

WATER RATE STUDY

CITY OF SALIDA

Revised March 2011

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LIST OF ACRONYMS

DIP	Ductile Iron Pipe
EQR	Equivalent Residential Unit
GPM	Gallons per Minute
In.	Inches
K-Gal	Thousands of Gallons
LF	Linear foot
MG	Million Gallons
Mi.	Miles
O&M	Operations and Maintenance
PVC	Polyvinyl chloride (“plastic”) pipe
SGM	Schmueser Gordon Meyer, Inc.
The City	The City of Salida
WTP	Water Treatment Plant

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Report Summary

The purpose of this report is to provide analysis results for the City of Salida's current water service rates to recommend the rate adjustments needed to meet anticipated expenditures. This report summarizes current and anticipated expenditures associated with operations and maintenance of the City's Water Distribution System as well as the water treatment plant (WTP) including long-term recommended operations and maintenance (O&M) costs and identified upcoming capital projects, in addition to known budgeted and historical expenses. This report is also created in conjunction with an overall water rates spreadsheet providing the City Staff with the tools to make appropriate future rate adjustments beyond the initial immediate recommended rate adjustments. Finally, recommendations are made for all components of the water rates including the service charge base rate, residential maintenance fee, commercial/industrial water demand charge and water usage charge to meet all of the identified expenditures including several options to weigh the importance between the different components. The rate study factored in estimates of all known costs. It should be noted that other unexpected costs could result in additional need for rate increases. As well as other capital projects not anticipated in this study may drive further increases.

1.0 Executive Summary

Water service is provided to residents and property owners in Salida through an enterprise fund. This accounting structure is used for business-type activities. Water operations are not operated as a governmental fund supported by tax dollars. Revenue generated from the business activity (providing water) needs to be sufficient to pay for that activity. It is not a profit activity and revenues and expenditures need to balance appropriately. It does cost the City over \$3.00 per thousand gallons actual cost to treat and provide water to the customers.

The City has followed a revenue model whereby quarterly fees pay for operations and routine maintenance or upgrades; development fees pay for capital improvements and debt service on those improvements. In recent years, revenue has not kept pace with the capital needs and debt service requirements. The City made substantial investments in capital infrastructure including the high zone water tank, new transmission lines, upgrades to the treatment plant, the purchase and installation of radio-read meters and acquisition of water rights. Strong development activity in the mid 2000's paid for a substantial portion of the capital improvements; however, it was not sufficient to fully pay for all improvements. In addition, aging facilities are continuing to require upgrades and maintenance to extend their service period. Development has now slowed substantially and is not sufficient to pay existing debt service or cover capital requirements. In 2010 the City depleted reserves and obtained a commitment for additional debt to pay for capital improvements of the Galleries Water Tank. Future capital requirements need to be paid for with water service fees and not depend on development fees.

This rate study is conducted with the goal of determining reasonable rates based on actual water service charges and have included significant input from City Staff as well as elected officials and a concurrent ongoing capital improvement plan.

Rates need to be raised to generate sufficient revenue to pay for current operating expenditures, debt service and capital requirements. Council has also considered whether or not rates need to be sufficiently increased to begin rebuilding reserves. Future development fees will be used to add to reserves. The City's goal is to operate the water system efficiently and design a rate structure whereby users of the water system share in its cost of operations in a fair and equitable manner. No one welcomes rate increases, but the culmination of several years (without sufficiently increasing these rates) proves that the City needs to substantially increase rates in order to cover costs because available reserves have been completely depleted.

The revenue structure includes two types of fixed components and a third variable component on each quarterly bill.

- A flat service (or "ready to serve") fee.
- A maintenance fee (for residential customers) or a demand fee (for commercial customers).
- Charges per thousands of gallons of water used during the quarter.

Many communities bill for water using "tiered rates." The City will begin this practice as well. This method of billing creates an incentive for water conservation and fairly distributes costs between high and low water users. Under this method of billing, per gallon water usage charges increase if more than a certain number of gallons are used each quarter.

Although the City needs to generate the fixed amount of total revenue, Council may choose to structure the rates differently to achieve the same result. Three alternatives are presented for council's consideration:

- Alternative A raises the service and maintenance fees more moderately than the per thousand gallons usage fee (40:60 model)
- Alternative B raises the service and maintenance fees by a greater percentage than the per thousand gallon usage fee (50:50 model)
- Alternative C raises the service fee substantially and the maintenance fee moderately; the per gallon usage fees are relatively unchanged except for the "high usage" category (60:40 model)
- Alternative D uses B's user rates and C's fixed rates to increase rates sufficient enough to add an estimated \$100,000 to \$150,000 to reserves.

The existing rate structure generates revenue at a ratio of roughly 40:60 from fixed fees versus usage. By increasing the service and maintenance fees by a greater percentage than the per thousand gallon usage fee, the City would achieve a more reliable and predictable revenue stream.

2.0 Components Involved in Rate Study

2.1 Existing Rate Summary

The City has been operating on a rate plan outlined in section 13-3-220 of the City Code effective as of April 1, 2007. This plan contained four different divisions of revenues that combine to pay for the O&M of the water related expenditures.

- Water Service Charge (or Base Rate for both residential and commercial/industrial)
- Residential Maintenance Fee
- Commercial/Industrial Water Demand Fee
- Water Usage Charge (for both residential and commercial/industrial)

All four components of water revenues are set in the code to increase annually across the board per the following table:

Table 2.1 - Water Rate Increase Per Current 13-3-220

Year	% Increase
2008	3%
2009	3%
2010	3%
2011	5%
2012	5%

Following the increases outlined in the code the historical rates have been as follows:

Table 2.2 - Historical Rates

Quarterly Charges for Service				
Water Quarterly Charges – Detail Rate Schedule	2008	2009	2010	Q1 2011
Residential	\$	\$	\$	\$
Service charge - Residential	17.00	17.50	18.03	18.93
Service charge - 2nd living unit	17.00	17.50	18.03	18.93
Maintenance Charge per quarter	12.36	12.73	13.11	13.77
Commercial / Industrial	\$	\$	\$	\$
3/4 inch	17.00	17.50	18.03	18.93
1 inch line	20.39	21.01	21.64	22.72
1.5 inch line	28.89	29.76	30.65	32.18
2 inch line	40.79	42.01	43.27	45.44
3 inch line	70.25	72.35	74.52	78.25
4 inch line	113.30	116.70	120.20	126.21
Usage charge*	\$	\$	\$	\$
per 1,000 gallons of water	1.11	1.15	1.18	1.24
<i>* Residential only - first 3,000 gallons/qtr exempt</i>				

Demand charge for commercial	\$	\$	\$	\$
Up to 100,000 gallons	20.60	21.22	21.85	22.95
101,000-500,000 gallons	41.20	42.44	43.71	45.89
501,000-1,000,000 gallons	82.40	84.87	87.42	91.79
Over 1,000,000 gallons	123.60	127.31	131.13	137.68
Out of City limits	2x	2x	2x	2x
Annual Percentage increase - water	3%	3%	3%	5%

Some of the philosophies behind the existing rate structures are:

- A separate maintenance fee from the water service charge allows the City to maintain a separate fee that is sized respectively to the amount of ongoing maintenance required at the WTP and distribution system
- The water usage charge per 1,000 gallons used is in place to fairly distribute cost relative to how much a customer uses and also helps promote water conservation
- The water service charge (base rate fixed fee) provides a consistent, predictable and reliable revenue source
- The water usage charge does not apply until more then 3,000 gallons per quarter are used means that everyone gets some water at the base rate fixed fee only but typical house holds will use more than this
- The larger commercial/industrial water demand fee than the residential maintenance fee puts a little more of the burden on commercial/industrial customers than the residential customers
- Currently, the total revenue from the water rates (about 40%) comes from the fixed fees and about 60% comes from water usage, which places a stronger emphasis on the water usage portion

2.2 Need for Rate Increase

Even with the above historical rate increases the City has been unable to keep up with the expenditures. The combination of rising cost of services, significant capital improvement projects over the past few years and the stunted growth has prevented the City from keeping up with the rising costs. This has not been a single year issue, but rather the culmination of more than three years of water fund operations. Table 2.3 shows historical revenues and expenditures for the last 3 years.

Table 2.3 - Historical Revenues/Expenditures

WATER FUND	2007	2008	2009	2010	2011
Operating Revenues	\$ 581,562	\$ 711,398	\$ 826,492	\$ 857,535	\$ 871,240
Capital Revenues	\$ 255,405	\$ 389,719	\$ 378,177	\$ 134,878	\$ 136,488
Other Revenues	\$ 170,323	\$ 674,080	\$ 311,243	\$ 33,380	\$ 49,528
Total Revenues	\$ 1,007,290	\$ 1,775,197	\$ 1,515,912	\$ 1,025,793	\$ 1,057,256
Operating Expenditures	\$ 423,104	\$ 520,323	\$ 603,442	\$ 533,710	\$ 651,669
Capital Expenditures	\$ 707,690	\$ 881,153	\$ 1,715,414	\$ 1,061,373	\$ 312,491
Dept Expenditures	\$ 357,118	\$ 280,402	\$ 590,664	\$ 1,275,657	\$ 469,614
Total Expenditures	\$1,487,912	\$1,681,878	\$2,909,520	\$2,870,740	\$1,433,773
Over (Under)	(\$480,622)	\$93,319	(\$1,393,609)	(\$1,844,948)	(376,517)

Water Fund reserves have been completely diminished before 2011 (in fact funds from the sewer fund were borrowed at the end of 2010). With the standard 5% increase for the 2011 budget, the final net revenue will still be "in the red" at approximately \$650,000.

In summary, the City's current water rate problem has been ongoing and will now take a substantial increase for a more balanced operation.

2.3 Proposed Changes to the Rate Structure

As seen in the previous section each component of a rate structure has a related philosophy or emphasis associated with it, some of which have quantitative components tied to them. For example, the more water customers use (regardless of the capacities available) the higher the treatment cost and wear and tear on parts (but many of these are qualitative issues); therefore the rate structure for a specific community needs to be in line with the values, beliefs and needs of that specific community. Over the past several months there have been many conversations between City Staff, SGM and elected officials. SGM and City Staff has combined the information obtained in such discussions to propose minor changes to the rate structure itself—Independently of the rates.

In general, due to the idea that rates will have to increase substantially to meet existing expenditures, it was decided to maintain the core of the rate structure with the same four fees/charges.

- Water Service Charge (or Base Rate for both residential and commercial/industrial)
- Residential Maintenance Fee
- Commercial/Industrial Water Demand Fee
- Water Usage Charge (for both residential and commercial/industrial)

The first three are fixed and the last one (water usage) is variable and dependent on how much water the customer uses.

There have been various discussions about eliminating the maintenance and water demand fees and simplifying it to one fixed and one variable fee. The main arguments behind this are its simplicity, along with the fact that the City currently does not have the size of the maintenance water demand fees relative to the maintenance/replacement cost. In the end it was decided that they would continue to buffer the "change shock", and provide additional detail about the use of revenue.

The second significant item of discussion was where to base the emphasis of the rates—on the water usage or the fixed base service charge. The majority of Colorado water suppliers have been trying to put a larger emphasis on water usage over the past several years to promote water conservation in light of the West's ever increasing water shortages. One of the main tools that has been used for this are water usage "tiers" that have different water usage rates per 1000 gallons of water used. For example water may only cost \$1.00 per 1000 gallons of water used up to 10,000 gallons per month (tier one) but then cost \$2.00 per 1000 gallons for all water used between 10,000 and 20,000 per month (tier two). Many water suppliers have as many as four to six tiers. The advantages of this method are that it distributes the higher costs to the larger water users as well as gives incentive to conserve water. Disadvantages are that it makes it harder for both the customer and supplier to

predict bills (customers like knowing just a fixed fee, suppliers like to be able to rely on the revenue), they required additional accounting and billing set up work, and if to expensive of tiers are implemented it can cause too much of a conservation and also effect the suppliers budget. In addition Salida has more than sufficient water resources for its exiting population and projected growth.

On the flip side there were discussions of providing more “free” water and or fully eliminating the variable fee and just having a fixed fee. This gives the ability to very accurately predict revenues and then adjust them to easily match estimated expenditures. It does not however give any ability to control how much water is used and does not give any tool to fairly distribute larger cost to larger water users and lower cost to lower water users.

In light of these discussions two things were done with the idea to utilize the best qualities from both sides:

1. Two tiers were added in to promote water conservation and fairness
2. The first tier was set to start at 6,000 gallons per quarter before any water usage fees kick in (it was only 3,000 gallons per quarter before; the 6,000 gallons per quarter, double the previous amount included in the base fee, is a reasonable level for a somewhat conservative individual customer to actually be at or under giving the lowest water users the possibility to only have the fixed fee)

Table 2.4 - Proposed Tiers

Gallons per Quarter	Residential	Commercial
Up to 6,000	No water usage charge	Tier 1 rate
6,000 to 40,000	Tier 1 rate	Tier 1 rate
40,001 +	Tier 2 rate	Tier 2 rate

The last main discussion item was how to proportion the rate increase on both the fixed fees and the variable water usage fees. They could be simply raised across the board to maintain the historic 40% of revenues out of the fixed fees and 60% out of the variable water usage. Or bump up the emphasis on the fixed fees so the percent of revenues are 50:50. Or push the emphasis on fixed fees way up to 60:40 cut of the total revenues. At the end of the day the same bottom line needs to be achieved so revenues cover expenditures but how the rates are weighed can be moved around and this will manifest itself if how the bills look and what types of customers more of the weight gets distributed to. Today approximately 20% of customers use 18,000 gallons per quarter or less, and approximately 20% (25% of commercial customers) use more then 40,000 or more, with 60% within the tier 1 bracket.

In the final Revenues and Recommendations section we will give three alternatives

- Alternative A (40:60 model)
- Alternative B (50:50 model)
- Alternative C (60:40 model)
- Alternative D (54:46 model)

Under these scenarios a portion of the \$3.00 per thousand gallons of water is covered by the fixed fees enabling the City to charge less for actual gallons used.

2.4 Capital and Development Fees Discussion

It is the typical industry standard that “development pays its own way” and therefore it is standard that water rates are to cover operations and maintenance and new development pays for capital improvements through development fees. This idea makes sense so that existing customers are not paying for additional infrastructure for new customers. One of the biggest issues however is the confusion that arises from definition of “Capital” and what would be considered a capital project that new development would pay for. If one was to scan across different municipalities they would find many different definitions of a Capital project some saying it has to be new construction, some saying it has to be over a particular dollar amount.

In reality the “Capital Improvements” that should be paid for by system development fees should only be “Expansion Capital Improvements” For example if a WTP is simply being expanded, say a new branch is being added, simply for more capacity then that project theoretically should be paid for fully by development fees (and if enough reserves are not built up at the time of the project for the debt service for that project). New distribution mains that only serve new areas or additional water rights would also fall into this category.

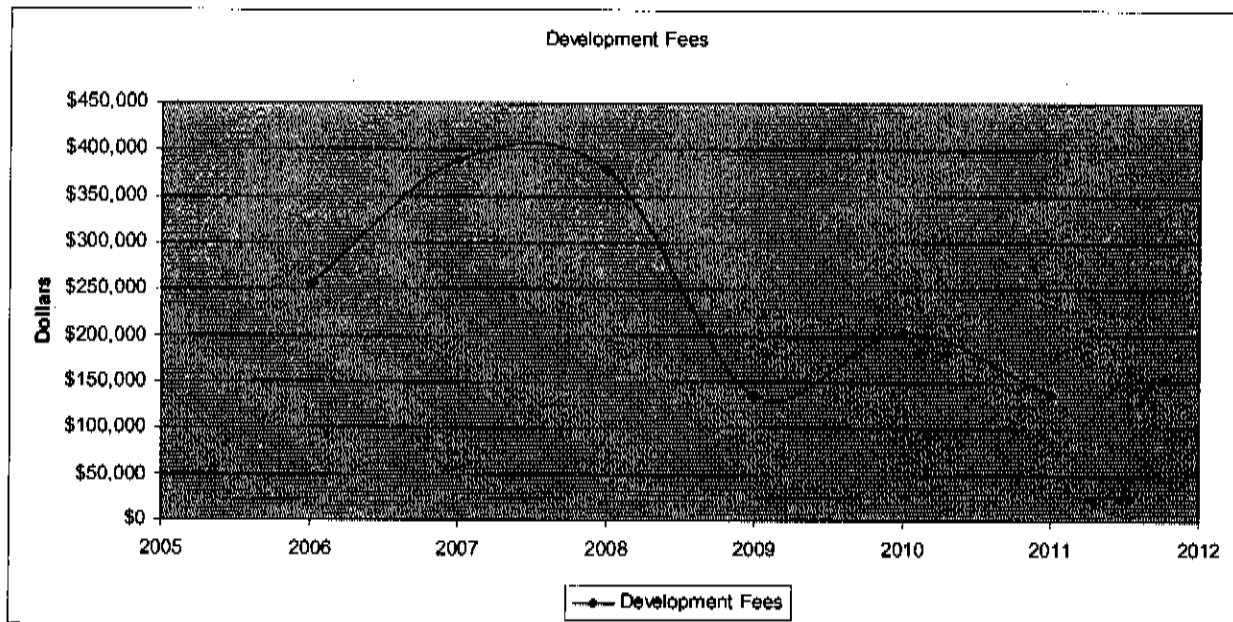
However, the replacement of an existing main because of old age within a distribution system that serves existing customers should not be paid for by development fees but by the existing users. In Salida’s case this is what the maintenance and demand fees should be used for. Other assets as well or even a full WTP that needs to be replaced (say you were completely building a new WTP but not increasing capacity at all) due to old age, wear and tear, decay, or even changes in technology or regulation would also fall under this category. But often all of such projects come out of a “Capital” budget and many think they should try to pay for this primarily off of development fees. Of course many projects are not this straight forward and should require an appropriate mix of existing user fees and development fees, new WTP that replaces an old one and adds capacity or the upsizing of an old dated water line that will serve new and existing customers.

The engineering industry has tried to alleviate this problem by calling funds set aside to replace aging or outdated infrastructure as depreciation funds however this causes conflicts in the financing industry with the definition of depreciation. So for this report we will separate them out as capacity or expansion projects versus capital maintenance or replacement projects versus ongoing routine maintenance activities that also require funds.

In the past the City of Salida has followed this traditional method relying on system development fees to pay for “Capital Improvement” projects and substantial development during the mid 2000’s did pay for a substantial portion Capital projects. Development and growth has significantly dropped off over the past two years and the City has determined that it not only relied too much on development fees but for the next few years with the volatility of the economy that it can not rely at all on development fees.

Therefore the City has made the decision that it will not count on any development fees in the rate study and that all capital projects in the next few years are not growth or capacity related but asset maintenance and replacement and needs to be paid for out of the rates and more specifically the maintenance and demand charges. None of the projects on the CIP list are for expansion. All represent upgrades or replacements of existing system.

Figure 2.1 - Historical Development Fees



As can be seen in the above chart development fees have dropped off significantly and show no signs of significant rebound anytime soon, but it is also not reasonable to assume there will be no development fees. In fact for the 2011 budget approximately \$175,000 in development fees was anticipated. However they will not be included in the evaluation of the rate study and all actual development fees that come in will be set aside in reserves for true expansion capital projects.

As can be seen later in the report under the capital projects section this rate study is being completed in concurrence with a water capital improvement plan that is determining the future water capital needs in the next ten years. One of the items in approximately 8-10 years is significant replacement of the flocculator in the WTP and this comes in two options.

1. 2 MGD capacity replacement at approximately \$1,014,000
2. 4 MGD capacity replacement doubling the capacity at approximately \$1,520,000

For this rate study and determining how to increase rates in order to cover expenditures it needs to be anticipated that in 8-10 years \$1,000,000 needs to be spent on the WTP to upgrade major aging equipment and this is independent of any kind of growth. If growth does not happen then only the 2 MGD replacement is needed and the existing customers need to cover that cost (and or debt service). If growth does happen and a 4 MGD replacement is needed then the existing customers still need to cover approximately \$1,000,000 but the remaining \$520,000 would be covered by the development fees that

have been set aside as it was not included into the rate study for the operations and maintenance type capital improvement projects.

3.0 Existing Infrastructure Summary

This rate study is being produced concurrently with a water capital improvement plan (CIP). The CIP has the extended detail on the existing infrastructure and its required needs.

3.1 Source of Supply

The City currently has three main sources of water supply.

- South Arkansas (Little River) surface water. This water is directed to the WTP through the Harrington Ditch, treated and distributed through the distribution system.
- The infiltration galleries, groundwater source. This water is collected in an infiltration gallery and simply chlorinated and pumped into the distribution system, not ever going through the WTP.
- The pasquale springs groundwater source. This is also simply chlorinated and put into the distribution system without going through the WTP.

There has been much discussion on looking into a well field water source and more detail on this can be found in the CIP; this does however have the potential to significantly rearrange how the City treats and supplies water also having a big effect on the rates no longer needing the WTP to treat surface water. For now it is assumed that funds are spent on the feasibility study for this alternative but nothing beyond that.

3.2 Water Storage

The City currently has the possibility for approximately 4.5 MG of total water storage in various above-ground and below ground tanks. These tanks have been and are a large portion of the resent and ongoing capital projects. Table 3.1 below summarizes the City's water storage facilities.

Table 3.1 - Water Storage Summary

Tank	Capacity (MG)	Condition
Airport Tank	1.0	Newer, Glass line
Gravity feed Tank	1.0	Concrete
Tenderfoot	1.0	Not used, needs Telemetry work
Galleries Tank	1.5	Currently being relined
Small Pasquale Springs Tank	Unknown Small	Needs to be relined

3.3 Transmission

Potable water is distributed to City customers through approximately 42 mi. of piping. Estimated distribution pipe size varies from 4-inch to 16-inch and includes primarily ductile iron (DIP) with some older galvanized steel pipes. The approximate installation period of the oldest operational pipe is before the 1950's. It is unknown how much is old cast iron pipe and it is unknown how much at this time is more then 50 years old and at the end of its life cycle. It is generally accepted that the life of DIP water line is 50 years, however it is often pushed longer. Table 3.2 provides linear foot estimates for pipes.

Table 3.2 - Distribution Pipe Summary

Material	Size (in.)	Total Length of Pipe in Distribution System (LF)
DIP or Cast Iron	4	67,604
	6	25,200
	8	37,160
	10	13,500
	16	76,400

4" and to some extent 6" pipe is generally considered too small for any portion of distribution system. It is currently industry standard to not install less than 8" pipe for fire flow requirements in any new construction (with the exception that short isolated sections to a few users can be 6" but not part of the main distribution system. Therefore most anytime, such as on Sackett Street, if old smaller line is replaced it is upsized to a minimum of 8" to meet current fire flow requirements.

4.0 Expenditures

The City's water distribution system expenditures were estimated based on staff input, recent water fund budgets, CIP, and recent maintenance costs. Expenditures are broken up into the following categories:

- Plant Operation, Maintenance and Repair
- Management and Administrative
- Public Works (distribution system) Operation, Maintenance and Repair
- Anticipated Capital Projects
- Existing Dept Service

4.1 Operations, Maintenance and Repair

Expenses associated with operation, maintenance and repair of the system were determined for each the water treatment plant side and the distribution system side (responsibility of the Public Works Department). Staff salaries and related expenses are included as well as the share of equipment general operating equipment parts and supplies. Not included in this portion are larger maintenance/replacement capital cost such as line or pump replacement. They are included in the Anticipated Capital Projects section

Cost estimates for this study are based on the City's actual historical costs. A 3% annual inflation factor for operating expenditures was factored into the model. The inflation % is one of the input factors into the model so it can be adjusted easily to actual values in the future.

A summary of the anticipated expenses can be seen in the appendix models.

4.2 Management and Administrative

Management and administrative costs are primarily related to billing activities, obtaining capital financing, processing new service applications, insurance coverage, and administrating the utilities codes such costs include expenditures related to staff salaries and overhead, professional services and source water rights and development. They have been provided by City staff and are based on past actual financial data. No additional staff is anticipated to be required in the scope of this rate study.

4.3 Upcoming Capital Projects

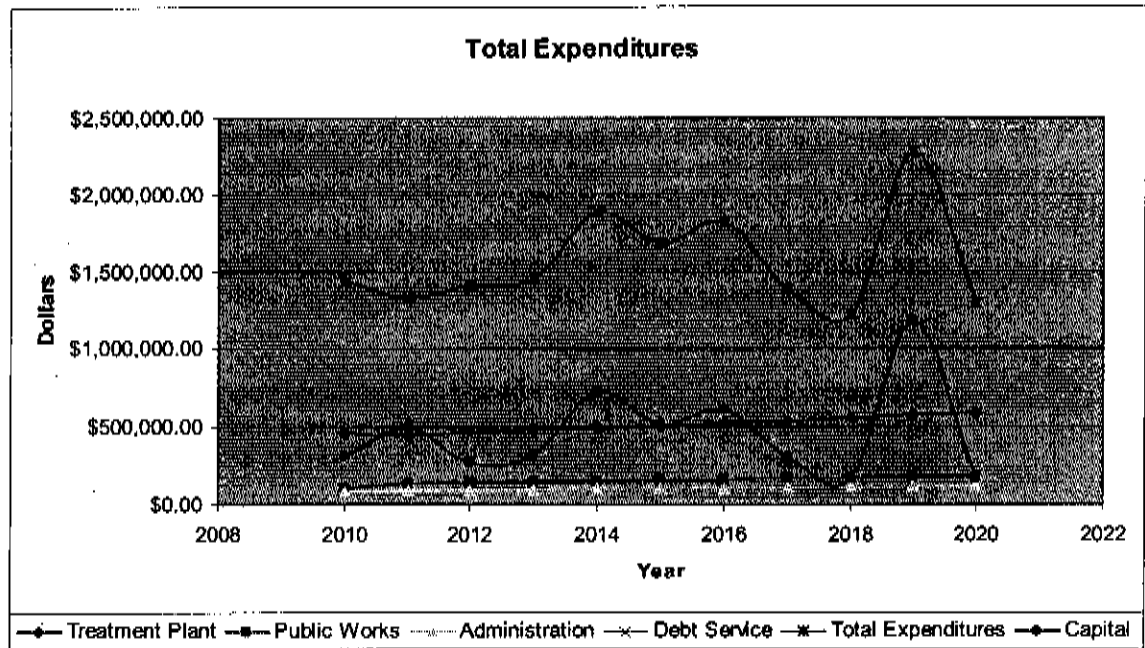
Upcoming capital projects have been determined with assistance from City staff and are looked at in more detail in the CIP. Appendix C has the table of all anticipated upcoming capital projects. It should be noted that cost for waterline upgrades to meet fire flow demands were omitted from the list at this time pending data resolution. There is a line item place holder but this needs to be updated as better information is obtained.

4.4 Total Annual Expenditures

The anticipated total annual expenditures for the City's water system are represented as the sum of all costs associated with Operations, Maintenance and Repair,

Management and Administrative, Upcoming Capital Projects and Debt services. Such costs average approximately \$1.4 million annually based upon current levels of billed water usage, it costs the City just over \$3.00 per thousand gallons produced and delivered.

Figure 4.1 - Total Estimated Expenditures



There are three important factors in the above chart to point out. First, in 2011 the total net expenditures take a noticeable drop even though even though all the individual line item expenditures increase. This is due to an \$525,000 intergovernmental funding source, a loan, primarily set aside for storage tank liner costs and other capital projects. It is possible that additional such funding sources could be available in the future for other projects but this can not be anticipated. Debt coverage ratios are also unlikely to be met for water operations.

Secondly there is a huge increase for 2014, 2015 and 2016. This is due to water treatment plant upgrades identified in the CIP. The reserves would not be there to fully fund these capital projects by 2014 with out population growth so it may have to require a loan and or pushing it off to a later date. Please see the Appendix for a detail spreadsheet of anticipated upcoming capital projects.

Next is the drop in the next expenditures in 2017. This can be seen as a direct relationship to the drop in the Debt Service at that time. This will help alleviate future rate increase needs at that time. Last is the significant spike in 2019, this is for \$1 million dollar plus water treatment plant replacement project.

5.0 Revenues and Recommendations

5.1 2011 Revenues

Revenues allow the City to ensure delivery of adequate, high-quality water to its customers and offset the City's water distribution system expenditures. Revenues typically come from both non-service fee sources, as well as standard quarterly service fees. As noted above if all components of the water rate are only increased by 5% that would put the 2011 year end revenue/expenditure balance at approximately a negative \$650,000 and reserves have already been completely depleted.

Per the recommended rate structure changes we are providing three options of rate increase to balance revenues with expenditures for 2011. All of the three options have more or less the same City with water fund bottom line but each of the three distribute them differently.

Table 5.1 – Rate Increase Options

Quarterly Charges for Water Services	Alternatives			
Residential Service Charges	A	B	C	D
Service charge - Residential	\$ 28.00	\$ 39.00	\$ 49.00	\$ 49.00
Service charge - 2nd living unit	\$ 28.00	\$ 39.00	\$ 49.00	\$ 49.00
Maintenance charge per quarter	\$ 16.00	\$ 17.00	\$ 17.00	\$ 17.00
Commercial / Industrial	A	B	C	C
3/4 inch	\$ 28.00	\$ 39.00	\$ 49.00	\$ 49.00
1 inch line	\$ 37.24	\$ 51.87	\$ 65.17	\$ 65.17
1.5 inch line	\$ 56.00	\$ 78.00	\$ 98.00	\$ 98.00
2 inch line	\$ 74.48	\$ 103.74	\$ 130.34	\$ 130.34
3 inch line	\$ 111.72	\$ 155.61	\$ 195.51	\$ 195.51
4 inch line	\$ 148.96	\$ 207.48	\$ 260.68	\$ 260.68
Usage charge	A	B	C	C
Tier I (up to 40,000 gallons/qtr) *	\$ 1.85	\$ 1.50	\$ 1.25	\$ 1.50
Tier II (over 40,000 gallons/qtr)	\$ 2.25	\$ 2.00	\$ 1.50	\$ 2.00

*Residential only - first 6,000 gallons/qtr exempt

Demand charge for commercial

Up to 100,000 gallons	\$ 16.00	\$ 17.00	\$ 17.00	\$ 17.00
101,000-500,000 gallons	\$ 40.00	\$ 42.50	\$ 42.50	\$ 42.50
501,000-1,000,000 gallons	\$ 80.00	\$ 85.00	\$ 85.00	\$ 85.00
Over 1,000,000 gallons	\$ 160.00	\$ 170.00	\$ 170.00	\$ 170.00
Out of City Limits	2x	2x	2x	2x
Base Fee : Usage Fee Ratio	40:60	50:50	60:40	54:46

These three options increase the fixed fee rates considerably but they also double the amount of water that is included in the fixed fee rate.

In evaluating the rate increase it is important to also understand how the potential rates compare to other Colorado Communities. It is not just Salida but most all communities that have to look at significant water rate increases. In the table below all rates are current updated for 2011 rates. The exception are the two lower rate communities, Gunnison and Alamosa which are January 2010 rates and it is unknown if these two communities are currently looking at rate increases.

Table 5.2 – Rates in other Communities

Comparable Community Rates	Quarterly Base Fee *	Gallons Included In Base Fee	# of Tiers	Tier One Range gallons	Cost of Tier One Per 1,000 gallons	Typical Residential Using 30,000 per Quarter
Gunnison	\$12.63	None	Three	0-5,000	\$1.46	\$57.93
Buena Vista**	\$82.02	15,000	One	15,000+	\$2.19	\$114.87
Canon City***	\$27.90	None	Three	0-12,000	\$1.30	\$84.85
Alamosa	\$15.60	None	Three	0-8,000	\$1.10	\$49.80
Crested Butte	\$66.00	24,000	Six	24,000-39,000	\$2.85	\$83.10
Roaring Fork Water and Sanitation District	\$66.00	None	Four	0-31,500	\$1.70	\$117.00
Town of Basalt	\$51.00	None	Four	0-31,500	\$1.60	\$99.00
Existing 2011 Salida	\$32.70	3,000	One	3,000+	\$1.24	\$66.18
Salida Option A	\$44.00	6000	Two	6,000-40,000	\$1.85	\$88.40
Salida Option B	\$56.00	6000	Two	6,000-40,000	\$1.50	\$92.00
Salida Option C	\$66.00	6000	Two	6,000-40,000	\$1.25	\$96.00
Salida Option D	\$66.00	6000	Two	6,000-40,000	\$1.50	\$102.00

*Many communities bill monthly but for this table all are compared per Quarter

**Buena Vista has a Senior Citizen discounted rate of approximately 75%

***Canon City is the only community that has a separate base fee and usage fee for commercial

One of the important issues the above table highlights is the differences between the proposed options A, B and C. As more emphasis is put on the fix fee rather than the water usage from option A to C the quarterly increase for the typical residential user is about \$4.00 per quarter. Again all three alternatives produce the same amount of total revenue for the City but distribute it differently between different types of customers. Option C with higher fixed fee and lower water usage moves more of the weight to all customers evenly but provides a more reliable and predictable income regardless of water usage. Option A puts more weight on high water users having them pay for the more water that they are using, but is a less stable source of revenue (a high water user with a high bill could try harder to use less water, also an increase in % of second or part time home owners would also have a negative impact on revenues decreasing the typical amount of water used per customer).

5.2 Additional Recommendations

Annual Rate Increase beyond 2011

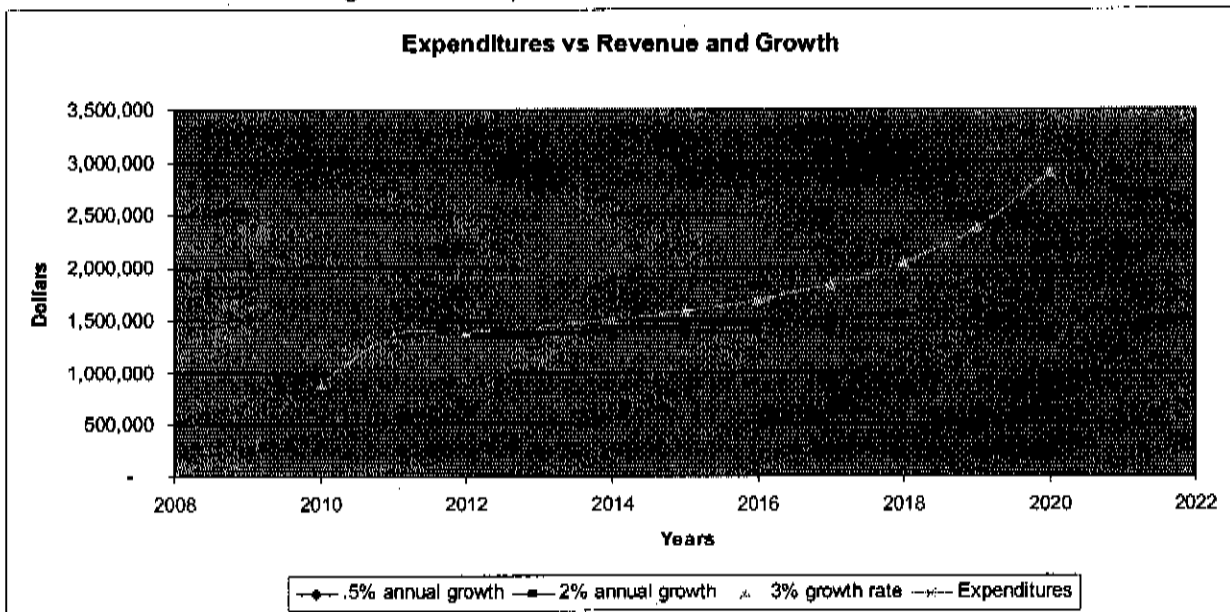
Above are the three alternatives for rate increases in 2011, but it is important to look out farther then that into 2020. The hard part is the predictability of future revenues becomes

much more difficult to predict. The hardest component to predict is the population (customer) growth.

Since the 1950 Salida has experience decades of large 20-30% growth followed by decades of slight decline and it is anticipated that for the next 10 years growth should be fairly flat.

The requirement for rate increases beyond 2011 depends significantly on the growth rate. At a growth rate of between 2-3% the rate is sustainable without any increase in the next 10 years, at .5-1.5% growth annual rate increases are required on the range of 2-5% annually depending on inflation rate and growth rate. The model gives City Staff the ability to update annually the growth rate and inflation rate and determine what if any rate increase is required for that year. This eliminates the current situation where rates did not keep pace with needs for several years.

Figure 5.1 – Expenditures vs Revenue and Growth

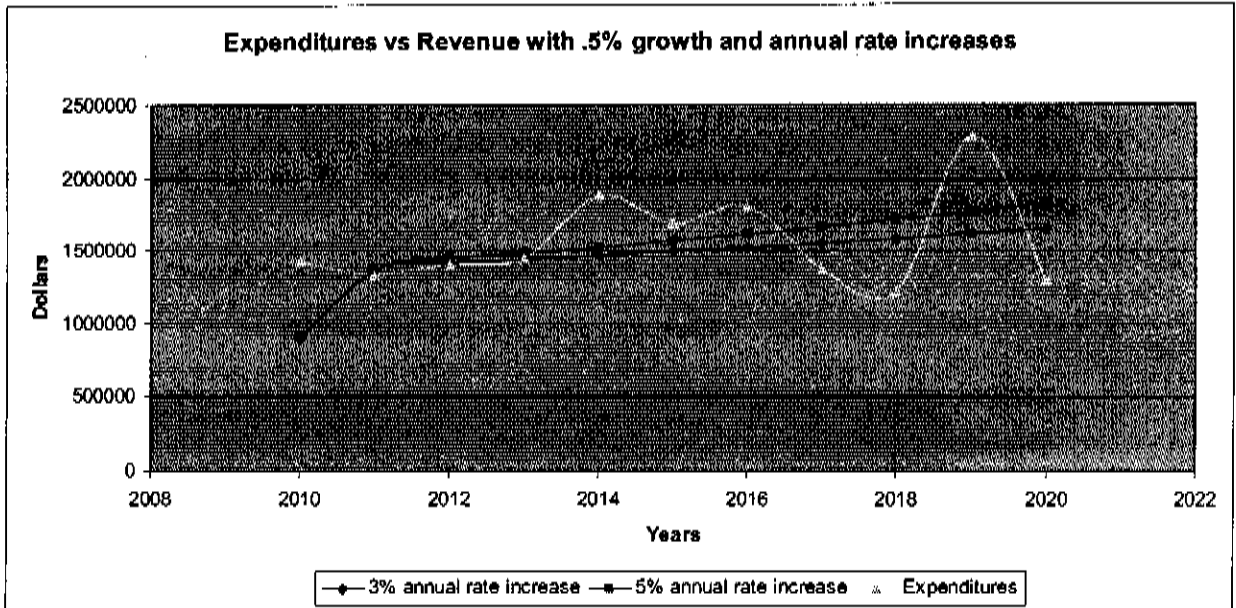


Based on the above chart due to the capital expenses anticipated in 2014, 2015 and 2016 expenditures can not be balanced with revenues in without significant rate increases in those years as well. But as can be seen in years beyond 2016 significant rate increases in 2014 would not be warranted beyond those years. An annual growth rate of .5% does not keep up with expenditures without additional rate increases. But as little at 2% annually does, and 3% growth would more then sustain revenues over expenditures.

Two points can be drawn from the above figure. First, needed capital projects in 2014, 2015, 2016 and 2019 can not happen as planned without financing (new loans) and significant population increase or else they need to be pushed off. Second the percent rate increase beyond 2011 is strongly dependent on the growth rate that occurs; 2% annual growth rate will sustain long term expenditures without rate increases in the future. If less then 2% growth is seen in the future annual rate increases will need to take place on the range of 1-5% a year depending on the growth rate. The City staff can use the provided model and

update it annually depending on true growth rate and see what 1-5% rate increase is needed.

Figure 5.2 – Expenditures vs. Revenue with 0.5% Growth and Annual Rate Increases



So both a 3% and 5% annual rate increase each year from 2012 and on balance out expenditures over the long run with even just a .5% annual growth rate but because of capital projects in the next three years there is no reasonable rate increase in 2012 and beyond to fund them as they are without financing.

Also as noted several times in the report the actual cost per thousand gallons of to supply water is greater than what is charged in the water usage rate. The difference is made up in the fixed fees. Because there is a larger percentage of residential customers versus high use commercial customers the residential customers carry a heavier weight of the overall cost in the fixed fees. Also as stated above this helps provide a more reliable and predictable revenue streams. If it is desired to shift how the expense weight is balanced then it is common to add an additional tier or tiers that have for high water users that is above that actual \$3.00 per thousand gallons number.

Appendix A

Water Rate Model with No Rate Increase

Water Rate Model NO RATE INCREASE BEYOND 2011 5% Quarterly Billing Cycle

Assumptions:	
Residential/commercial base fee	\$ 18.93 3/4" Inch line; increase commensurate with line size for commercial accounts
Gallons considered "base usage"	3,000 Residential only commercial
Percentage of readings less than base usage	2000% 1,319 8,143 # readings under base to total readings
Residential usage (thousands) - estimate	150,000
Residential gallons estimated over "base usage"	100,000 Based on 2010 usage totals
Higher tier usage - residential	20% Based on 2010 usage totals
Higher tier usage - commercial	25%
Usage Charges (per thousand gallons):	
Charge for base usage	\$ - 3,000 gallons/ctr
Residential usage fee > base	\$ 1.25
Commercial usage fee	\$ 1.25
Tier II usage fee	\$ 1.25 133% increase factor
Tier III usage fee	\$ 1.25 100% increase factor
Residential maintenance fee	\$ 13.77
Commercial demand fee base	\$ 22.95 100% of residential maint fee. Increase according to usage tiers.
Commercial usage (thousands) - estimate	300,000
Out of city limits multiplier	2.00 times in city rates
Inflation factor for operating expenditures	3.00% annual
Residential growth factor	0.50% annual

Key Metrics:	
Usage (gallons - in thousands):	
Residential	150,000 33%
Commercial	300,000 67%
	450,000
Water cost: Avg / Customer	
Avg Cost	\$ 1,398,000 527
/ gallon (000's)	\$3.11
Cost to customers based on gallons used	
Residential	\$ 465,000 211 33%
Commercial	\$ 932,000 2,078 67%
	\$ 1,398,000
Flat cost per number of customers:	
Residential	\$ 1,181,590 527 83%
Commercial	\$ 236,420 527 17%
	\$ 1,398,000
Costs to customers based on model:	
Residential	\$ 518,210 234 51%
Commercial	\$ 499,755 1,113 49%
	\$ 1,015,965

Expenditures	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Plant operation, maintenance and repair	\$ 461,622	\$ 450,500	\$ 484,015	\$ 477,935	\$ 492,274	\$ 507,042	\$ 522,253	\$ 537,921	\$ 554,058	\$ 570,680	\$ 587,800
Management and administration	81,179	91,800	94,654	97,391	100,312	103,322	106,421	109,614	112,902	116,289	119,778
Public works operation, maintenance and repair	108,867	138,400	142,252	145,828	151,233	155,770	160,444	165,257	170,215	175,321	180,581
Operating expenditures (cash basis)	651,669	660,700	701,121	722,155	743,819	768,134	789,118	812,791	837,175	862,900	888,159
Debt Service	469,614	431,700	431,700	411,300	423,800	412,600	420,800	238,600	220,700	241,600	241,200
Interfund loan repayment	-	250,000	-	-	-	-	-	-	-	-	-
Capital	312,491	495,000	278,000	318,000	717,000	510,000	805,000	307,000	167,000	1,181,000	187,000
Total expenditures	1,433,773	1,857,400	1,408,821	1,451,455	1,884,619	1,688,734	1,814,918	1,378,391	1,224,875	2,284,890	1,296,359
Less: New financing sources	-	(525,000)	-	-	-	-	-	-	-	-	-
Cash requirements	\$ 1,433,773	\$ 1,332,400	\$ 1,408,821	\$ 1,451,455	\$ 1,884,619	\$ 1,688,734	\$ 1,814,918	\$ 1,378,391	\$ 1,224,875	\$ 2,284,890	\$ 1,296,359

Revenue	Customers or Usage	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential: 2,200												
Single Family Residential	2,024	143,971	153,257	154,024	154,794	155,568	156,345	157,127	157,913	158,702	159,498	160,293
Single Family out of city	0	1,298	1,383	1,370	1,377	1,384	1,390	1,397	1,404	1,411	1,418	1,425
Multi-Family Residential (2 units)	172	24,804	26,048	26,178	26,309	26,440	26,573	26,705	26,839	26,973	27,108	27,244
Multi-Family out of city	1	72	151	152	153	154	154	155	156	157	158	158
Maintenance Fee - in city	2,196	112,172	120,958	121,580	122,779	124,830	127,141	130,352	134,812	139,084	144,745	151,391
Maintenance Fee - out of city	10	2,043	1,102	1,107	1,118	1,135	1,158	1,187	1,223	1,267	1,318	1,379
Billed usage (thousand gallons)	150,000	118,948	200,000	201,000	202,005	203,015	204,030	205,050	206,078	207,108	208,141	209,182
Incremental revenue from higher tier usage	-	-	13,333	13,400	13,487	13,534	13,602	13,670	13,738	13,807	13,875	13,945
Commercial: 449												
In City base												
3/4" line	280	20,184	21,202	21,202	21,202	21,202	21,202	21,202	21,202	21,202	21,202	21,202
1" line	100	9,435	10,977	10,977	10,977	10,977	10,977	10,977	10,977	10,977	10,977	10,977
1.5" line	19	2,829	2,877	2,877	2,877	2,877	2,877	2,877	2,877	2,877	2,877	2,877
2" line	20	4,500	5,256	5,256	5,256	5,256	5,256	5,256	5,256	5,256	5,256	5,256
3" line	7	2,064	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590	1,590
4" line	8	3,848	2,423	2,423	2,423	2,423	2,423	2,423	2,423	2,423	2,423	2,423
Out of City base												
3/4" line	5	721	757	757	757	757	757	757	757	757	757	757
1" line	2	348	403	403	403	403	403	403	403	403	403	403
1.5" line	2	490	606	606	606	606	606	606	606	606	606	606
2" line	1	346	404	404	404	404	404	404	404	404	404	404
3" line	-	-	-	-	-	-	-	-	-	-	-	-
4" line	-	-	-	-	-	-	-	-	-	-	-	-
Commercial Demand												
up to 100,000 gallons	310	27,881	29,284	29,284	29,284	29,284	29,284	29,284	29,284	29,284	29,284	29,284
101,000 - 500,000 gallons	103	18,017	18,911	18,911	18,911	18,911	18,911	18,911	18,911	18,911	18,911	18,911
501,000 - 1,000,000 gallons	17	3,945	11,705	11,705	11,705	11,705	11,705	11,705	11,705	11,705	11,705	11,705
over 1,000,000 gallons	20	10,490	18,360	18,360	18,360	18,360	18,360	18,360	18,360	18,360	18,360	18,360
Usage (thousand gallons)	300,000	354,000	281,250	281,250	281,250	281,250	281,250	281,250	281,250	281,250	281,250	281,250
Tier II fee	25%	-	63,750	63,750	63,750	63,750	63,750	63,750	63,750	63,750	63,750	63,750
Tier III fee	0%	-	-	-	-	-	-	-	-	-	-	-
Late fees and other revenue	-	41,987	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Total revenue	-	907,835	1,025,985	1,028,548	1,031,757	1,035,615	1,040,150	1,045,488	1,051,418	1,058,282	1,065,918	1,074,773
Over (under) cash requirements	-	\$ (625,938)	\$ (306,435)	\$ (380,275)	\$ (419,698)	\$ (649,004)	\$ (646,584)	\$ (768,516)	\$ (326,875)	\$ (168,613)	\$ (1,218,874)	\$ (221,588)

Appendix B

Alternative Rate Increase Models

Water Rate Model ALTERNATIVE A
Quarterly Billing Cycle

Assumptions:	
Residential/commercial base fee	\$ 26.00 3/4" inch line; increase commensurate with line size for commercial accounts
Gallons considered "base usage"	6,000 Residential only commercial
Percentage of readings less than base usage	20% 1,516 8,143 # readings under base to total readings
Residential usage (thousands) - estimate	150,000
Residential gallons estimated over "base usage"	120,000 Based on 2010 usage totals
Higher tier usage - residential	20% Based on 2010 usage totals
Higher tier usage - commercial	25%
Usage Charges (per thousand gallons):	
Charge for base usage	\$ - 6,000 gallons/qr
Residential usage fee > base	\$ 1.85
Commercial usage fee	\$ 1.85
Tier II usage fee	\$ 2.25 122% increase factor
Tier III usage fee	\$ 2.25 100% increase factor
Residential maintenance fee	\$ 17.00
Commercial demand fee base	\$ 17.00 100% of residential maint fee. Increase according to usage tiers.
Commercial usage (thousands) - estimate	300,000
Out of city limits multiplier	2.00 times in city rates
Inflation factor for operating expenditures	3.00% annual
Residential growth factor	0.50% annual

Key Metrics:	
Usage (gallons - in thousands):	
Residential	150,000 83%
Commercial	300,000 67%
	450,000
Water cost: Avg / Customer	
Avg Cost / gallon (000's)	\$ 1,398,000 \$ 527
	\$ 3.11
Cost to customer based on gallons used	
Residential	\$ 486,000 \$ 211 83%
Commercial	\$ 932,000 2,076 67%
	\$ 1,398,000
Flat cost per number of customers:	
Residential	\$ 1,161,580 \$ 527 63%
Commercial	\$ 236,420 527 17%
	\$ 1,398,000
Costs to customers based on model:	
Residential	\$ 854,444 \$ 297 48%
Commercial	\$ 711,744 1,586 62%
	\$ 1,398,688

Expenditures	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Plant operation, maintenance and repair	\$ 451,022	\$ 450,500	\$ 454,015	\$ 477,835	\$ 482,274	\$ 507,042	\$ 522,253	\$ 537,921	\$ 554,058	\$ 570,590	\$ 587,600
Management and administration	81,179	81,800	84,554	87,391	100,312	103,322	106,421	109,614	112,902	116,288	119,778
Public works operation, maintenance and repair	108,897	138,400	142,552	148,829	151,233	155,770	160,444	165,257	170,215	175,321	180,581
Operating expenditures (cash basis)	641,099	669,700	701,121	722,155	743,819	766,134	789,118	812,791	837,176	862,200	888,159
Debt Service	469,614	431,700	431,700	411,300	423,800	412,800	420,800	258,600	220,700	241,600	241,200
Interfund loan repayment		250,000									
Capital	312,491	495,000	276,000	318,000	717,000	610,000	605,000	307,000	167,000	1,181,000	167,000
Total expenditures	1,433,773	1,857,400	1,408,821	1,451,455	1,884,819	1,688,734	1,814,918	1,378,391	1,224,875	2,284,690	1,296,359
Less: New financing sources		(525,000)									
Cash requirements	\$ 1,433,773	\$ 1,332,400	\$ 1,408,821	\$ 1,451,455	\$ 1,884,819	\$ 1,688,734	\$ 1,814,918	\$ 1,378,391	\$ 1,224,875	\$ 2,284,690	\$ 1,296,359

Revenue	Customers or Usage	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential:												
Single Family Residential	2,024	145,971	226,888	227,821	228,001	230,105	231,250	232,412	233,574	234,742	235,916	237,095
Single Family out of city	0	1,288	2,015	2,026	2,036	2,045	2,057	2,067	2,077	2,088	2,098	2,109
Multi-Family Residential (2 units)	172	24,809	36,528	36,721	36,914	39,109	39,304	39,501	39,698	39,897	40,098	40,297
Multi-Family out of city	1	72	224	225	226	227	229	230	231	232	233	234
Maintenance Fee - In city	2,106	112,172	140,328	150,075	151,570	153,864	156,065	160,828	165,817	171,708	178,609	186,002
Maintenance Fee - out of city	10	2,043	1,360	1,367	1,381	1,401	1,430	1,466	1,510	1,564	1,627	1,702
Billed usage (thousand gallons)	150,000	118,848	222,000	223,110	224,226	225,347	226,473	227,606	228,744	229,888	231,037	232,192
Incremental revenue from higher tier usage			14,800	14,874	14,948	15,023	15,098	15,174	15,250	15,326	15,402	15,479
Commercial:												
In City base												
3/4" line	780	20,194	31,360	31,360	31,360	31,360	31,360	31,360	31,360	31,360	31,360	31,360
1" line	100	9,435	16,237	16,237	16,237	16,237	16,237	16,237	16,237	16,237	16,237	16,237
1.5" line	19	2,329	4,295	4,295	4,295	4,295	4,295	4,295	4,295	4,295	4,295	4,295
2" line	26	4,500	7,775	7,775	7,775	7,775	7,775	7,775	7,775	7,775	7,775	7,775
3" line	7	2,084	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352	2,352
4" line	8	3,646	3,594	3,594	3,594	3,594	3,594	3,594	3,594	3,594	3,594	3,594
Out of City base												
3/4" line	5	721	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120	1,120
1" line	2	348	598	598	598	598	598	598	598	598	598	598
1.5" line	2	400	898	898	898	898	898	898	898	898	898	898
2" line	1	340	598	598	598	598	598	598	598	598	598	598
3" line	-	-	-	-	-	-	-	-	-	-	-	-
4" line	-	-	-	-	-	-	-	-	-	-	-	-
Commercial Demand												
up to 100,000 gallons	319	27,881	21,692	21,692	21,692	21,692	21,692	21,692	21,692	21,692	21,692	21,692
101,000 - 500,000 gallons	103	18,017	14,008	14,008	14,008	14,008	14,008	14,008	14,008	14,008	14,008	14,008
501,000 - 1,000,000 gallons	17	5,845	8,670	8,670	8,670	8,670	8,670	8,670	8,670	8,670	8,670	8,670
over 1,000,000 gallons	20	10,460	13,600	13,600	13,600	13,600	13,600	13,600	13,600	13,600	13,600	13,600
Usage (thousand gallons)	300,000	354,000	416,250	416,250	416,250	416,250	416,250	416,250	416,250	416,250	416,250	416,250
Tier II fee	25%		168,750	168,750	168,750	168,750	168,750	168,750	168,750	168,750	168,750	168,750
Tier III fee	0%											
Late fees and other revenue		41,997	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Total revenue		907,835	1,378,688	1,379,962	1,384,014	1,388,967	1,394,555	1,401,127	1,408,646	1,417,188	1,426,852	1,437,755
Over (under) cash requirements		\$ (525,938)	\$ 44,288	\$ (28,859)	\$ (67,440)	\$ (485,762)	\$ (204,179)	\$ (413,791)	\$ 36,253	\$ 182,312	\$ (858,838)	\$ 141,393

Water Rate Model ALTERNATIVE B
Quarterly Billing Cycle

Assumptions:	
Residential/commercial base fee	\$ 38.00 3/4" inch line; increase commensurate with line size for commercial accounts
Gallons considered "base usage"	5,000 Residential only commercial
Percentage of readings less than base usage	20% 1,515 8,143 # readings under base to total readings
Residential usage (thousands) - estimate	150,000
Residential gallons estimated over "base usage"	120,000 Based on 2010 usage totals
Higher tier usage - residential	20% Based on 2010 usage totals
Higher tier usage - commercial	25%
Usage Charges (per thousand gallons):	
Charge for base usage	\$ - 5,000 gallons/qr
Residential usage fee > base	\$ 1.50
Commercial usage fee	\$ 1.50
Tier II usage fee	\$ 2.00 183% increase factor
Tier III usage fee	\$ 2.00 100% increase factor
Residential maintenance fee	\$ 17.00
Commercial demand fee base	\$ 17.00 100% of residential maint fee. Increase according to usage tiers.
Commercial usage (thousands) - estimate	300,000
Out of city limits multiplier	2.00 times in city rates
Inflation factor for operating expenditures	3.00% annual
Residential growth factor	0.50% annual

Key Metrics:	
Usage (gallons - in thousands):	
Residential	150,000 33%
Commercial	300,000 67%
	450,000
Water cost: Avg / Customer	
Avg Cost	\$ 1,398,000 \$ 527
/ gallon (000's)	\$ 8.11
Cost to customers based on gallons used	
Residential	\$ 488,000 \$ 211 33%
Commercial	932,000 2,076 67%
	\$ 1,398,000
Flat cost per number of customers:	
Residential	\$ 1,161,580 \$ 827 88%
Commercial	236,420 527 17%
	\$ 1,398,000
Costs to customers based on model:	
Residential	\$ 715,215 \$ 324 63%
Commercial	681,262 1,428 47%
	\$ 1,396,478

Expenditures	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Plant operation, maintenance and repair	\$ 461,822	\$ 450,500	\$ 464,015	\$ 477,935	\$ 492,274	\$ 507,042	\$ 522,253	\$ 537,921	\$ 554,058	\$ 570,880	\$ 587,800
Management and administration	81,179	81,800	84,554	87,391	100,312	103,322	106,421	109,614	112,902	116,289	119,778
Public works operation, maintenance and repair	108,857	138,400	142,552	148,829	151,233	155,770	160,444	165,257	170,215	175,321	180,581
Operating expenditures (cash basis)	651,659	699,700	701,121	722,156	743,819	768,134	789,118	812,791	837,175	862,290	888,159
Debt Service	489,814	431,700	431,700	411,300	423,800	412,800	420,800	258,800	220,700	241,000	241,200
Interfund loan repayment	-	250,000	-	-	-	-	-	-	-	-	-
Capital	312,491	495,000	276,000	318,000	717,000	510,000	605,000	307,000	187,000	1,181,000	167,000
Total expenditures	1,433,773	1,857,400	1,408,821	1,451,455	1,884,619	1,688,734	1,814,618	1,378,391	1,224,875	2,284,890	1,298,359
Less: New financing sources	-	(525,000)	-	-	-	-	-	-	-	-	-
Cash requirements	\$ 1,433,773	\$ 1,332,400	\$ 1,408,821	\$ 1,451,455	\$ 1,884,619	\$ 1,688,734	\$ 1,814,618	\$ 1,378,391	\$ 1,224,875	\$ 2,284,890	\$ 1,298,359

Revenue	Customers or Usage	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential:	2,209											
Single Family Residential	2,024	145,971	315,744	317,323	318,909	320,504	322,108	323,717	325,336	326,962	328,597	330,240
Single Family out of city	0	1,298	2,808	2,822	2,836	2,850	2,865	2,879	2,893	2,908	2,922	2,937
Multi-Family Residential (2 units)	172	24,809	53,864	53,932	54,202	54,478	54,745	55,019	55,294	55,571	55,849	56,128
Multi-Family out of city	1	72	312	314	315	317	318	320	321	323	325	326
Maintenance Fee - in city	2,790	112,172	149,328	150,075	151,579	153,864	156,985	160,928	165,817	171,708	178,608	186,902
Maintenance Fee - out of city	10	2,043	1,360	1,367	1,381	1,401	1,430	1,468	1,510	1,564	1,627	1,702
Billed usage (thousand gallons)	150,000	118,848	180,000	180,000	181,805	182,714	183,827	184,545	185,488	186,385	187,327	188,264
Incremental revenue from higher tier usage		12,000	12,000	12,000	12,120	12,181	12,242	12,303	12,365	12,426	12,488	12,551
Commercial:	440											
In City base												
3/4" line	280	20,194	43,880	43,880	43,950	43,980	43,980	43,880	43,880	43,880	43,880	43,880
1" line	109	8,435	22,815	22,815	22,815	22,815	22,815	22,815	22,815	22,815	22,815	22,815
1.5" line	19	2,328	5,928	5,928	5,928	5,928	5,928	5,928	5,928	5,928	5,928	5,928
2" line	28	4,500	10,830	10,830	10,830	10,830	10,830	10,830	10,830	10,830	10,830	10,830
3" line	7	2,084	3,276	3,276	3,276	3,276	3,276	3,276	3,276	3,276	3,276	3,276
4" line	8	3,848	4,992	4,992	4,992	4,992	4,992	4,992	4,992	4,992	4,992	4,992
Out of City base												
3/4" line	5	721	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
1" line	2	348	830	830	830	830	830	830	830	830	830	830
1.5" line	2	490	1,248	1,248	1,248	1,248	1,248	1,248	1,248	1,248	1,248	1,248
2" line	1	345	833	833	833	833	833	833	833	833	833	833
3" line	-	-	-	-	-	-	-	-	-	-	-	-
4" line	-	-	-	-	-	-	-	-	-	-	-	-
Commercial Demand												
up to 100,000 gallons	319	27,881	21,892	21,892	21,892	21,892	21,892	21,892	21,892	21,892	21,892	21,892
101,000 - 500,000 gallons	103	18,017	14,008	14,008	14,008	14,008	14,008	14,008	14,008	14,008	14,008	14,008
501,000 - 1,000,000 gallons	17	5,945	8,870	8,870	8,870	8,870	8,870	8,870	8,870	8,870	8,870	8,870
over 1,000,000 gallons	20	10,489	13,600	13,600	13,600	13,600	13,600	13,600	13,600	13,600	13,600	13,600
Usage (thousand gallons)	300,000	354,000	337,500	337,500	337,500	337,500	337,500	337,500	337,500	337,500	337,500	337,500
Tier II fee	25%	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000
Tier III fee	0%	-	-	-	-	-	-	-	-	-	-	-
Late fees and other revenue		41,897	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Total revenue		907,835	1,366,478	1,370,054	1,374,409	1,379,566	1,385,560	1,392,439	1,400,288	1,409,119	1,419,095	1,430,312
Over (under) cash requirements		\$ (525,938)	\$ 34,078	\$ (38,767)	\$ (77,048)	\$ (505,054)	\$ (363,174)	\$ (422,479)	\$ 21,874	\$ 184,244	\$ (885,795)	\$ 133,953

Water Rate Model ALTERNATIVE C
Quarterly Billing Cycle

Assumptions:	
Residential/commercial base fee	\$ 49.00 3/4" inch line; increase commensurate with line size for commercial accounts
Gallons considered "base usage"	8,000 Residential only commercial
Percentage of readings less than base usage	20% 1,318 8,143 # readings under base to total readings
Residential usage (thousands) - estimate	150,000
Residential gallons estimated over "base usage"	120,000 Based on 2010 usage totals
Higher tier usage - residential	20% Based on 2010 usage totals
Higher tier usage - commercial	25%
Usage Charges (per thousand gallons):	
Charge for base usage	\$ - 8,000 gallons/qr
Residential usage fee > base	\$ 1.25
Commercial usage fee	\$ 1.25
Tier II usage fee	\$ 1.50 100% increase factor
Tier III usage fee	\$ 1.50 100% increase factor
Residential maintenance fee	\$ 17.00
Commercial demand fee base	\$ 17.00 100% of residential main fee; increase according to usage tiers.
Commercial usage (thousands) - estimate	300,000
Out of city limits multiplier	2.00 times in city rates
Inflation factor for operating expenditures	3.00% annual
Residential growth factor	0.50% annual

Key Metrics:	
Usage (gallons - in thousands):	
Residential	150,000 83%
Commercial	300,000 87%
	450,000
Water cost:	
Avg Cost	\$ 1,398,000 \$ 527
/ gallon (000's)	\$3.11
Cost to customers based on gallons used	
Residential	\$ 486,000 \$ 211 33%
Commercial	932,000 2,076 87%
	\$ 1,398,000
Flat cost per number of customers:	
Residential	\$ 1,161,580 \$ 527 83%
Commercial	236,420 527 17%
	\$ 1,398,000
Costs to customers based on model:	
Residential	\$ 778,736 \$ 353 56%
Commercial	672,074 1,274 42%
	\$ 1,350,810

Expenditures	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Plant operation, maintenance and repair	\$ 461,822	\$ 450,500	\$ 464,015	\$ 477,935	\$ 492,274	\$ 507,042	\$ 522,253	\$ 537,921	\$ 554,068	\$ 570,890	\$ 587,800
Management and administration	81,179	81,800	94,554	97,391	100,312	103,322	106,421	109,614	112,902	116,289	119,776
Public works operation, maintenance and repair	108,867	138,400	142,552	148,828	151,233	155,770	160,444	165,257	170,215	175,321	180,581
Operating expenditures (cash basis)	651,869	680,700	701,121	722,155	743,819	768,134	789,118	812,791	837,175	862,200	888,159
Debt Service	480,614	481,700	431,700	411,300	423,800	412,800	420,800	258,600	220,700	241,600	241,200
Interfund loan repayment		290,000									
Capital	312,491	495,000	278,000	318,000	717,000	510,000	805,000	307,000	167,000	1,181,000	167,000
Total expenditures	1,483,773	1,867,400	1,408,821	1,451,455	1,884,819	1,688,734	1,814,918	1,378,391	1,224,875	2,264,690	1,296,359
Less: New financing sources		(525,000)									
Cash requirements	\$ 1,453,773	\$ 1,332,400	\$ 1,408,821	\$ 1,451,455	\$ 1,884,819	\$ 1,688,734	\$ 1,814,918	\$ 1,378,391	\$ 1,224,875	\$ 2,264,690	\$ 1,296,359

Revenue	Customers or Usage	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential:	2,201											
Single Family Residential	2,021	145,971	398,704	398,888	400,881	402,084	404,098	406,721	408,756	410,799	412,853	414,817
Single Family out of city	0	1,298	8,828	3,546	3,063	3,581	3,399	3,617	3,635	3,653	3,672	3,690
Multi-Family Residential (2 units)	172	24,809	67,424	67,781	68,100	68,440	68,783	69,127	69,472	69,820	70,169	70,519
Multi-Family out of city	1	72	362	394	398	398	400	402	404	406	408	410
Maintenance Fee - in city	2,198	112,172	149,328	150,075	151,679	153,864	155,965	158,028	160,817	171,708	178,668	186,902
Maintenance Fee - out of city	10	2,043	1,300	1,367	1,381	1,401	1,430	1,466	1,510	1,564	1,627	1,702
Billed usage (thousand gallons)	150,000	118,848	150,000	150,750	151,504	152,281	153,023	153,788	154,587	155,329	156,106	156,887
Incremental revenue from higher tier usage			10,000	10,050	10,100	10,151	10,202	10,253	10,304	10,355	10,407	10,458
Commercial:	449											
In City base												
3/4" line	280	20,194	54,880	54,880	54,880	54,880	54,880	54,880	54,880	54,880	54,880	54,880
1" line	109	8,435	28,414	28,414	28,414	28,414	28,414	28,414	28,414	28,414	28,414	28,414
1.5" line	18	2,329	7,448	7,448	7,448	7,448	7,448	7,448	7,448	7,448	7,448	7,448
2" line	26	4,500	13,806	13,806	13,806	13,806	13,806	13,806	13,806	13,806	13,806	13,806
3" line	7	2,084	4,116	4,116	4,116	4,116	4,116	4,116	4,116	4,116	4,116	4,116
4" line	8	3,846	6,272	6,272	6,272	6,272	6,272	6,272	6,272	6,272	6,272	6,272
Out of City base												
3/4" line	5	721	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980	1,980
1" line	2	348	1,043	1,043	1,043	1,043	1,043	1,043	1,043	1,043	1,043	1,043
1.5" line	2	490	1,568	1,568	1,568	1,568	1,568	1,568	1,568	1,568	1,568	1,568
2" line	1	346	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
3" line	-	-	-	-	-	-	-	-	-	-	-	-
4" line	-	-	-	-	-	-	-	-	-	-	-	-
Commercial Demand												
up to 100,000 gallons	378	27,881	21,692	21,692	21,692	21,692	21,692	21,692	21,692	21,692	21,692	21,692
101,000 - 500,000 gallons	103	18,017	14,008	14,008	14,008	14,008	14,008	14,008	14,008	14,008	14,008	14,008
501,000 - 1,000,000 gallons	17	5,945	8,870	8,870	8,870	8,870	8,870	8,870	8,870	8,870	8,870	8,870
over 1,000,000 gallons	20	10,460	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800
Usage (thousand gallons)	300,000	354,000	281,250	281,250	281,250	281,250	281,250	281,250	281,250	281,250	281,250	281,250
Tier II fee	26%		112,500	112,500	112,500	112,500	112,500	112,500	112,500	112,500	112,500	112,500
Tier III fee	0%											
Late fees and other revenue		41,997	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Total revenue		997,835	1,380,810	1,364,703	1,369,378	1,374,855	1,381,171	1,388,375	1,396,527	1,405,708	1,416,813	1,427,560
Over (under) cash requirements		\$ (525,938)	\$ 28,410	\$ (44,118)	\$ (82,077)	\$ (609,784)	\$ (307,562)	\$ (426,543)	\$ 15,136	\$ 180,833	\$ (688,677)	\$ 131,201

Water Rate Model ALTERNATIVE D
Quarterly Billing Cycle

Assumptions:	
Residential/commercial base fee	\$ 49.00 3/4" inch line; increase commensurate with line size for commercial accounts
Gallons considered "base usage"	6,000 Residential only commercial
Percentage of readings less than base usage	20% Residential only commercial
Residential usage (thousands) - estimate	160,000 8,143 # readings under base to total readings
Residential gallons estimated over "base usage"	120,000 Based on 2010 usage totals
Higher tier usage - residential	20% Based on 2010 usage totals
Higher tier usage - commercial	25%
Usage Charges (per thousand gallons):	
Charge for base usage	\$ - 6,000 gallons/qr
Residential usage fee > base	\$ 1.50
Commercial usage fee	\$ 1.50
Tier II usage fee	\$ 2.00 133% increase factor
Tier III usage fee	\$ 2.00 100% increase factor
Residential maintenance fee	\$ 17.00
Commercial demand fee base	\$ 17.00 100% of residential maint fee. Increases according to usage tiers.
Commercial usage (thousands) - estimate	300,000
Out of city limits multiplier	2.00 times in city rates
Inflation factor for operating expenditures	3.00% annual
Residential growth factor	0.50% annual

Key Metrics:	
Usage (gallons - in thousands):	
Residential	150,000 33%
Commercial	300,000 67%
	450,000
Water cost: Avg / Customer	
Avg Cost / gallon (000's)	\$ 1,398,000 / \$ 527
	\$ 8.11
Cost to customers based on gallons used	
Residential	\$ 488,000 \$ 211 33%
Commercial	\$ 932,000 2,078 67%
	\$ 1,398,000
Flat cost per number of customers:	
Residential	\$ 1,181,580 \$ 527 63%
Commercial	\$ 236,420 627 17%
	\$ 1,398,000
Costs to customers based on model:	
Residential	\$ 810,738 \$ 388 55%
Commercial	\$ 685,440 1,482 45%
	\$ 1,476,186

Expenditures	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Plant operation, maintenance and repair	\$ 461,622	\$ 450,500	\$ 464,015	\$ 477,935	\$ 492,274	\$ 507,042	\$ 522,253	\$ 537,921	\$ 554,088	\$ 570,880	\$ 587,800
Management and administration	81,179	91,800	94,054	97,391	100,312	103,322	106,421	109,614	112,902	116,289	119,778
Public works operation, maintenance and repair	108,887	138,400	142,552	146,829	151,233	155,770	160,444	165,257	170,215	175,321	180,581
Operating expenditures (cash basis)	651,689	680,700	701,121	722,155	743,819	766,134	789,118	812,791	837,175	862,290	888,159
Debt Service	409,614	431,700	431,700	411,300	423,800	412,800	420,800	258,800	220,700	241,800	241,200
Interfund loan repayment	-	250,000	-	-	-	-	-	-	-	-	-
Capital	312,491	495,000	276,000	318,000	717,000	510,000	606,000	307,000	187,000	1,181,000	167,000
Total expenditures	1,433,773	1,857,400	1,408,821	1,451,455	1,864,619	1,688,734	1,814,918	1,378,391	1,224,875	2,284,890	1,296,359
Less: New financing sources	-	(525,000)	-	-	-	-	-	-	-	-	-
Cash requirements	\$ 1,433,773	\$ 1,332,400	\$ 1,408,821	\$ 1,451,455	\$ 1,864,619	\$ 1,688,734	\$ 1,814,918	\$ 1,378,391	\$ 1,224,875	\$ 2,284,890	\$ 1,296,359

Revenue	Customers or Usage	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Residential:	2,200											
Single Family Residential	2,024	145,071	306,704	308,888	400,881	402,884	404,898	408,721	409,755	410,799	412,853	414,917
Single Family out of city	0	1,298	3,528	3,548	3,563	3,591	3,598	3,617	3,635	3,653	3,672	3,690
Multi-Family Residential (2 units)	172	24,809	67,424	67,701	68,100	68,440	68,783	69,127	69,477	69,820	70,169	70,518
Multi-Family out of city	1	72	362	364	366	368	368	368	368	368	368	368
Maintenance Fee - In city	2,190	112,172	149,328	150,075	151,579	153,064	154,665	156,286	157,917	159,558	161,209	162,860
Maintenance Fee - out of city	10	2,043	1,300	1,387	1,381	1,401	1,430	1,466	1,510	1,564	1,627	1,702
Billed usage (thousand gallons)	150,000	118,848	180,000	180,800	181,800	182,714	183,627	184,545	185,468	186,396	187,327	188,264
Incremental revenue from higher tier usage			12,000	12,060	12,120	12,181	12,242	12,303	12,365	12,426	12,488	12,551
Commercial:	440											
In City base												
3/4" line	280	20,184	54,880	54,880	54,880	54,880	54,880	54,880	54,880	54,880	54,880	54,880
1" line	100	9,435	28,414	28,414	28,414	28,414	28,414	28,414	28,414	28,414	28,414	28,414
1.5" line	10	2,329	7,448	7,448	7,448	7,448	7,448	7,448	7,448	7,448	7,448	7,448
2" line	20	4,500	13,808	13,808	13,808	13,808	13,808	13,808	13,808	13,808	13,808	13,808
3" line	7	2,084	4,116	4,116	4,116	4,116	4,116	4,116	4,116	4,116	4,116	4,116
4" line	8	3,846	6,272	6,272	6,272	6,272	6,272	6,272	6,272	6,272	6,272	6,272
Out of City base												
3/4" line	5	721	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
1" line	2	346	1,043	1,043	1,043	1,043	1,043	1,043	1,043	1,043	1,043	1,043
1.5" line	2	400	1,568	1,568	1,568	1,568	1,568	1,568	1,568	1,568	1,568	1,568
2" line	1	848	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047	1,047
3" line	-	-	-	-	-	-	-	-	-	-	-	-
4" line	-	-	-	-	-	-	-	-	-	-	-	-
Commercial Demand												
up to 100,000 gallons	319	27,861	21,892	21,892	21,892	21,892	21,892	21,892	21,892	21,892	21,892	21,892
101,000 - 500,000 gallons	103	18,017	14,008	14,008	14,008	14,008	14,008	14,008	14,008	14,008	14,008	14,008
501,000 - 1,000,000 gallons	17	5,945	8,870	8,870	8,870	8,870	8,870	8,870	8,870	8,870	8,870	8,870
over 1,000,000 gallons	20	10,480	13,600	13,600	13,600	13,600	13,600	13,600	13,600	13,600	13,600	13,600
Usage (thousand gallons)	300,000	354,000	337,500	337,500	337,500	337,500	337,500	337,500	337,500	337,500	337,500	337,500
Tier II fee	25%		149,625	149,625	149,625	149,625	149,625	149,625	149,625	149,625	149,625	149,625
Tier III fee	0%		-	-	-	-	-	-	-	-	-	-
Late fees and other revenue		41,907	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Total revenue		907,830	1,486,185	1,490,238	1,495,973	1,500,713	1,507,191	1,514,358	1,522,874	1,532,320	1,542,891	1,554,484
Over (under) cash requirements		\$ (525,938)	\$ 153,785	\$ 81,417	\$ 43,819	\$ (363,907)	\$ (181,543)	\$ (306,380)	\$ 144,483	\$ 307,345	\$ (742,200)	\$ 288,043

Appendix C

City of Salida Capital Projects

