,161,399	2,430,360	2,945,141	2,964,412	2,984,190	3,004,493
Water Production	3,237,971	3,061,850	4,281,343	4,674,411	4,762,520	4,963,076
Water Quality	543,398	581,140	586,267	591,531	596,936	602,487
Water Resources	1,460,261	1,829,460	1,831,505	1,833,605	1,835,762	1,837,978
Wetlands Treatment	254,918	336,370	339,780	343,281	346,874	350,563
Total Water Expenses	10,741,909	13,302,530	13,629,093	12,486,773	13,168,990	12,974,274
Wastewater Operations						
Wastewater Administration	6,296,073	3,632,650	2,469,961	2,473,306	2,116,533	2,120,875
Wastewater Collection	1,288,255	1,557,720	1,223,970	1,410,218	1,422,955	1,436,118
Wastewater Lift Stations	199,663	138,720	138,720	139,820	141,070	142,342
Water Reclamation Facility	2,679,522	3,210,500	3,519,100	3,676,829	3,873,876	3,563,664
Total Wastewater Expenses	10,463,513	8,539,590	7,351,751	7,700,173	7,554,434	7,262,999

Actual expenses in FY 11-12 include transfers to the Wastewater capital fund of \$3.5 million for the Phoenix International Raceway (PIR) sewer connection project which accounts for the higher than usual expenses in Wastewater Administration. The FY 12-13 expense estimates also include a \$1.95 million transfer to the Water capital fund for rehabilitation projects and the Water Resources division includes the addition of \$400,000 for Central Arizona Project (CAP) excess water purchases.

BASELINE REVENUE PROJECTIONS

Baseline revenue projections were assumed to exclude additional revenue from rate increases. The following assumptions were used to project annual changes in baseline revenue during the period:

- Baseline water and wastewater rate revenue, that is, rate revenue increases that are exclusive of programmed rate increases, is projected to increase at 1% to 3% annually to reflect projected annual growth in the water and wastewater customer base. New home development continues to be modest and any increase in monthly bills for the last two fiscal years can be attributed to new residents purchasing or renting previously vacant homes.

- Miscellaneous revenue (turn on/off charges, late fees, etc.) is projected to remain constant during the forecast period.
- Development related revenue such as new meter installation and new sewer taps are projected to also remain fairly constant since growth is not expected to jump during the five year study period.
- Interest income was calculated by the model based on projected fund balances during the period and assumed interest earnings rate of approximately 1% per year.

OTHER REVENUE REQUIREMENTS

In addition to operating expenses, debt service and CIP related costs, the City must also maintain sufficient revenue to ensure that the annual debt service coverage ratio is met. Currently that ratio is 1.2 times the annual net income. The capital improvement projects included in this analysis include the Council approved capital plan for FY 2012-13, a summary for water and wastewater is included in Appendix A and Appendix B respectively.

The City has set a management objective to maintain a working capital reserve in an amount equal to at least four months of operations and maintenance (O&M) while also trying to fund a replacement reserve of 5% of system assets. All of these requirements were programmed into the financial model. The calculation of the minimum enterprise fund balances are shown in Table 2 and Table 3.

Table 2 – Water System Fund Balance Requirements

Water System Data		Amount
a)	Fixed Asset Acquisition Cost	306,516,695
b)	O&M Annual (Year 1)	9,497,860
c)	Working Capital Reserve (4 months O&M)	3,165,953
d)	Replacement Reserve Requirement (5% Asset Cost)	15,325,835
e)	Minimum Balance Requirements	18,491,788
f)	Current Asset Balance	22,068,440
g)	Available Current Assets =f-e	3,576,652

Table 3 – Wastewater System Fund Balance Requirements

Wastewater System Data		Amount
a)	Fixed Asset Acquisition Cost	307,641,392
b)	O&M Annual (Year 1)	4,673,188
c)	Working Capital Reserve (4 months O&M)	1,557,729
d)	Replacement Reserve Requirement (5% Asset Cost)	15,382,070
e)	Minimum Balance Requirements	16,939,799
f)	Current Asset Balance	13,063,353
g)	Available Current Assets = f) - e)	(3,876,446)

As shown in the tables, the water operating fund currently meets the minimum balance requirements, while the wastewater fund is slightly under-funded. With cost containing measures and savings, it is

anticipated that the minimum balance requirements will be met within the next two fiscal years therefore an increase to fund the reserve is not recommended at this time. However, as the system ages the requirement for replacement reserves increases so revenue adjustments may be required to fully fund the replacement of system components as they reach the end of their useful life.

FINANCIAL PROJECTIONS ASSOCIATED WITH THE REVENUE SUFFICIENCY ANALYSIS PHASE

The results of the revenue sufficiency analysis are presented in Table 4 as the pro-forma and cash flow analysis. Each fund is presented separately and then both funds are summarized for debt service coverage calculations.

Table 4 – Pro-Forma and Cash Flow Analysis – By Fund

Water Operating Fund	FY 13	FY 14	FY 15	FY 16	FY 17
Beginning Balances	22,068,440	19,823,879	19,731,625	19,960,831	19,707,030
Water Rate Revenue	11,122,500	11,233,725	11,458,400	11,687,567	11,921,319
Plus: Growth	1%	2%	2%	2%	3%
Rate Revenue After Growth	11,233,725	11,458,400	11,687,567	11,921,319	12,278,958
Pct Change in Water Rates	0.00%	0.00%	0.00%	0.00%	0.00%
Other Revenue	242,149	242,149	242,149	242,149	242,149
Interest Income	198,064	173,336	153,653	150,577	147,654
Total Revenue	11,673,938	11,873,884	12,083,370	12,314,045	12,668,761
O&M	(9,497,860)	(10,709,553)	(11,436,092)	(11,599,926)	(11,878,532)
Debt Service	(145,210)	(116,584)	(38,072)	(37,921)	(190,553)
Capital Outlay	(380,000)	(640,000)	(380,000)	(380,000)	(380,000)
Cash Funded Capital	(3,895,430)	(500,000)	-	(550,000)	(109,228)
Net Cash Flow	(2,244,562)	(92,253)	229,205	(253,801)	110,448
Ending Water Balances	19,823,879	19,731,625	19,960,831	19,707,030	19,817,478
Sewer Operating Fund	FY 13	FY 14	FY 15	FY 16	FY 17
Beginning Balances	12,289,591	10,959,595	12,324,857	12,727,806	14,527,273
Sewer Rate Revenue	7,275,100	7,347,851	7,494,808	7,644,704	7,797,598
Plus: Growth	1%	2%	2%	2%	3%
Rate Revenue After Growth	7,347,851	7,494,808	7,644,704	7,797,598	8,031,526
Pct Change in Sewer Rates	0.00%	0.00%	0.00%	0.00%	0.00%
Other Revenue	5,010	5,010	5,010	5,010	5,010
Interest Income	131,721	131,897	126,665	136,576	155,093
Total Revenue	7,484,582	7,631,716	7,776,379	7,939,184	8,191,629
O&M	(4,673,188)	(4,732,799)	(4,967,546)	(5,035,944)	(5,106,272)
Debt Service	(2,171,890)	(653,415)	(650,029)	(286,412)	(283,793)
Capital Outlay	(339,500)	(380,240)	(505,855)	(667,360)	(336,105)
Cash Funded Capital	(1,630,000)	(500,000)	(1,250,000)	(150,000)	(150,000)
Net Cash Flow	(1,329,996)	1,365,262	402,949	1,799,467	2,315,459
Ending Sewer Balances	10,959,595	12,324,857	12,727,806	14,527,273	16,842,733

Combined Water/Sewer Fund Debt Service Coverage Calculation

Rate Revenue	18,581,576	18,953,208	19,332,272	19,718,917	20,310,485
Other Revenue	247,159	247,159	247,159	247,159	247,159
Interest Income	329,785	305,233	280,318	287,153	302,746
Total Revenue	19,158,520	19,505,600	19,859,749	20,253,229	20,860,390
O&M	(14,171,048)	(15,442,351)	(16,403,638)	(16,635,870)	(16,984,804)
Net Income	4,987,472	4,063,248	3,456,111	3,617,359	3,875,586
Debt Service - Existing	2,317,100	769,999	688,101	324,333	474,345
Debt Service Coverage	2.15	5.28	5.02	11.15	8.17

Cash flow and debt service coverage ratios are sufficient to avoid any rate increases during the study period. The beginning and ending balances include all working capital and replacement reserves. The model calculates cash funded capital based on balances, growth projects and debt calculations which causes differences between the estimated costs presented in Tables 1 and Table 4. The current City project to review and calculate new development fees which are used to fund growth related project may or may not impact the financial status of both the water and wastewater funds, resulting in changes to future cash flows.

COST OF SERVICE ANALYSIS

Once all costs are estimated, they are assigned to cost components in order to facilitate a rate design that results in a fair and equitable distribution of the costs based on customer class and characteristics. As discussed in the Background section, the largest source of revenue for both enterprises is residential customers although all costs are distributed proportionately based on the cost allocation and rate design.

ALLOCATION OF COSTS TO WATER COST COMPONENTS

Water costs allocation is straight forward and customer related costs, such as billing, customer service costs and meter reading for water customers are allocated directly to the water customer charge rate component, also referred to as the per bill administrative fee. Meter related costs, such as meter repair and replacement costs associated with maintaining the utility's readiness to serve customers were allocated to the meter, or readiness to serve, charge. Other costs, such as transmission costs and treatment costs that are associated with flow-related activity, were allocated to the flow charge. Table 5 shows the allocation by water divisions to each cost component. The overall cost allocation is the resulting percentages once the initial percentages are applied to the division costs. The full detail of the allocation is included in Appendix D.

Table 5 – Allocation of Water Costs to Cost Components

	Customer Charge	Meter Base Charge	Volume Charge			
	Billing, Collection, Meter Reading, Admin	Meter Repair and Maintenance	Source of Supply	Pumping & Storage	Transmission/Distribution	Treatment
Water Distribution	0%	75%			25%	
Water Administration	30%	20%	15%	15%	10%	10%
GIS and Land Services	10%	40%	10%	10%	20%	10%
Water Quality						100%
Water Resources			100%			
Wetlands Treatment						100%
Water Production				40%	40%	20%
Overall Cost Allocation	5.1%	23.5%	71.4%			

ALLOCATION OF COSTS TO WASTEWATER COST COMPONENTS

Wastewater costs can also be easily allocated and customer related costs, such as billing and customer service costs, for wastewater customers were allocated directly to the wastewater customer charge rate component. Costs related to the collection system are allocated to a volume charge and treatment costs are allocated to a strength charge both of which are then combined into a single flow charge. The overall allocation results in summary percentages once the allocation is applied to the division costs. The detailed allocation is included in Appendix D.

Table 6 – Allocation of Wastewater Costs to Cost Components

	Customer Charge	Volume Charge	
	Billing, Collections, Admin	Collection	Treatment
Wastewater Collection		100%	
Wastewater Administration	90%		10%
Wastewater Lift Stations	0%	100%	0%
Water Reclamation Facility		20%	80%
Overall Cost Allocation	7.6%	92.4%	

RATE DESIGN

The design of water and wastewater rates for the City of Avondale has been consistent for the last nine years and there have only been incremental adjustments from FY 2004-05 through FY 2008-09 based on the rate plan which was designed in FY 2004-05. In FY 2005-06, however, wastewater rates were

redesigned to eliminate the extra strength charge for commercial users and rates were developed to allocate treatment and flow costs proportionately between all customer classes.

Assumptions used in the review of the current rate structures include:

- Continuation of conservation rate structure for water customers
- Use of winter average water usage as the basis for sewer billings for residential customers
- Use of sewer return factor of 80% for all users except for multi-family for which a 100% return factor was used; and laundries and car washes, for which a 70% return factor was used in recognition that these types of users return less water to the wastewater system by the nature of their business.
- Allocation of costs of wastewater treatment based on estimated contribution to the wastewater system by user class.

ALLOCATION OF COSTS TO WATER CUSTOMERS

The rate revenue requirement for each rate component was apportioned by customer class in the following manner:

- Customer charge – The number of customers, by customer class, was compiled from the most recent fiscal year’s utility billing data to determine the number of customers and number of bills issued per year. The total costs were allocated on a per bill basis to develop the monthly charge. A bill tabulation is included in Appendix D.
- Readiness to serve charge – In order to properly apportion the rate revenue requirement for the readiness to serve charge among customer classes, equivalent units for each customer class were calculated in the following manner:
 - Equivalent Residential Units (ERUs) - The number of equivalent units for all customers, except multi-unit customers, was determined by calculating the equivalent residential units by meter size by class. Equivalent residential units for each class were calculated by multiplying the number of meters times the meter equivalency factor for each meter size. The meter equivalency factors used are established by the American Water Works Association (AWWA). The number of equivalent units was calculated by multiplying the number of units for multi-unit customers by the ratio of average monthly demand for multi-unit customers (4,700 gallons per month) as compared to single family residential customers (10,000 gallons per month), or 47%.

The rate revenue requirement for the readiness to serve charge was then apportioned based on the pro-rata portion of equivalent residential units for each class based on meter size.

- Flow rate – The water conservation component of the water rate design includes the development of four (4) blocks of water usage. The volume of water flow, by customer class, was compiled in

order to determine the distribution of flow by class and rate block. The rate revenue requirement for the flow rate was then apportioned based on the pro-rata portion of customers for each class. One of the main objectives in the development of the current rate structure was to incorporate a conservation rate structure which alters the apportionment of the rate revenue requirement among customer classes based on their usage patterns.

The calculation of a user's monthly water bill is represented by the following formula:

$$\text{Water Charge} = \text{CC} + (\text{R} \times \text{M} \times \text{U}) + [(\text{B1} \times \text{V1}) + (\text{B2} \times \text{V2}) + (\text{B3} \times \text{V3}) + (\text{B4} \times \text{V4})]$$

Where:

B1= Rate per 1,000 gallons in block one

B2= Rate per 1,000 gallons in block two

B3= Rate per 1,000 gallons in block three

B4= Rate per 1,000 gallons in block four

CC = Customer charge per bill

M=Meter equivalency factor

R=Readiness to serve charge for 0.75" Meter per unit

U=Number of units

V1= Water usage in thousands of gallons in block one

V2= Water usage in thousands of gallons in block two

V3= Water usage in thousands of gallons in block three

V4= Water usage in thousands of gallons in block four

The blocks for water usage are determined using the ¾" meter as the base. Except for hydrant meters and residential customers with a ¾" or 1" meter, all blocks are adjusted by the meter equivalency factor. Hydrant meters have relatively high capacity when compared to the standard meter and are therefore calculated separately.

ALLOCATION OF COSTS TO WASTEWATER CUSTOMERS

The rate revenue requirement for each rate component for wastewater was apportioned by customer class in the following manner:

- Customer charge – The number of customers, by customer class, was compiled from the most recent fiscal year's utility billing data to determine the number of customers and number of bills issued per year. The total costs are allocated on a per bill basis to develop the monthly charge.
- Flow rate – The volume of wastewater flow, adjusted to reflect the assumed return factors by customer was compiled in order to determine the distribution of flow by class. The volume charge was developed using volume data from the last fiscal year's billing data. The costs of the collection system were reduced to a cost per 1,000 gallons based on total billed volumes. The second component is the allocation of treatment costs. Strength of wastewater is measured based on

wastewater loadings of Biochemical Oxygen Demand (BOD) and Suspended Solids (SS). The costs of treatment were apportioned between the two categories based on the estimated pounds of BOD and SS removed from wastewater by user class. Except for the residential class, these estimated pounds were calculated based on typical (Industry Standards) user strength characteristics developed by the California State Water Resources Control Board (CSWRCB) in 1998 (shown in Table 7). The calculated cost by user class is included in Appendix F.

Table 7 – Typical Strength Characteristics CSWRCB – 1998

Standard Classifications	BOD (mg/l)	SS (mg/l)
Residential *	250	225
Auto Steam Cleaning	1,150	1,250
Bakery, wholesale	1,000	600
Bars without dining facilities	200	200
Car Wash	20	150
Department and Retail Store	150	150
Hospital and Convalescent	250	100
Hotel with dining facilities	500	600
Hotel/Motel without dining	310	120
Industrial Laundry	670	680
Laundromat	150	110
Laundry, commercial	450	240
Market with garbage grinders	800	800
Mortuary	800	800
Professional Office	130	80
Repair Shop and Service Station	180	280
Restaurant	1,000	600
School and College	130	100
Septage	5,400	12,000
Soft Water Service	3	55

*The residential strength characteristics are based on the local residential contributions estimated by the Public Works Department staff in 2007.

The calculation of a user's monthly wastewater bill is represented by the following formula:

$$\text{Wastewater Charge} = CC + Vs[(Bc \times 0.00834 \times Bm) + (Sc \times 0.00834 \times Sm)]$$

Where:

Bc= Cost of treatment per unit of Biochemical Oxygen Demand (BOD)

Bm= Concentration of BOD in milligrams per liter

CC = Customer charge per bill

Sc= Cost of treatment per unit of Suspended Solids (SS)

Sm= Concentration of SS in milligrams per liter

Vs= Volume of wastewater in thousands of gallons

Volumes of wastewater are determined based on 80% of the average winter quarter (December, January and February) water usage for single family residential customers. Multi-family customer wastewater volumes are based on 100% of billed water volume. Laundries and Car Washes wastewater volumes are based on 70% of billed water usage each month. All other customer class wastewater volumes are based on 80% of billed water usage.

WASTEWATER COST ALLOCATION CHALLENGES

Each year, while reviewing the wastewater allocation of costs, there has been a growing discrepancy between the billing of rates based on the typical user strength and the loadings (BOD & SS) at the City's water reclamation facility (WRF). Finance and Budget staff has not been able to complete a mass balance of billed volume which reconciles the City's billing records and the treated volume records maintained by Public Works staff. Table 8 shows the comparison of billed volumes and the treatment plant data. All BOD and SS data is shown in milligrams per liter (mg/l), while the volume is shown in million gallons per day (mgd). The detailed calculations of BOD and SS removal estimates based on billing records are included in Appendix E.

The data indicates that potentially the typical strength characteristics from California in 1998 are no longer the standard or that the standards do not apply to the Avondale customer base. This could mean that certain customer classes are not paying their proportionate share of the treatment costs.

The volume discrepancies may suggest that return factors are set too high since less water than what is being produced is being returned through the wastewater system. From a rate setting perspective a lower return factor could however result in a higher cost per unit to achieve sufficient revenue levels. Due to the higher return factor, the calculated volume over which to allocate costs is overstated resulting in lower calculated rate requirements.

Table 8 – Strength and Flow Data Comparison

	Billed	WRF Data	Variance
Biochemical Oxygen Demand (BOD) mg/l	248.78	352	103
Suspended Solids (SS)mg/l	220.07	429	220
Volume mgd	6.45	5.31	1.14

RECOMMENDATION

The financial evaluation of these enterprises shows that revenue requirements are substantially covered by the current rates charged per customer per month. Based on the available fund balance and reserve requirements, it is proposed that the rates remain unchanged for the near future.

However, staff does recommend that a sampling and testing of wastewater characteristics for residential customers be conducted in order to ensure the City continues to allocate the costs of wastewater treatment fairly and equitably between customer classes based on their respective contribution to the wastewater system. Consideration should also be given to potentially decreasing wastewater return factors for all customers or implementing a return factor for commercial customers.

RATE COMPARISONS

The City's average residential water and wastewater bills are compared to other Arizona municipalities' for the same service units. The average bill for an Avondale resident is 9,000 gallons per month. The winter average water used in the comparison is 10,000 gallons which when adjusted by the 80% return factor, the billed wastewater is 8,000 gallons. As Table 9 indicates, Avondale water rates are among the lowest while wastewater rates are higher than five of the major valley cities although still below the average.

Table 9 – Water and Wastewater Bill Comparison

Water - 9,000 gallons/month		Sewer - 8,000 gallons/month	
Avondale	22.18	Buckeye	23.85
Goodyear	24.39	Phoenix*	24.50
Tempe	30.36	Surprise	24.78
Peoria	32.49	Peoria	24.86
Glendale	33.18	Avondale	25.27
Phoenix*	33.54	Mesa	26.59
Average	33.69	Tempe	27.08
Surprise	33.79	Scottsdale	30.35
Scottsdale	34.60	Average	30.66
Buckeye	36.74	Glendale	37.68
Mesa	44.13	Goodyear	55.80

*The City of Phoenix volumes are converted to 1,000 gallons from cubic feet.

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City of Avondale, Arizona
Revenue Sufficiency Analysis
5 Year Capital Improvements Program

WATER AND WASTEWATER RATE & COST OF SERVICE ANALYSIS

CITY OF AVONDALE

Raw Project Amounts													Total												
Project Type	Oper Fund	Water	Development	sona Funds	Restricted for	Excise Tax	Bo	% Related	to	Expansion	of System	Capacity		Project Description	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	Total
DIST	Y	N	Y	Y	0%	WA1057-Citywide Water Improvements								600,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	3,300,000	
GEN	Y	N	Y	Y	0%	WA1061-Water System Security Implementation								-	-	-	-	-	-	-	-	-	-	-	-
DIST	Y	Y	Y	Y	100%	WA1078-Water Oversize Buy-Ins/ Dev. Reimbursement								-	-	-	-	-	-	-	-	-	-	-	-
SOS	Y	Y	Y	Y	100%	WA1081-Central Arizona Project water purchase								-	-	-	-	-	-	-	-	-	-	-	-
SOS	Y	Y	Y	Y	100%	WA1090-AG Well South of I-10/East of Agua Fria								200,000	-	800,000	1,500,000	-	-	-	-	-	-	-	2,500,000
TRT	Y	Y	Y	Y	50%	WA1068-Well Head Treatment								1,500,000	-	-	-	-	-	-	-	-	-	-	1,500,000
SOS	Y	Y	Y	Y	100%	WA1131-Pylman Well at Lower Buckeye								-	-	-	-	-	-	500,000	2,000,000	-	-	-	2,500,000
DIST	Y	N	Y	Y	50%	WA1132-Thomas Road - 103rd to 99th Water Line Improvement								800,000	-	-	-	-	-	-	-	-	-	-	800,000
DIST	Y	N	Y	Y	50%	WA1133-99th Avenue Water Line - Thomas to McDowell								800,000	-	-	-	-	-	-	-	-	-	-	800,000
DIST	Y	Y	Y	Y	100%	WA1135-McDowell Rd-El Mirage to Avondale Blvd Water Line								500,000	-	-	-	-	-	-	-	-	-	-	500,000
TRAN	Y	Y	Y	Y	100%	WA1139-Water Line on Avondale Blvd - Lower Buckeye to Gila River								2,600,000	-	-	-	-	-	-	-	-	-	-	2,600,000
TRAN	Y	N	Y	Y	100%	WA1140-Indian Springs Rd. Gila River to El Mirage Rd								500,000	-	-	-	-	-	-	-	-	-	-	500,000
SOS	Y	Y	Y	Y	100%	WA1141-SRP Paired Well at 119th and Whyman								-	-	-	-	-	-	-	-	-	-	-	-
SOS	Y	Y	Y	Y	100%	WA1142-Lakin Well at 112th and Buckeye								-	-	-	-	-	500,000	2,000,000	-	-	-	-	2,500,000
DIST	Y	Y	Y	Y	100%	WA1153-127th Ave - Lower Buckeye to Dysart								900,000	-	-	-	-	-	-	-	-	-	-	900,000
DIST	Y	N	Y	Y	0%	WA1162-CDBG Waterline Improvements								-	250,000	-	250,000	-	-	250,000	-	250,000	-	250,000	1,250,000
TRAN	Y	N	Y	Y	0%	WA1169-Rio Vista Waterline Replacement								-	-	-	400,000	1,000,000	-	-	-	-	-	-	1,400,000
SOS	Y	Y	Y	Y	100%	WA1201-Well #22 - SWC Avondale / Van Buren								500,000	1,000,000	-	-	-	-	-	-	-	-	-	1,500,000
SOS	Y	Y	Y	Y	100%	WA1212-Purchase of Rigby Water Company								-	-	-	-	-	-	-	-	-	-	-	-
SOS	Y	Y	Y	Y	100%	WA1216-Well 25 at Van Buren & El Mirage								-	-	-	-	-	-	-	-	-	-	-	-
SOS	Y	Y	Y	Y	100%	WA1214-Well #27 Corporate/El Mirage								-	-	-	-	-	500,000	2,000,000	-	-	-	-	2,500,000
SOS	Y	Y	Y	Y	100%	WA1216-Well 25 at Van Buren & El Mirage								-	-	-	-	-	-	-	-	-	-	-	-
TRAN	Y	Y	Y	Y	100%	WA1231-Dysart Road - Harrison to Lower Buckeye Rd waterline project								-	-	-	-	500,000	-	-	-	-	-	-	500,000
DIST	Y	N	Y	Y	0%	WA1282 Central Avenue Waterline Replacement								-	600,000	-	-	-	-	-	-	-	-	-	600,000
PMP	Y	N	Y	Y	0%	WA1283 -Northside Booster Replacement								750,000	-	-	-	-	-	-	-	-	-	-	750,000
SOS	Y	N	Y	Y	0%	WA1284 -Well Rehab / Bore Modifications								-	-	2,000,000	-	1,000,000	-	1,000,000	-	1,000,000	1,000,000	-	6,000,000
SOS	Y	N	Y	Y	50%	WA1285 -White Mountain Water Lease								-	-	2,000,000	-	-	-	-	-	-	-	-	2,000,000
SOS	Y	N	Y	Y	0%	WA1298 -Well 7 Site Improvement								-	-	500,000	250,000	-	-	-	-	-	-	-	750,000
PMP	Y	Y	N	Y	100%	WA1299 -Del Rio Lower Pressure Zone								-	-	-	-	-	-	-	-	-	-	-	-
PMP	Y	N	N	Y	100%	WA1300 -Coldwater Booster Zone								-	-	-	-	-	-	-	-	-	-	-	-
DIST	Y	N	N	Y	100%	WA1301 -Pressure Reducing Stations								-	-	-	-	-	-	-	-	-	-	-	-
DIST	Y	Y	Y	Y	100%	WA1302 -Southern Avenue / Dysart Waterline								-	-	1,000,000	-	-	-	-	-	-	-	-	1,000,000
SOS	Y	N	Y	Y	100%	WA1314-Well #8 Rehabilitation - Gateway Booster Station								1,000,000	-	-	-	-	-	500,000	2,000,000	-	-	-	1,000,000
SOS	Y	Y	Y	N	100%	WA1315-Well Relocation - McDowell / 107th								-	-	-	-	-	-	-	-	-	-	-	2,500,000
TRAN	Y	Y	Y	N	100%	WA1316-Indian School Rd. Waterline - Santa Fe to Dysart								-	-	1,700,000	-	-	-	-	-	-	-	-	1,700,000
TRAN	Y	Y	Y	N	100%	WA1317-Encanto Blvd. Waterline - 101st to 99th Ave								-	-	230,000	-	-	-	-	-	-	-	-	230,000
DIST	Y	Y	N	N	100%	WA1318-Central Avondale Waterlines - City Center Area								-	-	-	-	-	2,700,000	-	-	-	-	-	2,700,000
DIST	Y	Y	Y	N	100%	WA1319-125th Ave Waterline - Durango to Calle Hermosa								-	-	250,000	-	-	-	-	-	-	-	-	250,000
DIST	Y	N	Y	N	0%	WA1320-El Mirage Rd. Waterline - Lower Buckeye to Southern								-	-	-	-	-	500,000	1,000,000	2,000,000	-	-	-	3,500,000
DIST	Y	Y	N	N	100%	WA1321-El Mirage Rd. Waterline - Southern to Indian Springs								-	-	-	-	-	-	500,000	1,000,000	-	-	-	1,500,000
DIST	Y	Y	N	N	100%	WA1322-Southern Ave Waterline - Dysart to El Mirage								-	-	-	-	-	1,200,000	-	-	-	-	-	1,200,000
DIST	Y	Y	N	N	100%	WA1323-Southern Avondale Waterline - Lower Buckeye to Southern								-	-	-	-	-	-	-	-	-	1,000,000	-	1,000,000
Total														\$ 10,650,000	\$ 2,150,000	\$ 8,780,000	\$ 2,700,000	\$ 2,800,000	\$ 6,450,000	9,300,000	5,550,000	2,300,000	1,550,000	\$ 52,230,000	

SEPTEMBER 2012
Appendix A-Water CIP

City of Avondale, Arizona
Cost of Service Analysis
Allocation of Annual Costs to Cost Components

Allocation to Water/Sewer and Cost Components

Table with columns for Description, 2013-2017, 5 Yr Average, and Water/Sewer cost components (Customer Charge, Base Charge, Volume Charge, etc.).

WATER AND WASTEWATER RATE & COST OF SERVICE ANALYSIS

CITY OF AVONDALE

Appendix C-Allocation of Costs to Cost Components

SEPTEMBER 2012

City of Avondale, Arizona
Cost of Service Analysis
Allocation of Annual Costs to Cost Components

Allocation to Water/Sewer and Cost Components

Table with columns for Description, 2013-2017, 5 Yr Average, Water (Customer Charge, Base Charge, Volume Charge), Sewer (Customer Charge, Base Charge), and Total. Rows include various services like Salaries and Wages, Health Insurance, and Equipment Management Charges.

WATER AND WASTEWATER RATE & COST OF SERVICE ANALYSIS

CITY OF AVONDALE

Appendix C-Allocation of Costs to Cost Components

SEPTEMBER 2012

City of Avondale, Arizona
Cost of Service Analysis
Allocation of Annual Costs to Cost Components

Allocation to Water/Sewer and Cost Components

Table with columns for Description, 2013-2017, 5 Yr Average, Water (Customer, Base, Volume), Sewer (Customer, Base), and Total. Rows include various utility services like R&M Communication Equipment, Electricity, Telephone Service, etc.

WATER AND WASTEWATER RATE & COST OF SERVICE ANALYSIS

CITY OF AVONDALE

Appendix C-Allocation of Costs to Cost Components

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SEPTEMBER 2012

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City of Avondale, Arizona
 Cost of Service Analysis
 Allocation of Annual Costs to Cost Components

Allocation to Water/Sewer and Cost Components

Description	Description	Water										Sewer															
		Customer Charge		Base Charge		Volume Charge						Customer Charge		Base Charge		Collection											
		Billing, Meter Reading	Meter Repair and Maintenance	Wells	Pumping & Storage	Transmission/Distribution	Treatment	Total Water	Billing, Meter Reading	Meter Repair and Maintenance	Collection	Treatment	Total Sewer														
2013	2014	2015	2016	2017	5 Yr Average	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%	\$	%					
Transfer Ops Costs																											
Water Reclamation Facility	Cellular Phone Stipend	1,200	1,212	1,224	1,236	1,248	1,224	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	245	80%	979	100%	1,224
Water Reclamation Facility	Overtime Pay	10,000	10,100	10,201	10,303	10,406	10,202	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	2,040	80%	8,162	100%	10,202
Water Reclamation Facility	O.A.S.D.I.	43,950	45,708	47,536	49,438	51,415	47,609	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	9,522	80%	38,088	100%	47,609
Water Reclamation Facility	Az State Retirement	78,730	81,879	85,154	88,561	92,103	85,285	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	17,057	80%	68,228	100%	85,285
Water Reclamation Facility	Short-Term Disability	2,380	2,475	2,574	2,677	2,784	2,578	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	516	80%	2,063	100%	2,578
Water Reclamation Facility	Health Insurance	91,400	95,056	98,858	102,813	106,825	99,010	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	19,802	80%	79,208	100%	99,010
Water Reclamation Facility	Life Insurance	3,530	3,671	3,818	3,971	4,130	3,824	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	765	80%	3,059	100%	3,824
Water Reclamation Facility	Dental Insurance	7,760	8,070	8,393	8,729	9,078	8,406	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	1,681	80%	6,725	100%	8,406
Water Reclamation Facility	Workers' Compensation	14,760	15,350	15,964	16,603	17,267	15,369	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	3,198	80%	12,171	100%	15,369
Water Reclamation Facility	Medicare	10,290	10,702	11,130	11,575	12,038	11,147	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	2,229	80%	8,917	100%	11,147
Water Reclamation Facility	Laboratory Fees	70,000	70,000	70,000	70,000	70,000	70,000	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	14,000	80%	56,000	100%	70,000
Water Reclamation Facility	Other Professional Services	317,370	317,370	317,370	317,370	317,370	317,370	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	63,474	80%	253,896	100%	317,370
Water Reclamation Facility	Other Fees	12,000	12,000	12,000	12,000	12,000	12,000	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	2,400	80%	9,600	100%	12,000
Water Reclamation Facility	Postage	500	500	500	500	500	500	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	100	80%	400	100%	500
Water Reclamation Facility	Uniform Rental	4,000	4,000	4,000	4,000	4,000	4,000	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	800	80%	3,200	100%	4,000
Water Reclamation Facility	R&M Communication Equipment	42,190	42,190	42,190	42,190	42,190	42,190	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	8,438	80%	33,752	100%	42,190
Water Reclamation Facility	Electricity	500,000	500,000	510,000	520,200	530,604	512,161	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	102,432	80%	409,729	100%	512,161
Water Reclamation Facility	Gas	13,000	13,000	13,260	13,525	13,796	13,316	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	2,663	80%	10,653	100%	13,316
Water Reclamation Facility	Water	13,000	13,000	13,260	13,525	13,796	13,316	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	2,663	80%	10,653	100%	13,316
Water Reclamation Facility	Telephone Service	9,320	9,320	9,320	9,320	9,320	9,320	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	1,864	80%	7,456	100%	9,320
Water Reclamation Facility	Contractual Maint./Radio&Comm.	2,000	2,000	2,020	2,040	2,061	2,024	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	405	80%	1,619	100%	2,024
Water Reclamation Facility	Contractual Maint./Building & Grounds	10,000	10,000	10,100	10,201	10,303	10,121	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	2,024	80%	8,097	100%	10,121
Water Reclamation Facility	R&M Machinery and Equipment	12,500	12,500	12,500	12,525	12,551	12,575	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	2,515	80%	10,060	100%	12,575
Water Reclamation Facility	R&M Buildings	4,000	4,000	4,000	4,040	4,080	4,024	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	805	80%	3,219	100%	4,024
Water Reclamation Facility	R&M Other	145,000	145,000	145,000	146,450	147,915	145,873	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	29,175	80%	116,698	100%	145,873
Water Reclamation Facility	General Office Supplies	1,500	1,500	1,515	1,530	1,545	1,518	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	304	80%	1,214	100%	1,518
Water Reclamation Facility	Janitorial Supplies	1,000	1,000	1,010	1,020	1,030	1,012	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	202	80%	810	100%	1,012
Water Reclamation Facility	Computers and Software Licensing	1,500	1,500	1,515	1,530	1,545	1,518	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	304	80%	1,214	100%	1,518
Water Reclamation Facility	Other Equipment	4,000	4,000	4,040	4,080	4,121	4,048	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	810	80%	3,238	100%	4,048
Water Reclamation Facility	Uniform Purchase	900	900	909	918	927	911	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	182	80%	729	100%	911
Water Reclamation Facility	Safety Apparel/Equipment	3,000	3,000	3,030	3,060	3,091	3,036	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	607	80%	2,429	100%	3,036
Water Reclamation Facility	Other Supplies	40,000	40,000	40,400	40,804	41,212	40,483	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	8,097	80%	32,387	100%	40,483
Water Reclamation Facility	Testing Materials/Lab Supplies	40,000	40,000	40,000	40,000	40,000	40,000	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	8,000	80%	32,000	100%	40,000
Water Reclamation Facility	Chemicals	530,000	530,000	530,000	530,000	530,000	530,000	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	106,000	80%	424,000	100%	530,000
Water Reclamation Facility	Equipment Management Charges	17,420	17,420	17,420	17,420	17,420	17,420	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	3,484	80%	13,936	100%	17,420
Water Reclamation Facility	Sewer Sys. Improve/Major Main.	250,000	250,000	250,000	250,000	250,000	250,000	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	50,000	80%	200,000	100%	250,000
Water Reclamation Facility	Transfer Out 531-Sewer Replacement	71,610	71,610	71,610	71,610	71,610	71,610	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	14,322	80%	57,288	100%	71,610
Water Reclamation Facility	Risk Management Charges	58,320	58,320	58,320	58,320	58,320	58,320	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	11,664	80%	46,656	100%	58,320
Water Reclamation Facility	Training	4,200	4,200	4,200	4,200	4,200	4,200	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	840	80%	3,360	100%	4,200
Water Reclamation Facility	Internal Printing/Copy Charges	190	190	190	190	190	190	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	38	80%	152	100%	190
Water Reclamation Facility	Memberships	250	250	250	250	250	250	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	50	80%	200	100%	250
Water Reclamation Facility	Administrative Indirect Charges	104,040	104,040	104,040	104,040	104,040	104,040	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	20,808	80%	83,232	100%	104,040
Water Reclamation Facility	Facilities Maintenance Charges	26,050	26,050	26,050	26,050	26,050	26,050	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	20%	5,210	80%	20,840	100%	26,050
Water																											
One-Time O&M Costs from Capital Projects								10%	-	30%	-	10%	-	10%	-	30%	-	0%	-	0%	-	0%	0%	0%	0%	-	
Cumulative Ongoing O&M Costs from Capital Projects		150,100	278,100	292,500	417,500		284,500	10%	28,455	10%	28,455	10%	28,455	20%	56,910	30%	56,910	85,365	284,550		0%	0%	0%	0%	0%	-	
One-Time O&M Costs from New Programs		260,000					52,000	65%	33,800	7%	3,640	0%	-	28%	14,560	0%	-	52,000	0%	0%	0%	0%	0%	0%	0%	-	
Additional O&M From New Programs		775,000	1,265,000	1,302,950	1,342,040		936,998	30%	281,099	11%	103,070	36%	337,319	11%	103,070	8%	74,960	4%	37,480	936,998	0%	0%	0%	0%	0%	-	
Debt Service			</																								

WATER																								
Block Ranges										Block Range Identifiers					Usage by Block Ranges									
Account Type	Water Rate Code	Sewer Rate Code	Class 1	Class 2	Meter Size	Inside/Out side	Block1	Block2	Block3	Block4	Block5	Block1	Block2	Block3	Block4	Block5	Block1	Block2	Block3	Block4	Block5	Total	Check	
2 01	101		Residential	3/4"	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	0	0	0	0	0	0	-	-
3 01	101		Residential	3/4"	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	872439	614017	344928	434569	1693	2,267,646	2,267,646	
4 01	102		Residential	1"	1	I	10	20	30	250	200	USE10	USE20	USE30	USE100	USE200	61211	17314	3727	1577	17	83,846	83,846	
5 01	103		Residential	1 1/2"	1.5	I	20	40	60	500	200	USE20	USE40	USE60	USE100	USE200	257	0	0	0	0	257	257	
6 01	202		Residential	1" Non-Residential	1	I	10	20	30	250	200	USE10	USE20	USE30	USE100	USE200	222	52	26	4	0	304	304	
7 01	301		Residential	Multi-Family	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	367	309	206	299	0	1,171	1,171	
8 02	101		Multi-Family/Apt	3/4"	0.75	I	2	4	6	47	200	USE2	USE4	USE6	USE47	USE200	10	10	10	70	0	100	100	
9 02	203		Multi-Family/Apt	1 1/2" Non-Residential	1.5	I	2	4	6	47	200	USE2	USE4	USE6	USE47	USE200	24	24	24	402	43	517	517	
10 02	204		Multi-Family/Apt	2" Non-Residential	2	I	31	61	91	752	200	USE31	USE61	USE91	USE100	USE200	4627	3466	2555	643	5816	17,107	17,107	
11 02	301		Multi-Family/Apt	Multi-Family	0.75	I	7789	15578	23367	194721	200	USE100	USE100	USE100	USE100	USE200	88602	0	0	0	121827	210,429	210,429	
12 03	101		Commercial/Gov	3/4"	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	167	134	118	421	0	840	840	
13 03	102		Commercial/Gov	1"	1	I	10	20	30	250	200	USE10	USE20	USE30	USE100	USE200	10	0	0	0	0	10	10	
14 03	201		Commercial/Gov	3/4" Non-Residential	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	4459	2996	2321	10234	6801	26,811	26,811	
15 03	202		Commercial/Gov	1" Non-Residential	1	I	10	20	30	250	200	USE10	USE20	USE30	USE100	USE200	7110	4333	2674	6480	4210	24,807	24,807	
16 03	203		Commercial/Gov	1 1/2" Non-Residential	1.5	I	20	40	60	500	200	USE20	USE40	USE60	USE100	USE200	24760	17027	12665	17704	41114	113,270	113,270	
17 03	204		Commercial/Gov	2" Non-Residential	2	I	32	64	96	800	200	USE32	USE64	USE96	USE100	USE200	50193	34749	25104	2563	112666	225,275	225,275	
18 03	205		Commercial/Gov	3" Non-Residential	3	I	60	120	180	1500	200	USE60	USE100	USE100	USE100	USE200	847	480	0	0	1388	2,715	2,715	
19 03	206		Commercial/Gov	4" Non-Residential	4	I	100	200	300	2500	200	USE100	USE100	USE100	USE100	USE200	3600	0	0	0	10589	14,189	14,189	
20 04	201		Schools	3/4" Non-Residential	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	164	133	103	423	530	1,353	1,353	
21 04	202		Schools	1" Non-Residential	1	I	10	20	30	250	200	USE10	USE20	USE30	USE100	USE200	313	176	120	251	0	860	860	
22 04	203		Schools	1 1/2" Non-Residential	1.5	I	20	40	60	500	200	USE20	USE40	USE60	USE100	USE200	1691	879	690	1040	3759	8,059	8,059	
23 04	204		Schools	2" Non-Residential	2	I	32	64	96	800	200	USE32	USE64	USE96	USE100	USE200	9242	4204	2706	281	25499	41,932	41,932	
24 04	205		Schools	3" Non-Residential	3	I	60	120	180	1500	200	USE60	USE100	USE100	USE100	USE200	3394	1658	0	0	10677	15,729	15,729	
25 04	206		Schools	4" Non-Residential	4	I	100	200	300	2500	200	USE100	USE100	USE100	USE100	USE200	2364	0	0	0	4525	6,889	6,889	
26 05	101		Churches	3/4"	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	22	13	10	17	0	62	62	
27 05	201		Churches	3/4" Non-Residential	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	837	563	396	688	0	2,484	2,484	
28 05	202		Churches	1" Non-Residential	1	I	10	20	30	250	200	USE10	USE20	USE30	USE100	USE200	230	225	218	1262	506	2,441	2,441	
29 05	203		Churches	1 1/2" Non-Residential	1.5	I	20	40	60	500	200	USE20	USE40	USE60	USE100	USE200	734	207	78	30	0	1,049	1,049	
30 05	204		Churches	2" Non-Residential	2	I	32	64	96	800	200	USE32	USE64	USE96	USE100	USE200	1337	153	64	4	16	1,574	1,574	
31 06	203		Industry	1 1/2" Non-Residential	1.5	I	20	40	60	500	200	USE20	USE40	USE60	USE100	USE200	114	0	0	0	0	114	114	
32 06	204		Industry	2" Non-Residential	2	I	32	64	96	800	200	USE32	USE64	USE96	USE100	USE200	332	16	0	0	0	348	348	
33 06	206		Industry	4" Non-Residential	4	I	100	200	300	2500	200	USE100	USE100	USE100	USE100	USE200	1170	0	0	0	960	2,130	2,130	
34 07	203		Laundries	1 1/2" Non-Residential	1.5	I	20	40	60	500	200	USE20	USE40	USE60	USE100	USE200	704	611	423	677	307	2,722	2,722	
35 07	204		Laundries	2" Non-Residential	2	I	32	64	96	800	200	USE32	USE64	USE96	USE100	USE200	384	384	384	48	1263	2,463	2,463	
36 08	101		Mobile Home Pa	3/4"	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	16	16	16	218	0	266	266	
37 08	204		Mobile Home Pa	2" Non-Residential	2	I	32	64	96	800	200	USE32	USE64	USE96	USE100	USE200	192	192	192	24	2289	2,889	2,889	
38 08	301		Mobile Home Pa	Multi-Family	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	104	101	96	1180	4211	5,692	5,692	
39 08	302		Mobile Home Pa	Mobile Home Parks	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	707	679	668	13784	40877	56,715	56,715	
40 09	008		Hydrant Meters	Hydrant Meter	6	I	200	400	600	5000	200	USE100	USE100	USE100	USE100	USE200	5601	0	0	0	8174	13,775	13,775	
41 10	201		Car Wash	3/4" Non-Residential	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	48	48	48	1056	3875	5,075	5,075	
42 10	203		Car Wash	1 1/2" Non-Residential	1.5	I	20	40	60	500	200	USE20	USE40	USE60	USE100	USE200	240	207	81	3	0	531	531	
43 10	204		Car Wash	2" Non-Residential	2	I	32	64	96	800	200	USE32	USE64	USE96	USE100	USE200	1739	1523	1504	185	10718	15,669	15,669	
44 13	101		Landscape Mete	3/4"	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	32	8	0	0	0	40	40	
45 13	201		Landscape Mete	3/4" Non-Residential	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	2602	1956	1623	12983	18045	37,209	37,209	
46 13	202		Landscape Mete	1" Non-Residential	1	I	10	20	30	250	200	USE10	USE20	USE30	USE100	USE200	8756	6459	5208	18369	17333	56,125	56,125	
47 13	203		Landscape Mete	1 1/2" Non-Residential	1.5	I	20	40	60	500	200	USE20	USE40	USE60	USE100	USE200	23852	19671	16015	26021	114708	200,267	200,267	
48 13	204		Landscape Mete	2" Non-Residential	2	I	32	64	96	800	200	USE32	USE64	USE96	USE100	USE200	48197	41240	35292	4094	301603	430,426	430,426	
49 13	205		Landscape Mete	3" Non-Residential	3	I	60	120	180	1500	200	USE60	USE100	USE100	USE100	USE200	720	480	0	0	15467	16,667	16,667	
50 13	206		Landscape Mete	4" Non-Residential	4	I	100	200	300	2500	200	USE100	USE100	USE100	USE100	USE200	2400	0	0	0	27218	29,618	29,618	
51 13	207		Landscape Mete	6" Non-Residential	6	I	200	400	600	5000	200	USE100	USE100	USE100	USE100	USE200	100	0	0	0	3400	3,500	3,500	
52 13	301		Landscape Mete	Multi-Family	0.75	I	4	8	12	100	200	USE4	USE8	USE12	USE100	USE200	96	96	96	1993	3554	5,835	5,835	

SEWER																							
Account Type	Water Rate Code	Sewer Rate Code	Class	Class 2	Meter Size	Inside/Out side	Block Ranges					Block Range Identifiers					Usage by Block Ranges					Total	Check
							Block1	Block2	Block3	Block4	Block5	Block1	Block2	Block3	Block4	Block5	Block1	Block2	Block3	Block4	Block5		
65	01	101	101	Residential	Residential	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	1441024	323706	0	0	0	1764730	1,764,730
66	01	102	101	Residential	Residential	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	52722	14325	0	0	0	67047	67,047
67	01	103	101	Residential	Residential	1.5 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	200	165	0	0	0	365	365
68	01	202	101	Residential	Residential	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	96	36	0	0	0	132	132
69	01	301	101	Residential	Residential	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	172	165	0	0	0	337	337
70	01	202	201	Residential	Professional Office	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	39	0	0	0	0	39	39
71	01	301	301	Residential	Multi-Family	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	233	172	0	0	0	405	405
72	02	101	101	Multi-Family/Apt/	Residential	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	31	18	0	0	0	49	49
73	02	301	101	Multi-Family/Apt/	Residential	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	265	210	0	0	0	475	475
74	02	204	201	Multi-Family/Apt/	Professional Office	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	72	828	0	0	359	1259	1,259
75	02	301	201	Multi-Family/Apt/	Professional Office	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	72	828	0	0	359	1259	1,259
76	02	101	301	Multi-Family/Apt/	Multi-Family	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	232	329	0	0	0	561	561
77	02	204	301	Multi-Family/Apt/	Multi-Family	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	1082	7310	0	0	4604	12996	12,996
78	02	301	301	Multi-Family/Apt/	Multi-Family	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	11406	68457	0	0	115423	195286	195,286
79	03	101	101	Commercial/Gov	Residential	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	9	0	0	0	0	9	9
80	03	201	101	Commercial/Gov	Residential	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	9	0	0	0	0	9	9
81	03	201	110	Commercial/Gov	Auto Steam Cleaning	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	16	0	0	0	0	16	16
82	03	201	111	Commercial/Gov	Bakery Wholesale	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	74	10	0	0	0	84	84
83	03	203	111	Commercial/Gov	Bakery Wholesale	1.5 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	96	198	0	0	0	294	294
84	03	202	112	Commercial/Gov	Hospital & Convalescence	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	96	161	0	0	0	257	257
85	03	204	112	Commercial/Gov	Hospital & Convalescence	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	192	2208	0	0	5216	7616	7,616
86	03	204	113	Commercial/Gov	Hotel w/Dining	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	96	1104	0	0	1215	2415	2,415
87	03	203	114	Commercial/Gov	Hotel w/o Dining	1.5 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	96	761	0	0	50	907	907
88	03	204	114	Commercial/Gov	Hotel w/o Dining	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	96	733	0	0	40	869	869
89	03	201	115	Commercial/Gov	Markets with Garbage Disposal	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	469	398	0	0	0	867	867
90	03	203	115	Commercial/Gov	Markets with Garbage Disposal	1.5 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	192	1049	0	0	10	1251	1,251
91	03	204	115	Commercial/Gov	Markets with Garbage Disposal	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	478	4123	0	0	2212	6813	6,813
92	03	101	117	Commercial/Gov	Repair Shop and Service Station	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	11	0	0	0	0	11	11
93	03	201	117	Commercial/Gov	Repair Shop and Service Station	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	574	127	0	0	0	701	701
94	03	202	117	Commercial/Gov	Repair Shop and Service Station	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	460	328	0	0	0	788	788
95	03	203	117	Commercial/Gov	Repair Shop and Service Station	1.5 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	459	1103	0	0	2	1564	1,564
96	03	204	117	Commercial/Gov	Repair Shop and Service Station	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	288	2714	0	0	2718	5720	5,720
97	03	201	118	Commercial/Gov	Restaurant	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	814	1792	0	0	0	2606	2,606
98	03	202	118	Commercial/Gov	Restaurant	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	321	613	0	0	35	969	969
99	03	203	118	Commercial/Gov	Restaurant	1.5 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	1537	8364	0	0	1587	11488	11,488
##	03	204	118	Commercial/Gov	Restaurant	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	768	5994	0	0	830	7592	7,592
##	03	204	120	Commercial/Gov	Schools & Colleges	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	96	825	0	0	146	1067	1,067
##	03	201	121	Commercial/Gov	Bars W/O Dining	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	55	2	0	0	0	57	57
##	03	202	121	Commercial/Gov	Bars W/O Dining	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	88	33	0	0	0	121	121
##	03	201	178	Commercial/Gov	Commercial Laundry	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	96	97	0	0	0	193	193
##	03	202	179	Commercial/Gov	Car Wash	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	87	8	0	0	0	95	95
##	03	204	179	Commercial/Gov	Car Wash	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	96	1104	0	0	1277	2477	2,477
##	03	102	201	Commercial/Gov	Professional Office	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	52	6	0	0	0	58	58
##	03	201	201	Commercial/Gov	Professional Office	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	3183	3833	0	0	1920	8936	8,936
##	03	202	201	Commercial/Gov	Professional Office	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	2559	3419	0	0	153	6131	6,131
##	03	203	201	Commercial/Gov	Professional Office	1.5 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	3950	11778	0	0	557	16285	16,285
##	03	204	201	Commercial/Gov	Professional Office	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	7855	35647	0	0	11445	54947	54,947
##	03	205	201	Commercial/Gov	Professional Office	3 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	195	1090	0	0	885	2170	2,170
##	03	206	201	Commercial/Gov	Professional Office	4 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	288	3312	0	0	7751	11351	11,351
##	03	201	202	Commercial/Gov	Department Store & Retail	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	767	745	0	0	32	1544	1,544
##	03	202	202	Commercial/Gov	Department Store & Retail	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	530	719	0	0	9	1258	1,258
##	03	203	202	Commercial/Gov	Department Store & Retail	1.5 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	651	706	0	0	8	1365	1,365
##	03	204	202	Commercial/Gov	Department Store & Retail	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	1479	7784	0	0	10269	19532	19,532
##	04	201	120	Schools	Schools & Colleges	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	168	170	0	0	0	338	338
##	04	202	120	Schools	Schools & Colleges	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	89	57	0	0	0	146	146
##	04	203	120	Schools	Schools & Colleges	1.5 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	628	1231	0	0	0	1859	1,859
##	04	204	120	Schools	Schools & Colleges	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	2768	10452	0	0	14689	27909	27,909
##	04	205	120	Schools	Schools & Colleges	3 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	480	4253	0	0	7852	12585	12,585
##	04	206	120	Schools	Schools & Colleges	4 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	192	2113	0	0	3207	5512	5,512
##	04	201	201	Schools	Professional Office	0.75 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	114	249	0	0	384	747	747
##	04	202	201	Schools	Professional Office	1 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	64	0	0	0	0	64	64
##	04	204	201	Schools	Professional Office	2 I	8	100	100	100	200	USE8	USE100	USE100	USE100	USE200	177	206	0	0	0	383	383
##	0																						

City of Avondale, Arizona
 Cost of Service Analysis
 Calculation of Estimated Pounds of BOD/SS Removed

Calculation of Estimated Pounds of BOD Removed

Calculation of Estimated Pounds of SS Removed

Account Type	Water Rate Code	Sewer Rate Code	Class	Class 2	Meter Size	Inside / Outside	Wastewater Flow (1,000 Gallons)	Wastewater Flow (Liters)	Industry Standard Loading Factor (mg/L)	Total Estimated BOD Removed (mg)	Normal Strength Threshold (mg/L)	Estimated BOD Removed from Normal Strength Flows (mg)	Estimated BOD Removed from Extra Strength Flows (mg)	Industry Standard Loading Factor (mg/L)	Total Estimated SS Removed (mg)	Normal Strength Threshold (mg/L)	Estimated SS Removed from Normal Strength Flows (mg)	Estimated SS Removed from Normal Strength Flows (Pounds)		
																			Total Estimated BOD Removed (Pounds)	Estimated BOD Removed (Pounds)
01	101	101	Residential Residential	Residential Residential	0.75	I	1,764,730	6,680,229,738	250	1,670,057,434,395	3,681,846	1500	1,670,057,434,395	3,681,846	225	1,503,051,690,955	3,313,662	1000	1,503,051,690,955	3,313,662
01	102	101	Residential Residential	Residential Residential	1	I	67,047	253,800,504	250	63,450,125,970	139,884	1500	63,450,125,970	139,884	225	57,105,113,373	125,895	1000	57,105,113,373	125,895
01	103	101	Residential Residential	Residential Residential	1.5	I	365	1,381,675	250	345,418,825	762	1500	345,418,825	762	225	310,876,943	685	1000	310,876,943	685
01	202	101	Residential Residential	Residential Residential	1	I	132	499,674	250	124,918,589	275	1500	124,918,589	275	225	112,426,730	248	1000	112,426,730	248
01	301	101	Residential Residential	Residential Residential	0.75	I	337	1,275,684	250	318,920,943	703	1500	318,920,943	703	225	287,028,849	633	1000	287,028,849	633
01	202	201	Residential Professional Office	Residential Professional Office	1	I	39	147,631	130	19,192,038	42	1500	19,192,038	42	80	11,810,485	26	1000	11,810,485	26
01	301	301	Residential Multi-Family	Residential Multi-Family	0.75	I	405	1,533,092	250	383,272,943	845	1500	383,272,943	845	225	344,945,649	760	1000	344,945,649	760
02	101	101	Multi-Famli Residential	Multi-Famli Residential	0.75	I	49	185,495	250	46,371,294	102	1500	46,371,294	102	225	41,734,165	92	1000	41,734,165	92
02	301	101	Multi-Famli Residential	Multi-Famli Residential	0.75	I	475	1,798,071	250	449,517,649	991	1500	449,517,649	991	225	404,565,884	892	1000	404,565,884	892
02	204	201	Multi-Famli Professional Office	Multi-Famli Professional Office	2	I	1,259	4,765,833	130	619,558,347	1,366	1500	619,558,347	1,366	80	381,266,675	841	1000	381,266,675	841
02	301	201	Multi-Famli Professional Office	Multi-Famli Professional Office	0.75	I	1,259	4,765,833	130	619,558,347	1,366	1500	619,558,347	1,366	80	381,266,675	841	1000	381,266,675	841
02	101	301	Multi-Famli Multi-Family	Multi-Famli Multi-Family	0.75	I	301	1,123,616	250	530,904,003	1,170	1500	530,904,003	1,170	225	477,813,602	1,053	1000	477,813,602	1,053
02	301	301	Multi-Famli Multi-Family	Multi-Famli Multi-Family	2	I	12,996	49,195,212	250	12,298,802,886	27,114	1500	12,298,802,886	27,114	225	11,068,922,598	24,403	1000	11,068,922,598	24,403
03	101	301	Multi-Famli Multi-Family	Multi-Famli Multi-Family	0.75	I	195,286	739,237,926	250	184,809,481,413	407,435	1500	184,809,481,413	407,435	225	166,328,533,271	366,692	1000	166,328,533,271	366,692
03	101	101	Commercial Residential	Commercial Residential	0.75	I	9	34,069	250	8,517,177	19	1500	8,517,177	19	225	7,665,459	17	1000	7,665,459	17
03	201	110	Commercial Auto Steam Cleaning	Commercial Auto Steam Cleaning	0.75	I	16	60,567	1150	69,651,577	154	1500	69,651,577	154	1250	75,708,236	167	1000	60,566,589	134
03	201	111	Commercial Bakery Wholesale	Commercial Bakery Wholesale	0.75	I	64	317,975	1000	317,974,590	701	1500	317,974,590	701	600	190,784,754	421	1000	190,784,754	421
03	201	112	Commercial Bakery Wholesale	Commercial Bakery Wholesale	1.5	I	264	1,112,911	1000	1,112,911,064	2,454	1500	1,112,911,064	2,454	600	667,746,639	1,472	1000	667,746,639	1,472
03	202	112	Commercial Hospital & Convalescence	Commercial Hospital & Convalescence	2	I	857	3,281,952	250	243,212,707	536	1500	243,212,707	536	100	97,285,083	214	1000	97,285,083	214
03	204	112	Commercial Hospital & Convalescence	Commercial Hospital & Convalescence	2	I	7,616	28,829,696	250	7,207,424,037	15,890	1500	7,207,424,037	15,890	100	2,882,969,615	6,356	1000	2,882,969,615	6,356
03	204	113	Commercial Hotel w/Dining	Commercial Hotel w/Dining	2	I	2,415	9,141,769	500	4,570,884,729	10,077	1500	4,570,884,729	10,077	600	5,485,061,675	12,092	1000	5,485,061,675	12,092
03	203	114	Commercial Hotel w/Dining	Commercial Hotel w/Dining	1.5	I	907	3,433,368	310	1,064,344,231	2,346	1500	1,064,344,231	2,346	120	412,004,219	908	1000	412,004,219	908
03	204	114	Commercial Hotel w/Dining	Commercial Hotel w/Dining	2	I	869	3,299,523	310	1,016,752,080	2,248	1500	1,016,752,080	2,248	120	394,742,741	870	1000	394,742,741	870
03	201	115	Commercial Markets with Garbage Disposal	Commercial Markets with Garbage Disposal	0.75	I	867	3,281,952	800	2,625,561,613	5,788	1500	2,625,561,613	5,788	800	2,625,561,613	5,788	1000	2,625,561,613	5,788
03	203	115	Commercial Markets with Garbage Disposal	Commercial Markets with Garbage Disposal	1.5	I	1,251	4,735,550	800	3,788,440,113	8,352	1500	3,788,440,113	8,352	800	3,788,440,113	8,352	1000	3,788,440,113	8,352
03	204	115	Commercial Markets with Garbage Disposal	Commercial Markets with Garbage Disposal	2	I	6,813	25,790,010	800	20,632,008,388	45,486	1500	20,632,008,388	45,486	800	20,632,008,388	45,486	1000	20,632,008,388	45,486
03	101	117	Commercial Repair Shop and Service Station	Commercial Repair Shop and Service Station	0.75	I	11	41,640	180	7,495,115	17	1500	7,495,115	17	280	11,659,068	26	1000	11,659,068	26
03	201	117	Commercial Repair Shop and Service Station	Commercial Repair Shop and Service Station	0.75	I	701	2,653,574	180	477,643,259	1,053	1500	477,643,259	1,053	280	743,000,625	1,638	1000	743,000,625	1,638
03	203	117	Commercial Repair Shop and Service Station	Commercial Repair Shop and Service Station	1	I	788	2,882,904	180	536,922,807	1,184	1500	536,922,807	1,184	280	825,213,256	1,841	1000	825,213,256	1,841
03	203	117	Commercial Repair Shop and Service Station	Commercial Repair Shop and Service Station	1.5	I	1,564	5,920,384	180	1,065,669,125	2,349	1500	1,065,669,125	2,349	280	1,657,707,528	3,655	1000	1,657,707,528	3,655
03	204	117	Commercial Repair Shop and Service Station	Commercial Repair Shop and Service Station	2	I	5,720	21,652,555	180	3,897,459,973	8,592	1500	3,897,459,973	8,592	280	6,062,715,513	13,366	1000	6,062,715,513	13,366
03	201	118	Commercial Restaurant	Commercial Restaurant	0.75	I	2,606	9,864,783	1000	9,864,783,109	21,748	1500	9,864,783,109	21,748	600	5,918,869,865	13,049	1000	5,918,869,865	13,049
03	202	118	Commercial Restaurant	Commercial Restaurant	1	I	969	3,668,064	1000	3,668,064,019	8,087	1500	3,668,064,019	8,087	600	2,200,838,411	4,852	1000	2,200,838,411	4,852
03	203	118	Commercial Restaurant	Commercial Restaurant	1.5	I	11,488	43,486,811	1000	43,486,810,575	9,529	1500	43,486,810,575	9,529	600	26,092,086,345	57,523	1000	26,092,086,345	57,523
03	204	118	Commercial Restaurant	Commercial Restaurant	2	I	7,592	28,738,846	1000	28,738,846,264	63,358	1500	28,738,846,264	63,358	600	17,243,307,758	38,015	1000	17,243,307,758	38,015
03	204	120	Commercial Schools & Colleges	Commercial Schools & Colleges	2	I	1,067	4,039,034	130	525,074,469	1,158	1500	525,074,469	1,158	100	403,903,437	890	1000	403,903,437	890
03	201	121	Commercial Bars W/O Dining	Commercial Bars W/O Dining	0.75	I	57	215,768	200	43,153,694	95	1500	43,153,694	95	200	43,153,694	95	1000	43,153,694	95
03	202	121	Commercial Bars W/O Dining	Commercial Bars W/O Dining	1	I	121	458,035	200	91,606,965	202	1500	91,606,965	202	200	91,606,965	202	1000	91,606,965	202
03	201	178	Commercial Commercial Laundry	Commercial Commercial Laundry	0.75	I	193	730,584	450	328,763,013	725	1500	328,763,013	725	240	175,340,274	387	1000	175,340,274	387
03	202	179	Commercial Car Wash	Commercial Car Wash	1	I	95	359,614	20	7,192,282	16	1500	7,192,282	16	150	53,942,118	119	1000	53,942,118	119
03	204	179	Commercial Car Wash	Commercial Car Wash	2	I	2,477	9,376,465	20	187,529,300	413	1500	187,529,300	413	150	1,406,469,748	3,101	1000	1,406,469,748	3,101
03	102	201	Commercial Professional Office	Commercial Professional Office	1	I	58	219,554	130	28,542,005	63	1500	28,542,005	63	80	17,564,311	39	1000	17,564,311	39
03	201	201	Commercial Professional Office	Commercial Professional Office	0.75	I	8,938	33,826,440	130	4,397,437,161	9,695	1500	4,397,437,161	9,695	80	2,706,115,176	5,966	1000	2,706,115,176	5,966
03	202	201	Commercial Professional Office	Commercial Professional Office	1	I	6,131	23,208,360	130	3,017,086,754	6,652	1500	3,017,086,754	6,652	80	1,856,668,772	4,093	1000	1,856,668,772	4,093
03	203	201	Commercial Professional Office	Commercial Professional Office	1.5	I	16,285	61,545,431	130	8,013,905,017	17,668	1500	8,013,905,017	17,668	80	4,931,634,472	10,872	1000	4,931,634,472	10,872
03	204	201	Commercial Professional Office	Commercial Professional Office	2	I	54,947	207,997,021	130	27,039,612,768	59,612	1500	27,039,612,768	59,612	80	16,639,761,704	36,684	1000	16,639,761,704	36,684
03	205	201	Commercial Professional Office	Commercial Professional Office	3	I	2,170	8,214,344	130	1,067,864,664	2,354	1500	1,067,864,664	2,354	80	657,147,486	1,449	1000	657,147,486	1,449
03	206	201	Commercial Professional Office	Commercial Professional Office	4	I	11,351	42,968,209	130	5,585,867,191	12,315	1500	5,585,867,191	12,315	80	3,437,456,733	7,578	1000	3,437,456,733	7,578
03	201	202	Commercial Department Store &																	

Allocation of Total Wastewater Treatment Costs to Removal of BOD/SS

	BOD	SS	Total
Total Wastewater Treatment Costs			\$ 3,133,556
Estimated Pounds Removed from Normal Strength Wastewater Flow	4,935,394	4,365,852	9,301,247
	-	33	33
Estimated Pounds Removed	4,935,394	4,365,885	9,301,280
Pct of Total Pounds Removed	53.1%	46.9%	
Allocated Treatment Costs to BOD/SS	\$ 2,193,489	\$ 940,067	\$ 3,133,556
Pct of costs of Treatment	70.00%	30.00%	
			\$ -
Unit Cost per Pound	\$ 0.444	\$ 0.215	

Calculation of BOD charge per 1,000 Gallons

Calculation of SS Charge per 1,000 Gallons

Sewer Rate Code	Description	Strength Charge =	Vs	Conv Factor	Unit Charge	Strength Index	Allowed	BOD Strength Charge per 1,000 Gallons	Calculation of SS Charge per 1,000 Gallons						SS Strength Charge per 1,000 Gallons	Sewer Rate Code	Total Strength Charge
									Charge	Vs	Conv Factor	Unit Charge	Strength Index	Allowed			
000	No-Charge	\$ 0.0037	1	0.00834	\$ 0.444	0	1500	\$ -	\$ 0.002	1	0.00834	\$ 0.215	0	1000	-	000	\$ -
001	Auto Steam Cleaning	\$ 0.0037	1	0.00834	\$ 0.444	1150	1500	\$ 4.26	\$ 0.002	1	0.00834	\$ 0.215	1250	1000	2.245	001	\$ 6.51
101	Residential	\$ 0.0037	1	0.00834	\$ 0.444	250	1500	\$ 0.93	\$ 0.002	1	0.00834	\$ 0.215	225	1000	0.404	101	\$ 1.33
110	Auto Steam Cleaning	\$ 0.0037	1	0.00834	\$ 0.444	1150	1500	\$ 4.26	\$ 0.002	1	0.00834	\$ 0.215	1250	1000	2.245	110	\$ 6.51
111	Bakery Wholesale	\$ 0.0037	1	0.00834	\$ 0.444	1000	1500	\$ 3.71	\$ 0.002	1	0.00834	\$ 0.215	600	1000	1.077	111	\$ 4.78
112	Hospital & Convalescence	\$ 0.0037	1	0.00834	\$ 0.444	250	1500	\$ 0.93	\$ 0.002	1	0.00834	\$ 0.215	100	1000	0.180	112	\$ 1.11
113	Markets with Garbage Disposal	\$ 0.0037	1	0.00834	\$ 0.444	800	1500	\$ 2.97	\$ 0.002	1	0.00834	\$ 0.215	800	1000	1.437	113	\$ 4.40
114	Repair Shop and Service Station	\$ 0.0037	1	0.00834	\$ 0.444	180	1500	\$ 0.67	\$ 0.002	1	0.00834	\$ 0.215	280	1000	0.503	114	\$ 1.17
115	Restaurant	\$ 0.0037	1	0.00834	\$ 0.444	1000	1500	\$ 3.71	\$ 0.002	1	0.00834	\$ 0.215	600	1000	1.077	115	\$ 4.78
117	Schools & Colleges	\$ 0.0037	1	0.00834	\$ 0.444	130	1500	\$ 0.48	\$ 0.002	1	0.00834	\$ 0.215	100	1000	0.180	117	\$ 0.66
118	Bars W/O Dining	\$ 0.0037	1	0.00834	\$ 0.444	200	1500	\$ 0.74	\$ 0.002	1	0.00834	\$ 0.215	200	1000	0.359	118	\$ 1.10
120	Laundromat	\$ 0.0037	1	0.00834	\$ 0.444	150	1500	\$ 0.56	\$ 0.002	1	0.00834	\$ 0.215	110	1000	0.198	120	\$ 0.75
121	Commercial Laundry	\$ 0.0037	1	0.00834	\$ 0.444	450	1500	\$ 1.67	\$ 0.002	1	0.00834	\$ 0.215	240	1000	0.431	121	\$ 2.10
177	Car Wash	\$ 0.0037	1	0.00834	\$ 0.444	20	1500	\$ 0.07	\$ 0.002	1	0.00834	\$ 0.215	150	1000	0.269	177	\$ 0.34
178	Professional Office	\$ 0.0037	1	0.00834	\$ 0.444	130	1500	\$ 0.48	\$ 0.002	1	0.00834	\$ 0.215	80	1000	0.144	178	\$ 0.63
179	Department Store & Retail	\$ 0.0037	1	0.00834	\$ 0.444	150	1500	\$ 0.56	\$ 0.002	1	0.00834	\$ 0.215	150	1000	0.269	179	\$ 0.83
201	Multi-Family	\$ 0.0037	1	0.00834	\$ 0.444	250	1500	\$ 0.93	\$ 0.002	1	0.00834	\$ 0.215	225	1000	0.404	201	\$ 1.33
202	Mobile Home Park	\$ 0.0037	1	0.00834	\$ 0.444	250	1500	\$ 0.93	\$ 0.002	1	0.00834	\$ 0.215	225	1000	0.404	202	\$ 1.33
301	Hotel w/Dining	\$ 0.0037	1	0.00834	\$ 0.444	500	1500	\$ 1.85	\$ 0.002	1	0.00834	\$ 0.215	600	1000	1.077	301	\$ 2.93
302	Hotel w/o Dining	\$ 0.0037	1	0.00834	\$ 0.444	310	1500	\$ 1.15	\$ 0.002	1	0.00834	\$ 0.215	120	1000	0.215	302	\$ 1.36
	602 Mortuaries	\$ 0.0037	1	0.00834	\$ 0.444	800	1500	\$ 2.97	\$ 0.002	1	0.00834	\$ 0.215	800	1000	1.437	602	\$ 4.40
	603 Septage	\$ 0.0037	1	0.00834	\$ 0.444	5400	1500	\$ 20.02	\$ 0.002	1	0.00834	\$ 0.215	12000	1000	21.549	603	\$ 41.57
	604 Soft Water Service	\$ 0.0037	1	0.00834	\$ 0.444	3	1500	\$ 0.01	\$ 0.002	1	0.00834	\$ 0.215	55	1000	0.099	604	\$ 0.11

CITY OF AVONDALE



RESIDENTIAL SANITATION RATE AND COST OF SERVICE ANALYSIS

*PREPARED BY
FINANCE & BUDGET STAFF*

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SUMMARY

The City of Avondale currently charges \$20.00 per month for residential sanitation services. The last rate adjustment approved by council was effective in January of 2009. This rate has been sufficient for the last three fiscal years to recover the cost of providing service. After evaluating expenses and revenues, projections indicate that the growth in customers will generate sufficient revenue to cover costs in the short term. The major costs for a sanitation operation stem from the labor requirements, fuel costs and vehicle maintenance costs.

Public Works staff continually makes every attempt to reduce costs and maximize efficiency. This report details all revenues, expenses and evaluation of operations.

BACKGROUND

Avondale currently services approximately 20,250 single family residential accounts. According to billing records and work orders, new customers are being added to the system at a rate of 20 to 24 new customers per month. This rate is still significantly less than just a few years ago, when the economy was expanding and new homes were being constructed at a rate of over 100 per month. The majority of customers receive once a week refuse collection, once a week recycling collection and uncontained trash collection once per month. These customers receive two (2) ninety (90) gallon containers; one for regular refuse and the other for recyclables. There are also approximately 295 customers that are being billed for two (2) black container pickups and five (5) customers that are billed for twice a week pickup.

As stated the current rate for residential collection is \$20 per month. Rates have also been set for additional pickups and additional containers. The following table shows residential sanitation rates since 2005.

<u>Effective Date</u>	<u>Fee</u>
March 20, 2005	\$16.25
March 20, 2006	\$16.50
January 3, 2007	\$18.00
January 2, 2008	\$19.00
January 1, 2009	\$20.00

Revenues for residential sanitation are currently projected to total approximately \$5,114,940 for fiscal year 2012-13. This is based on the current customers and projected growth through the end of the fiscal year. Expenses and transfers out for fiscal year 2012-13 are projected to total \$4,773,120 based on the current budget. This, combined with a beginning balance of \$4,415,973, results in an ending balance of approximately \$4,757,793.

PURPOSE AND SCOPE

The primary goal of this annual study is to evaluate residential sanitation services and ensure costs are being recovered through the service fees. Staff completed the following tasks to ensure a comprehensive evaluation:

- Analyze historical and projected revenues
- Analyze historical and projected expenditures

- Project future staffing and equipment needs
- Identify total revenue requirements
- Design rates based on cost of service and reserve requirements
- Analyze City comparison data

SANITATION OPERATIONS

Public Works staff conducts an ongoing assessment of the current fleet requirements, staffing needs and current route setup. Efficiency is assessed for both automated collection and uncontained collection.

The automated can-counters in each truck helps evaluate route, operator and equipment efficiencies. Route sizes are continually being re-aligned to obtain maximum efficiency for each day. In the past, staff has done benchmarking to compare route standards within the valley to enable staff to use best practices in developing efficient routes, leading to savings in time and fuel. These efforts also helped establish the required staffing ratios for maximum service delivery.

Staff has completed the process of replacing the single axle trucks with larger capacity dual axle trucks. This was done to improve the efficiency of the sanitation routes. The larger capacities allow the driver to pick up an increased number of cans before having to make a trip to the landfill. The actual savings in fuel costs recognized by increasing the capacity of the trucks is difficult to determine due to the realignment of routes, the fluctuations in fuel costs, as well as the differences in fuel efficiency obtained by the new and old trucks.

The recycling program diverts nearly 5,000 tons of refuse from the city's waste stream. This is approximately 17% of total refuse collections. The program has decreased slightly in tonnage from last fiscal year when nearly 20% was diverted. However, Public Works staff has recently awarded a new contract for a recycling commodities revenue sharing arrangement. Along with a savings of about \$132,500 annually in landfill tipping fees, assuming the current tipping fee of \$26.50, the new contract should result in recycling revenue sharing increasing by \$60,000 or more depending on the market rates for newspapers and cardboard.

The inspection and residential education program helps keep the recyclable collections within an acceptable rate of contamination. Public Works staff continues to provide customer assistance and guidance to help increase awareness of acceptable recycling items. The education and enforcement program also requires yearly inspection and permitting of commercial sanitation vehicles operating in the city. The inspectors monitor business locations to ensure service levels are sufficient to meet health and safety standards. Inspectors are also responsible for keeping residents in compliance with city code. Common violations are overfilled containers and bulk trash over the 3 cubic yard limit.

REVENUES

As previously indicated, revenue for FY 2013 is estimated to total \$5,114,940. Prior year and projected rate, commercial hauler permits and recycling revenue is shown in Table 1.

Table 1 – Sanitation Revenue

	FY 11-12 Actuals	FY 12-13 Estimate	FY 13-14 Estimate	FY 14-15 Estimate	FY 15-16 Estimate	FY 16-17 Estimate
Revenue Under Existing Rates	4,881,604	4,897,200	4,961,680	5,029,910	5,101,590	5,170,630
Recycling Revenue Share	153,807	183,770	214,000	216,940	220,030	223,010
Commercial Permits	24,000	24,000	24,000	24,000	24,000	24,000
Interest	2,451	1,820	4,230	4,580	4,760	4,850
Other	11,819	8,150	9,630	9,980	8,890	9,810
Total	\$5,073,681	\$5,114,940	\$5,213,540	\$5,285,410	\$5,359,270	\$5,432,300

Projections assume the same rate of growth which we have been experiencing over the last few years which is on average about a 1.3% increase in residential customers. This growth percentage is used for both the number of residential accounts and the recyclable tonnage that will be diverted.

Recycling revenue is expected to increase over the next few years based on the Public Works' department recent contract award. The proposals received for revenue sharing options indicate that the recycling materials processing contractors are willing to pay a fixed rate plus an additional revenue share based on current recyclable commodities market indexes found in the Official Board Markets (OBM). The projected recycling revenue share used in this analysis assumes the contract fixed rate plus the lowest calculated revenue share over the last 18 months ($\$31.00 + 10.65 = \41.65 per ton). While an average rate ($\$61.56$) would likely provide a more accurate forecast, staff chose to use the conservative approach until more months of actual revenue data becomes available.

EXPENSES

Revenue requirements include operation and maintenance expense, indirect costs, departmental administrative costs, insurance, vehicle replacement and reserve requirements. With the passage of the SB1525 in 2011 which eliminated the authority to collect an impact fee from new development for their proportionate share of the cost of vehicles and containers to service new homes, the sanitation enterprise will now have to recover sufficient funds to purchase all refuse containers and vehicles including new and replacement equipment. In order to maintain consistency in reporting sanitation expenses, the operating fund will now include a transfer to the sanitation capital fund to accumulate funds for purchase of growth related vehicles and equipment. Table 2 shows one year of actual expenses, along with expense and transfer projections for the five year study period.

Table 2 – Sanitation Expenses

	FY 11-12 Actuals	FY 12-13 Estimate	FY 13-14 Estimate	FY 14-15 Estimate	FY 15-16 Estimate	FY 16-17 Estimate
Personal Services	1,275,183	1,290,680	1,405,170	1,426,090	1,447,200	1,459,380
Contractual Services	180,602	194,900	196,760	199,420	202,180	204,850
Landfill Fees	608,709	620,000	682,600	729,060	777,050	825,670
Commodities	154,276	161,150	219,500	249,650	252,370	255,070
Vehicle Maint & Replacem.	1,214,091	1,459,870	1,410,220	1,515,390	1,519,820	1,522,270
Capital Outlay & Transfers	0	200,000	54,400	54,400	79,400	79,400
Other	659,770	846,520	858,330	870,420	882,770	890,020
Total	\$4,092,631	\$4,773,120	\$4,826,980	\$5,044,430	\$5,160,790	\$5,236,660

ALLOCATION OF COSTS

CURBSIDE RESIDENTIAL COLLECTION

The curbside residential collection service includes all costs associated with the weekly collection of both refuse and recyclable materials. This service currently requires 12 equipment operators and 12 curbside vehicles. Costs also include a supervisor, two pickup trucks and disposal of approximately 20,600 tons of refuse. The current cost of refuse disposal is \$26.50 per ton. This rate is projected to increase by \$1.50 per year based on the current intergovernmental agreement (IGA) with the City of Glendale. The total estimated expenses for this service are shown in Table 3.

Table 3 – Curbside Residential Collection Expense Estimates

	FY 11-12 Actuals	FY 12-13 Estimate	FY 13-14 Estimate	FY 14-15 Estimate	FY 15-16 Estimate	FY 16-17 Estimate
Personal Services	906,503	922,930	1,026,520	1,042,750	1,058,460	1,067,900
Contractual Services	103,962	110,570	112,000	113,540	115,140	116,690
Landfill Fees	513,709	525,000	593,710	634,120	675,860	718,150
Commodities	145,826	153,300	211,560	241,610	244,230	246,830
Vehicle Maint & Repl	992,821	1,213,980	1,183,320	1,286,820	1,289,490	1,290,250
Capital Outlay	0	200,000	50,000	50,000	75,000	75,000
Other	571,430	736,520	746,900	757,480	768,240	773,960
	\$3,234,251	\$3,862,300	\$3,924,010	\$4,126,320	\$4,226,420	\$4,288,780

As shown in Table 3, the projections for this program include the addition of one driver in FY 13-14. Included in the commodities projections is increased funding for new and replacement cans. In addition, vehicle costs have increased from FY 11-12 which is due to the reductions in transfers to the vehicle replacement fund in the prior two fiscal years. This was done to help reduce costs city wide and avoid the need for any immediate rate increases. The full funding of replacement, including inflation, has been restored in FY 12-13 to ensure there will be sufficient funds available to replace equipment at the end of its useful life.

The cost of equipment for this service is the largest expense and based on the most recent estimates for sideload sanitation trucks, the purchase price has increased by 31% or over \$63,000 per truck since our last purchase in 2008. Transfers to the sanitation capital fund to purchase new vehicles are shown as capital outlay in the table.

UNCONTAINED REFUSE COLLECTION

The costs of uncontained refuse collection include the expenses associated with the monthly collection of loose trash for residents. This includes personnel costs for three employees, associated vehicles, and disposal of approximately 3,100 tons of refuse. The estimated expenses are shown in Table 4.

Table 4 – Uncontained Refuse Expense Estimates

	FY 11-12 Actuals	FY 12-13 Estimate	FY 13-14 Estimate	FY 14-15 Estimate	FY 15-16 Estimate	FY 16-17 Estimate
Personal Services	220,490	217,480	209,580	212,580	215,810	217,620
Contractual Services	31,640	42,570	43,080	43,630	44,200	44,750
Landfill Fees	95,000	95,000	88,890	94,940	101,190	107,520
Commodities	5,500	5,500	5,570	5,650	5,730	5,810
Vehicle Maint. & Replacem.	198,510	222,950	201,890	203,350	204,890	206,370
Other	31,830	54,200	54,900	55,640	56,420	57,170
	\$582,970	\$637,700	\$603,910	\$615,790	\$628,240	\$639,240

The projected costs for uncontained collection do not include any new FTE or vehicles. The vehicle replacement costs are also restored to full funding in FY12-13 to replenish the replacement fund.

EDUCATION AND ENFORCEMENT

The costs for Education and Enforcement include inspection and recycling education. This includes personnel costs for two employees, two vehicles, and other incidental program costs. The estimated expenses are shown in Table 5.

Table 5 – Education and Enforcement Expense Estimates

	FY 11-12 Actuals	FY 12-13 Estimate	FY 13-14 Estimate	FY 14-15 Estimate	FY 15-16 Estimate	FY 16-17 Estimate
Personal Services	148,190	150,270	169,070	170,760	172,930	173,860
Contractual Services	45,000	41,760	41,680	42,250	42,840	43,410
Commodities	2,950	2,350	2,370	2,390	2,410	2,430
Vehicle Maint. & Replacem.	22,760	22,940	25,010	25,220	25,440	25,650
Capital Outlay	0	0	4,400	4,400	4,400	4,400
Other	56,510	55,800	56,530	57,300	58,110	58,890
	\$275,410	\$273,120	\$299,060	\$302,320	\$306,130	\$308,640

The projected costs include a transfer to the sanitation capital fund to purchase an additional vehicle in future years.

CASH FLOW ANALYSIS

Table 6 displays the base projected revenue and revenue requirements for the sanitation fund for the five year study period.

Table 6 – Sanitation Fund Cash Flow Analysis

	FY 2011-12 Actuals	FY 2012-13 Budget	FY 2013-14 Estimates	FY 2014-15 Estimates	FY 2015-16 Estimates	FY 2016-17 Estimates
Sources:						
Beginning Balance	\$ 3,433,162	\$ 4,415,973	\$ 4,757,793	\$ 5,144,353	\$ 5,385,333	\$ 5,583,843
Revenue Under Existing Rates	4,881,604	4,897,200	4,961,680	5,029,910	5,101,590	5,170,630
Misc	11,819	8,150	9,630	9,980	8,890	9,810
Recycling Revenue Share	153,807	183,770	214,000	216,940	220,030	223,010
Commercial Permits	24,000	24,000	24,000	24,000	24,000	24,000
Interest	2,451	1,820	4,230	4,580	4,790	4,970
Sub-Total Revenue	5,073,681	5,114,940	5,213,540	5,285,410	5,359,300	5,432,420
Transfers-In						
Total Sources	\$ 8,506,843	\$ 9,530,913	\$ 9,971,333	\$ 10,429,763	\$ 10,744,633	\$ 11,016,263
Uses:						
Curbside Collection	3,232,490	3,862,300	3,924,010	4,126,320	4,226,420	4,288,780
Monthly Cost	13.96	14.75	14.80	15.39	15.55	15.57
Uncontained Collection	582,970	637,700	603,910	615,790	628,240	639,240
Monthly Cost	2.42	2.60	2.43	2.45	2.46	2.47
Enforcement & Education	275,410	273,120	299,060	302,320	306,130	308,640
Monthly Cost	1.14	1.12	1.21	1.20	1.20	1.19
Total Expenses	\$ 4,090,870	\$ 4,773,120	\$ 4,826,980	\$ 5,044,430	\$ 5,160,790	\$ 5,236,660
Total Cost per Month	17.52	18.47	18.44	19.04	19.21	19.24
Net Surplus/(Loss)	982,812	341,820	386,560	240,980	198,510	195,760
Estimated Ending Balance	4,415,973	4,757,793	5,144,353	5,385,333	5,583,843	5,779,603

When calculating the cost per month only recurring expenses are included. With the efficiencies, cost reductions and revenue enhancements made by Public Works' staff, the cash flow over the study period indicates that the current rate of \$20 should be sufficient to continue to fund the operation for the next few years and still provide for funding for the purchase of cans and equipment that can no longer be funded by development fees. This effort should help customers avoid an increase in monthly bills while also avoiding a substantial upfront contribution for homeowner's new to Avondale. A more detailed revenue and expense worksheet is included in Appendix B.

COST COMPONENTS

The cost of residential sanitation services tracked by the following categories: automated curbside collection, monthly uncontained collection and education and enforcement (recycling). Based on the total number of customers and recurring expenses estimated for the 2012-2013 fiscal year, the calculation of customer costs is shown in Table 7.

Table 7 – Customer Costs per Month

	Automated Collection	Uncontained Collection	Education/ Enforcement	Total
Total Costs	\$ 3,862,300	\$ 637,700	\$ 273,120	\$4,773,120
Total Bills	244,860 = 20,405 customers			
Monthly Cost per customer	\$ 14.75	\$ 2.60	\$ 1.12	\$ 18.47

The Curbside Automated Collection component accounts for roughly 80% of the sanitation program's costs. The Uncontained Collection services account for about 14% of the total costs. The costs of service are allocated proportionately among all customers since utilization of uncontained refuse collection by customers may vary from month to month. On average, 20% of residential customers use the uncontained collection services each month. If utilization of the uncontained refuse collection service increases, there will also be a corresponding increase in costs. Currently, the Education and Enforcement program cost is approximately 6% of the total.

RATE RECOMMENDATION

The cost of service allocations show that operating expenses are covered by the current rate charged per customer per month. Based on the available fund balance and reserve requirements, it is proposed that the fixed monthly base charge of \$20.00 for residential sanitation remain unchanged.

RATE COMPARISONS

As a measure of reasonableness, the proposed rates are compared to other Arizona municipalities' rates for the same service. As Table 8 indicates, the Avondale rate is very close to the average of the valley cities surveyed. All municipalities are providing recycling, regular refuse and uncontained trash collection.

Table 8 – Sanitation Rate Comparison with Valley Cities

Municipality	Rate	Recycling	Bulk Trash Collection
Phoenix	\$ 26.85	✓	Quarterly
Peoria	\$ 23.60	✓	Annually
Mesa	\$ 23.34	✓	Additional Fee
Goodyear	\$ 22.80	✓	Weekly
Average	\$ 20.26		
Avondale	\$ 20.00	✓	Monthly
Tempe	\$ 19.98	✓	Monthly
Buckeye	\$ 17.56	✓	Quarterly
Surprise	\$ 16.63	✓	Monthly
Glendale	\$ 16.30	✓	Monthly
Scottsdale	\$ 15.96	✓	Monthly

APPENDICES

Appendix A – Customer Bills Issued and Projections..... 9

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Appendix A – Customer Bills Issued & Projections

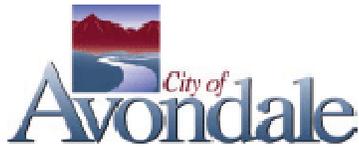
City of Avondale Sanitation Bills		July	August	September	October	November	December	January	February	March	April	May	June	Total Bills	Increase
Number of bills issued															
Fiscal Year															
2002	10,521	10,748	10,930	11,219	11,432	11,542	11,592	11,823	11,963	12,093	12,300	12,466	12,300	138,329	10,180
2003	12,940	12,493	12,640	12,805	13,087	12,801	9,728	9,855	12,861	12,994	13,227	13,078	13,227	148,509	20,867
2004	13,356	13,506	13,669	13,772	13,868	13,997	14,163	14,272	14,397	14,576	14,710	14,710	15,090	169,376	23,649
2005	15,270	15,348	15,542	15,705	15,868	16,013	16,148	16,313	16,462	16,605	16,792	16,959	16,959	193,025	19,941
2006	17,118	17,294	17,456	17,568	17,642	17,693	17,804	17,842	18,015	18,089	18,176	18,269	18,269	212,966	16,941
2007	18,765	18,740	18,919	19,070	19,150	19,209	19,232	19,337	19,361	19,553	19,259	19,259	19,312	229,907	16,941
2008	19,219	19,279	19,309	19,280	18,913	19,258	19,210	19,229	19,237	19,237	19,270	19,270	19,283	230,777	870
2009	19,258	19,227	19,253	19,251	19,211	19,247	19,251	19,206	19,206	19,212	19,337	19,333	19,385	231,171	394
2010	19,424	19,490	19,499	19,490	19,477	19,535	19,603	19,610	19,610	19,617	19,746	19,772	19,775	235,038	3,867
2011	19,855	19,881	19,821	19,833	19,836	19,770	19,781	19,806	19,806	19,831	19,832	19,840	19,860	237,946	2,908
2012	19,945	19,922	19,957	20,039	20,019	20,027	20,063	20,075	20,075	20,171	20,184	20,189	20,249	240,840	2,894
2013	20,273	20,297	20,321	20,345	20,369	20,393	20,417	20,441	20,441	20,465	20,489	20,513	20,537	244,860	4,020
2014	20,558	20,579	20,600	20,621	20,642	20,663	20,684	20,705	20,705	20,726	20,747	20,768	20,789	248,084	3,224
2015	20,815	20,841	20,867	20,893	20,919	20,945	20,971	20,997	20,997	21,023	21,049	21,075	21,101	251,496	3,412
2016	21,125	21,149	21,173	21,197	21,221	21,245	21,269	21,293	21,293	21,317	21,341	21,365	21,389	255,080	3,584
2017	21,412	21,436	21,460	21,484	21,508	21,532	21,556	21,580	21,580	21,604	21,628	21,652	21,676	258,532	3,452
2018	21,700	21,724	21,748	21,772	21,796	21,820	21,844	21,868	21,868	21,892	21,916	21,940	21,964	261,983	3,452

Appendix B – Cash Flow Detail

Sanitation Fund

Projected Revenues & Expenditures

	2012	2013	2014	2015	2016	2017
	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17
	Actuals	Budget	Estimates	Estimates	Estimates	Estimates
Sources:						
Beginning Balance	\$ 3,433,162	\$ 4,415,973	\$ 4,757,793	\$ 5,144,353	\$ 5,385,333	\$ 5,583,843
Revenue Under Existing Rates	4,881,604	4,897,200	4,961,680	5,029,910	5,101,590	5,170,630
Misc	11,819	8,150	9,630	9,980	8,890	9,810
Recycling Revenue Share	153,807	183,770	214,000	216,940	220,030	223,010
Commercial Permits	24,000	24,000	24,000	24,000	24,000	24,000
Interest	2,451	1,820	4,230	4,580	4,790	4,970
Sub-Total Revenue	5,073,681	5,114,940	5,213,540	5,285,410	5,359,300	5,432,420
Transfers-In						
Total Sources	\$ 8,506,843	\$ 9,530,913	\$ 9,971,333	\$ 10,429,763	\$ 10,744,633	\$ 11,016,263
Uses:						
Curbside Collection						
Personal Services	906,503	922,930	1,026,520	1,042,750	1,058,460	1,067,900
Contractual Services	41,972	48,660	49,290	49,980	50,690	51,380
Landfill Fees	513,709	525,000	593,710	634,120	675,860	718,150
Administrative Charges	553,370	468,180	475,070	481,960	488,850	490,840
Vehicle Maintenance	689,261	676,220	678,780	731,450	734,120	734,880
Facilities Maintenance	18,060	18,340	18,580	18,830	19,090	19,340
Commodities	145,826	153,300	211,560	241,610	244,230	246,830
Capital	-	200,000	50,000	50,000	75,000	75,000
Vehicle Replacement	301,800	537,760	504,540	555,370	555,370	555,370
Insurance/Risk Mgt	61,990	61,910	62,710	63,560	64,450	65,310
Contingency	-	250,000	253,250	256,690	260,300	263,780
Curbside Collection	3,232,490	3,862,300	3,924,010	4,126,320	4,226,420	4,288,780
Monthly Cost	13.96	14.75	14.80	15.39	15.55	15.57
Uncontained Collection						
Personal Services	220,490	217,480	209,580	212,580	215,810	217,620
Contractual Services	7,770	9,330	9,410	9,500	9,590	9,680
Landfill Fees	95,000	95,000	88,890	94,940	101,190	107,520
Administrative Charges	62,260	54,200	54,900	55,640	56,420	57,170
Vehicle Maintenance	97,070	106,510	107,890	109,350	110,890	112,370
Commodities	5,500	5,500	5,570	5,650	5,730	5,810
Capital	-	-	-	-	-	-
Vehicle Replacement	71,010	116,440	94,000	94,000	94,000	94,000
Insurance	23,870	33,240	33,670	34,130	34,610	35,070
Contingency	-	-	-	-	-	-
Uncontained Collection	582,970	637,700	603,910	615,790	628,240	639,240
Monthly Cost	2.42	2.60	2.43	2.45	2.46	2.47
Enforcement Education						
Personal Services	148,190	150,270	169,070	170,760	172,930	173,860
Contractual Services	25,330	25,310	25,020	25,360	25,710	26,050
Administrative Charges	58,390	55,800	56,530	57,300	58,110	58,890
Vehicle Maintenance	12,540	15,000	15,190	15,400	15,620	15,830
Commodities	2,950	2,350	2,370	2,390	2,410	2,430
Capital	-	-	4,400	4,400	4,400	4,400
Vehicle Replacement	8,340	7,940	9,820	9,820	9,820	9,820
Insurance	19,670	16,450	16,660	16,890	17,130	17,360
Contingency	-	-	-	-	-	-
Enforcement & Education	275,410	273,120	299,060	302,320	306,130	308,640
Monthly Cost	1.14	1.12	1.21	1.20	1.20	1.19
Total Expenses	\$ 4,090,870	\$ 4,773,120	\$ 4,826,980	\$ 5,044,430	\$ 5,160,790	\$ 5,236,660
Total Cost per Month	17.52	18.47	18.44	19.04	19.21	19.24
Net Surplus/(Loss)	982,812	341,820	386,560	240,980	198,510	195,760
Estimated Ending Balance	4,415,973	4,757,793	5,144,353	5,385,333	5,583,843	5,779,603



CITY COUNCIL REPORT

SUBJECT:
Enhanced Call Verification - Initial 3 Month Update

MEETING DATE:
October 8, 2012

TO: Mayor and Council
FROM: Kevin Kotsur, Police Chief (623) 333-7201
THROUGH: Charlie McClendon, City Manager

PURPOSE:

Staff is providing City Council with the initial three month report detailing initial results of the Enhanced Call Verification Program and the partnership with CryWolf, our third party vendor, in regards to the Alarm Ordinance and officer calls for service. This item is for information and discussion purposes only.

BACKGROUND:

In early 2012, after receiving the approval from City Council, the Police Department entered into discussions with CryWolf to implement the Enhanced Call Verification Program. After months of preparation, the new program began on May 01, 2012.

As a refresher, points of interest include:

- Enhanced Call Verification: Requires the Alarm Monitoring Company to attempt contact with the alarm owner using two or more different telephone numbers before contacting the Police Department when an alarm is activated.

Fee Schedule

- \$25 initial registration fee
- \$25 annual renewal fee
- \$150 third false alarm (within any consecutive 365 calendar day period)
- \$200 fourth false alarm (within any consecutive 365 calendar day period)
- \$250 fifth or more false alarms (within any consecutive 365 calendar day period)
- First two false alarms (within any consecutive 365 calendar day period): Written notification to subscriber and the alarm business.

The initial three month reporting period is between May 01, 2012 and July 31, 2012.

**Alarm Calls for Service Comparison
(May 01 - July 31, 2011 and May 01 - July 31, 2012)**

Time Frame	Total Alarm Calls for Service	Total False Alarms	Total Actual Alarms	Percentage of Total False Alarms
May 01 - July 31, 2011	748	742	6	99%
May 01- July 31, 2012	535	525	10	98%

Actual Alarm Breakdown (May 01 - July 31, 2011)

Residential
3 Criminal Damage

Business
3 Unsecured

Actual Alarm Breakdown (May 01 - July 31, 2012)

Residential
4 Forced, 1 Unsecured
2 Back door forced, 1 garage door forced, 1 front door kick

Business/Commercial
5 Forced
3 Front door forced, 2 through drywall (same location)

Registration Fees

Number of Active Accounts Paid	Number of Accounts Pending (Not Paid)
300 at \$25 = \$7500	389 at \$25 = \$9725

False Alarm Fees

Total Fees Charged for False Alarms	Total Outstanding Fees from False Alarms	Total False Alarm Fees Collected
\$7950	\$6500	\$1450

Appeals

Residential = 3
False alarm assessed to alarm company
One alarm assessed to homeowner, three alarms assessed to alarm company
Homeowner responsible

Business = 1
False alarms were assessed to the alarm company

BUDGETARY IMPACT:

None

RECOMMENDATION:

Staff recommends that we continue to monitor our alarm calls for service and our partnership with CryWolf to note the results to determine if a decrease in police response to false alarm calls for service can be established.

ATTACHMENTS:

[Click to download](#)

No Attachments Available