



**BENICIA CITY COUNCIL
REGULAR MEETING AGENDA**

**Council Chambers
September 25, 2012
6:00 PM**

*Times set forth for the agenda items are estimates.
Items may be heard before or after the times designated.*

I. CALL TO ORDER (6:00 PM):

II. CONVENE OPEN SESSION:

A. ROLL CALL.

B. PLEDGE OF ALLEGIANCE.

C. REFERENCE TO THE FUNDAMENTAL RIGHTS OF THE PUBLIC.

A plaque stating the fundamental rights of each member of the public is posted at the entrance to this meeting room per section 4.04.030 of the City of Benicia's Open Government Ordinance.

III. ADOPTION OF AGENDA:

IV. OPPORTUNITY FOR PUBLIC COMMENT:

This portion of the meeting is reserved for persons wishing to address the Council on any matter not on the agenda that is within the subject matter jurisdiction of the City Council. State law prohibits the City Council from responding to or acting upon matters not listed on the agenda. Each speaker has a maximum of five minutes for public comment. If others have already expressed your position, you may simply indicate that you agree with a previous speaker. If appropriate, a spokesperson may present the views of your entire group. Speakers may not make personal attacks on council members, staff or members of the public, or make comments which are slanderous or which may invade an individual's personal privacy.

A. WRITTEN COMMENT.

B. PUBLIC COMMENT.

V. BUSINESS ITEM (6:15 PM):

A. WATER AND SEWER RATE INCREASES. (Interim Public Works Director)

Water and sewer rates were last raised in 2006 as part of a regular schedule of modest increases that were intended to assure the rates kept pace with increases in costs. After working with experts in the engineering and financial fields, updated Water and Sewer System Master Plans were developed that were incorporated into water and sewer rate studies. City staff conducted a comprehensive outreach effort, including receiving input from several City advisory bodies. Staff will present these comprehensive analyses and make recommendations for rate increases over a period of five years to protect the longevity of these important public resources. The quality and safety of our local water supply and the proper maintenance of our sewer system is essential to our community's health, safety and financial integrity. Specifically, our water and sewer systems must be properly maintained in order to:

- Ensure clean, safe drinking water for our residents and businesses
- Have secure adequate water capacity in the event of a major earthquake, fire or catastrophic emergency
- Prevent sewage spills that present a health risk to the community, place the City at risk for regulatory fines and lawsuits, and pollute the Carquinez Strait.

Recommendation: To protect the health and safety of the community and the City's financial integrity, staff recommends City Council adopt a resolution setting the public hearing date for December 4, 2012 to consider increasing rates for water and sewer service by amending Chapter 13.12 of the Benicia Municipal Code relating to water rates and charges and Chapter 13.52 relating to sewer rates and charges, and directing staff to proceed with mailing notices to all property owners within the City of Benicia.

VI. ADJOURNMENT (9:30 PM):

Public Participation

The Benicia City Council welcomes public participation.

Pursuant to the Brown Act, each public agency must provide the public with an opportunity to speak on any matter within the subject matter jurisdiction of the agency and which is not on the agency's agenda for that meeting. The City Council allows speakers to speak on non-agendized matters under public comment, and on agendized items at the time the agenda item is addressed at the meeting. Comments are limited to no more than five minutes per speaker. By law, no action may be taken on any item raised during the public comment period although informational answers to questions may be given and matters may be referred to staff for placement on a future agenda of the City Council.

Should you have material you wish to enter into the record, please submit it to the City Manager.

Disabled Access or Special Needs

In compliance with the Americans with Disabilities Act (ADA) and to accommodate any special needs, if you need special assistance to participate in this meeting, please contact Anne Cardwell, the ADA Coordinator, at (707) 746-4211. Notification 48 hours prior to the meeting will enable the City to make reasonable arrangements to ensure accessibility to the meeting.

Meeting Procedures

All items listed on this agenda are for Council discussion and/or action. In accordance with the Brown Act, each item is listed and includes, where appropriate, further description of the item and/or a recommended action. The posting of a recommended action does not limit, or necessarily indicate, what action may be taken by the City Council.

Pursuant to Government Code Section 65009, if you challenge a decision of the City Council in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice, or in written correspondence delivered to the City Council at, or prior to, the public hearing. You may also be limited by the ninety (90) day statute of limitations in which to challenge in court certain administrative decisions and orders (Code of Civil Procedure 1094.6) to file and serve a petition for administrative writ of mandate challenging any final City decisions regarding planning or zoning.

The decision of the City Council is final as of the date of its decision unless judicial review is initiated pursuant to California Code of Civil Procedures Section 1094.5. Any such petition for judicial review is subject to the provisions of California Code of Civil Procedure Section 1094.6.

Public Records

The agenda packet for this meeting is available at the City Manager's Office and the Benicia Public Library during regular working hours. To the extent feasible, the packet is also available on the City's web page at www.ci.benicia.ca.us under the heading "Agendas and Minutes." Public records related to an open session agenda item that are distributed after the agenda packet is prepared are available before the meeting at the City Manager's Office located at 250 East L Street, Benicia, or at the meeting held in the Council Chambers. If you wish to submit written information on an agenda item, please submit to the City Clerk as soon as possible so that it may be distributed to the City Council. A complete proceeding of each meeting is also recorded and available through the City Clerk's Office.

AGENDA ITEM
CITY COUNCIL MEETING DATE - SEPTEMBER 25, 2012
BUSINESS ITEM

DATE : September 20, 2012
TO : City Manager
FROM : Interim Public Works Director
SUBJECT : **WATER AND SEWER RATE INCREASES**

RECOMMENDATION:

To protect the health and safety of the community and the City's financial integrity, staff recommends City Council adopt a resolution setting the public hearing date for December 4, 2012 to consider increasing rates for water and sewer service by amending Chapter 13.12 of the Benicia Municipal Code relating to water rates and charges and Chapter 13.52 relating to sewer rates and charges, and directing staff to proceed with mailing notices to all property owners within the City of Benicia.

EXECUTIVE SUMMARY:

Water and sewer rates were last raised in 2006 as part of a regular schedule of modest increases that were intended to assure the rates kept pace with increases in costs. After working with experts in the engineering and financial fields, updated Water and Sewer System Master Plans were developed that were incorporated into water and sewer rate studies. City staff conducted a comprehensive outreach effort, including receiving input from several City advisory bodies. Staff will present these comprehensive analyses and make recommendations for rate increases over a period of five years to protect the longevity of these important public resources. The quality and safety of our local water supply and the proper maintenance of our sewer system is essential to our community's health, safety and financial integrity. Specifically, our water and sewer systems must be properly maintained in order to:

- Ensure clean, safe drinking water for our residents and businesses
- Have secure adequate water capacity in the event of a major earthquake, fire or catastrophic emergency
- Prevent sewage spills that present a health risk to the community, placing the City at risk for regulatory fines and lawsuits, and polluting the Carquinez Strait.

GENERAL PLAN:

Relevant General Plan Goals:

- Goal 2.28: Improve and maintain public facilities and services
- Goal 2.36: Ensure an adequate water supply for current and future residents and businesses

STRATEGIC PLAN:

Relevant Strategic Plan Issues:

- Strategic Issue #1: Protecting Community Health and Safety
- Strategic Issue #2: Protecting and Enhancing the Environment
- Strategic Issue #3: Strengthening Economic and Fiscal Conditions
 - Strategy #4: Manage City finances prudently
- Strategic Issue #4: Preserving and Enhancing Infrastructure
 - Strategy #4: Provide funding for ongoing infrastructure needs

BUDGET INFORMATION:

Since 2006, water and sewer rates have remained constant, with no increases. The Water and Sewer Funds are currently operating in a deficit. The Water Fund is projected to be (\$1,774,315) and Sewer Fund (\$641,566) based on fiscal year 2011/12 amended budget figures. Without any rate increases, they will continue to run an operating deficit and will deplete the operating fund reserves by June 2014 at which point they would have to borrow from the General Fund (used for critical community service needs such as police and fire). Also, without any rate increases, it is estimated that the Water and Sewer Funds will not meet the City's 20% reserve requirement starting in fiscal year 2012/13. Additionally, the Water Fund will fail to meet its debt service coverage requirements, which could result in another credit rating downgrade as Standard and Poor's has already downgraded the City's credit rating. An independent auditor has informed the City that rate adjustments will be necessary to restore the City's credit rating.

BACKGROUND AND DISCUSSION:

Our local water supply must be properly maintained and protected to ensure clean, safe drinking water and an adequate water supply in the event of an earthquake, fire or catastrophic emergency. Benicia's sewer system must be properly maintained to prevent sewage spills that present a health risk to the community, place the City at risk for regulatory fines and lawsuits, and can damage the Carquinez Strait and our environment.

Unfortunately, Benicia has aging water and sewer systems and proper maintenance and repair is needed. Additionally, our plants have important monitoring equipment, pumps, and other major capital items that cannot be easily repaired, due to age of materials, and must be upgraded to ensure safety.

Evolving state and federal regulations that our water and sewer systems are subject to are also impacting our systems. Benicia must stay in compliance with all required mandates or face costly fines or environmental lawsuits.

Water and sewer rates were last raised in 2006 as a part of a regular schedule of modest increases that were intended to assure the rates kept pace with increases in costs. Staff examined the current rates and determined that the system had substantially changed since the last master plans were completed. Rather than continue on the current progression that rates had been following, staff moved to begin an update of both the Water and Sewer Master Plans to assess the City's current and future needs for new rate studies. In 2009, the Sewer Master Plan was begun and in August of 2012, both studies were completed.

Master Plans study the capacity, condition and related life cycle of both a treatment plant and the network of pipelines associated with it. Complex hydraulic modeling is completed to examine system capacity and needed redundancies to assure reliable water delivery, and assure public health and safety is protected from exposure to waste. In addition to modeling, condition assessment, maintenance practices and replacement schedules are used to complete a full inventory of the system and its needs.

Master Plans are then used to guide the needed funds for operation, maintenance and renewal of water and sewer infrastructure as part of rate studies completed recently and presented to the community for the first time at the Finance Committee Meeting of August 10, 2012. They can be found on the City's website www.ci.benicia.ca.us under Water/Sewer System Safety.

Rate Study Objectives

Three objectives serve as the foundation of the rate analyses:

1. Revenues Cover Expenses - Revenues cover all expenses, including operating, capital and debt service, which is consistent with the City's Balanced Operating Budget Policy (Attachment 1).
2. Debt Service Coverage Target - Net revenues (all revenues available after Operations and Maintenance expenses are covered) are at least 120% of annual debt service, which includes principal and interest payments on the revenue refunding bonds and the SRF loans.
3. Reserve Target - The Enterprise meets the City's fund balance reserve policy of 20% of current year revenue (Attachment 2).

First, the City's financial rating was recently downgraded (Attachment 3) because revenues were not equal to or greater than costs. A lower financial rating increases the cost to borrow funds and limits the City's ability to borrow additional funds, should that become necessary. The rating agency has

indicated that a further downgrade is possible if no action is taken to address the fiscal sustainability of the enterprise funds. An independent auditor has informed the City that rate adjustments will be necessary to restore the City's credit rating (Attachment 4).

Proposition 218/Discount Rates

It is important to know that in 2006 the Supreme Court ruling on the Bighorn-Desert View Water Agency case established that water and sewer charges are property-related and subject to Proposition 218 requirements. Proposition 218, the "Right to Vote on Taxes Act," was approved by California voters in November 1996 and is codified as Articles XIII C and XIII D of the California Constitution. Proposition 218 established requirements for imposing or increasing property related taxes, assessments, fees and charges. For many years, there was no legal consensus on whether water and sewer rates met the definition of "property related fees." Under Proposition 218, the amount of the fees for water and sewer cannot exceed the proportional cost of service to a parcel.

Water and Sewer funds are "Enterprise Funds" which means they are managed as individual businesses and the revenues come from fees charged to users. The Enterprise Funds are different from the "General Fund" which is the City's main operating fund that is funded by general revenues (e.g. sales tax, property tax, utility users' tax). Proposition 218 prohibits water and sewer enterprise funds (funded by water and sewer ratepayers) from continuing to subsidize the discount offered to seniors age 60 and older. Proposition 218 prohibits providing a lower cost to one specific customer class that is subsidized through higher charges to other customers. If the City wishes to continue the discounted rate, the discounts must be subsidized from another source of revenue other than from ratepayers, such as the General Fund. Attached is a legal opinion regarding this issue (Attachment 5.)

Fire Flows

Benicia needs adequate water capacity in the event of a major earthquake, fire, or catastrophic emergency. Our community is unique in that a large percentage of the city is comprised of industrial and commercial occupancies, including the Valero Refinery, the Benicia Industrial Park, the historic downtown, the Benicia Arsenal, and a deep-water port. These industrial and commercial occupancies require our water distribution system to deliver high volumes of water, or fire flow, in the event of a fire.

Fire services are graded by an independent agency, the Insurance Services Office, in order to determine insurance rates. This grading survey is done every seven to ten years and the City of Benicia is currently going through this process. Our last survey was conducted in 2002, and the City currently has a rating of three; 40% of the survey score is based on our water distribution system. As part

of the survey, fire flow requirements are calculated for several specific occupancies in our city, some of which require over 7,000 gallons per minute fire flow. The inspector looks at maintenance records, as well as conducts actual fire flow tests in the field.

Therefore, it is critical for our community's safety and sustainability to keep our water distribution system well maintained and operating effectively.

Outreach

A comprehensive public education program has been underway since August 2012 to inform community, City Commissions/Committees, and interested citizens with factual information resulting from the recent water and sewer rate studies. This effort was undertaken because of the City Council's commitment to inform the community of important issues and provide complete transparency to decisions of such great importance.

In August and September, City staff made a power point presentation followed by a question and answer period for the following groups:

- ✓ City Finance Committee (three meetings)
- ✓ City Economic Development Board
- ✓ City Parks & Recreation Commission
- ✓ City Council/School Liaison Committee
- ✓ City Community Sustainability Commission
- ✓ City Department Heads
- ✓ Benicia Industrial Park Association Board
- ✓ Chamber of Commerce Board
- ✓ Rotary Club
- ✓ Senior Citizen Roundtable Forum

In addition to the above presentations, City staff met individually with Benicia Unified School District representatives to specifically review rate changes and their impact to the School District's utility bills.

During the above City and community group sessions, copies of the power point presentation and water and sewer rate studies were provided to attendees. In early August, the City's website was updated with the power point presentation and water and sewer rate studies.

In early September, informational pamphlets were mailed to 9,500 Benicia property owners (Attachment 6). A detailed letter, along with a Frequently Asked Questions Sheet, from the City Manager, Brad Kilger and Interim Public Works Director, Melissa Morton was mailed to approximately 45 interested parties (Attachment 7).

A City hotline, ph# (707) 746-4380 and dedicated email address (WaterSewerQuestions@ci.benicia.ca.us) have been activated and staff has already received comments and questions from members of the public.

City staff will continue to meet with groups to provide information about the proposed rate increases. For example, staff will be speaking to the Soroptomist Club on September 27.

In early to mid-October, a Proposition 218 Notice outlining the specific water and sewer rate increases and details of the protest process will be mailed to all property owners in the City.

In mid-November, an additional informational postcard will be mailed to the same 9,500 property owners.

Feedback from Outreach Efforts

City staff received feedback from the public outreach effort mentioned above. Much of that feedback was used in the development of the senior discount plan recommendations. While many questions were addressed at the individual presentations, highlighted below are some select questions/comments received from the outreach with answers provided.

1. Q: Why were the water and sewer rate adjustments not addressed sooner?
A: Water and sewer rates were last raised in 2006. Subsequently in 2006 was the Supreme Court decision on the Bighorn case, which requires a Proposition 218 compliant process for future rate increase adoption. To avoid confronting the senior discount issue, the determination was made to avoid a rate increase and try to realize cost savings through operational efficiencies. When it was clear that this would not close the funding gap, staff began the proposal process to prepare new master plans. The Sewer System Master Plan was completed in July 2011 and the Water System Master Plan was completed in September 2012. These plans were used in the rate analyses, which began in 2011. Also during these years, the economy began a severe downturn as well. While in retrospect it appears that this may have accelerated the rate increases that must occur now, ratepayers were not impacted during one of the deepest recessions the Country has seen since the 1930's.
2. Q: It was suggested to make the financial goals more clear.
A: The financial goals have been carefully described in the staff report under the heading "Rate Study Objectives" and are important to the fiscal stability of the fund. However, rates need to be raised not only for these

reasons, but principally to assure that needed maintenance and future replacement of major components of the system occurs.

3. Q: Why do the rate studies assume PayGo?

A: PayGo refers to “pay as you go.” The water and sewer rate studies assume that capital projects are funded on a PayGo basis. This method was used instead of financing mechanisms, which would incur more debt. Further, the City cannot currently issue bonds because the water and sewer funds cannot demonstrate that they are self sustaining. The PayGo assumption can be revisited in the future.

4. Q: Why is water consumption assumed to remain constant?

A: The Water Rate Study assumes that total water consumption will remain constant based on FY 2010/11 use. Due to the community's excellent water conservation efforts, it is expected that water consumption will decrease; however, as the economy improves, it is projected that an increase in consumption will offset the conservation efforts.

5. Q: It was suggested that the noticing process be explained.

A: City Council will hold a public meeting on September 25 to review the studies and receive public testimony. If the Council decides to move forward with the rate increases, a public hearing date will be set (tentatively December 4.) The City must notify property owners by mail of their right to protest the increases 45 days prior to the scheduled hearing date. Each property owner will have one chance to protest each fee. For example, if the Council sets a hearing date for December 4, the notices will be sent out in mid-October. If as of the scheduled hearing date more than 50 percent of the property owners submit a written protest to the City, the rates cannot go into effect.

6. Q: It was recommended the staff report include feedback received from the Senior Citizen roundtable group.

A: City staff met with a group of seniors to discuss the issue of future funding the senior water discount knowing that it legally cannot continue to be funded by other ratepayers, as it is currently. The group's consensus was that the City should offer a senior low-income discount.

7. Q: It was requested staff provide clarification on whether the water and sewer rates are being raised to pay for the recent City solar projects.

A: Water and sewer rates are not being raised to pay for the recent solar projects. The City issued Certificates of Participation to fund the solar projects. The Certificates of Participation are paid back using energy savings from the solar project.

8. Q: It was requested staff provide clarification on whether water rates are being raised due to water conservation.
A: Water rates are not being raised due to water conservation. Further conservation has been accounted for in the rate analysis as well.
9. Q: Staff were asked if “purple pipe” was considered.
A: Purple pipe refers to recycled water pipelines. It has been determined that recycled water projects are not cost effective for the City because it is less expensive to use treated water. The infrastructure construction cost needed to distribute the recycled water exceeds the benefit of pursuing the project. A consultant previously estimated that a recycled water project between the City and Valero Refinery would cost \$40 million.

As stated above, City staff met with the Finance Committee at three separate meetings. Staff spent an extensive amount of time responding to the Committee’s questions. Attached are the Finance Committee’s comments, approved at the September 18, 2012 (Attachment 8).

Sewer Rates

The City of Benicia has a sewer treatment plant that treats from 3.5 to 8 million gallons per day. The collection system that transports waste from all over the City to the treatment plant includes 150 miles of sanitary sewers, 23 lift stations, and 9,278 sewer service connections. As part of the master planning process, the City hired Camp Dresser & McKee (CDM) to prepare an updated Sewer Master Plan. Projects cost and timelines were reviewed by staff to assure there were no unnecessary multipliers used to inflate the estimates, and the timeline for each project’s completion was reasonable and necessary. Only essential projects are included in the capital improvement section of the study that are necessary for maintenance in order to sustain the system and ensure continued safe service, modifications due to future regulatory changes, or changes due to lessons learned or future permit changes.

The City hired rate consultant, Bartle Wells Associates (BWA), to review the sewer enterprise’s finances, project revenues and expenses over a future 10-year period, and design sewer rates and charges (Attachment 9). BWA’s study develops and recommends adjustments to sewer rates to keep the Sewer Enterprise Fund financially sustainable, pay for maintenance and capital projects, comply with credit rating requirements, and satisfy the City’s reserve fund policy. BWA determined that sewer rates should be increased, and they provided three scenarios. The recommended option presented below offers the lowest initial increase and eases the needed increase across the 5-year time period. With this option, all objectives as outlined in the Rate Study Objectives section above are met in FY 2016/17. BWA conducted 10-year projections to

help determine how to best set the rates over 5 years, as Proposition 218 (discussed later in this report) limits rate increases to 5 years.

Proposed Sewer Rates						
	Current	Proposed				
Fiscal Year	2012	2013	2014	2015	2016	2017
Monthly Rate per EDU (1)	\$41.33	\$45.88	\$50.01	\$53.26	\$55.39	\$56.49
Recommended Change	0.0%	11.0%	9.0%	6.5%	4.0%	2.0%
Dollar Increase per month		\$4.55	\$4.13	\$3.25	\$2.13	\$1.11
(1) EDU = equivalent dwelling unit						

On June 4, 2012, the City received a letter from the law office of Jack Silver regarding sanitary sewer overflows to Waters of the United States as reported to the Regional Water Quality Control Board as part of the City's sewer treatment plant and collection system regulatory permit for discharge to the Carquinez Strait (Attachment 10). The letter placed the City on notice of the firm's intent to file suit under the Clean Water Act. As part of a yet to be agreed upon settlement to avoid costly litigation, the City will increase the frequency of cleaning and inspection of the City's sewer collection system. These improved maintenance activities are also accounted for in the proposed fee adjustment.

Water Rates

The City of Benicia has a water treatment plant with a maximum daily capacity of 12 million gallons per day with a distribution system made up of 160 miles of water mains, 1,428 fire hydrants, 9,547 water service connections, three pump stations and three reservoir sites. As part of the master planning process, the City hired Nolte Vertical 5 to prepare an updated Water Master Plan. Projects cost and timelines were reviewed by staff to assure there were no unnecessary multipliers used to inflate the estimates, and the timeline for each project's completion was reasonable and necessary. Only essential projects are included in the capital improvement section of the study that are necessary for maintenance in order to sustain the system and ensure continued safe service, modifications due to future regulatory changes, or changes due to lessons learned or future permit changes.

Similar to what is stated in the Sewer Rate section above, the City hired rate consultant Bartle Wells Associates (BWA) to review the water enterprise's finances, project revenues and expenses over a future, 10-year period, and design water rates and charges (Attachment 10.) BWA's study develops and recommends changes in the City's water rates to pay for maintenance and capital projects, keep the Enterprise on a sound financial foundation, comply with credit rating requirements, and satisfy the City's reserve fund policy.

BWA determined that water charges should be increased, and they provided

three scenarios. The recommended option is presented below and offers the lowest initial increase and eases the increase across the 5-year time period. With this option, all objectives as outlined in the Rate Study Objectives section above are met in FY 2016/17. BWA conducted 10-year projections to help determine how to best set the rates over 5 years, as Proposition 218 limits rate increases to 5 years.

Proposed Water Rates							
		Current	Proposed Rates (per month)				
		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
			7%	12.9%	11.5%	6.8%	3.5%
Residential Rates							
Service Charge per meter	Single family	\$13.80	\$14.77	\$16.68	\$18.60	\$19.86	\$20.56
	Multi- family unit	\$10.36	\$11.09	\$12.52	\$13.96	\$14.91	\$15.43
Volume Charge per hcf (2)	0 - 8 hcf	\$1.37	\$1.46	\$1.65	\$1.84	\$1.97	\$2.04
	8 - 30 hcf	\$2.15	\$2.30	\$2.60	\$2.90	\$3.10	\$3.21
	Over 30 hcf	\$2.30	\$2.46	\$2.78	\$3.10	\$3.31	\$3.43
Commercial / Industrial / Irrigation / Municipal Rates							
Service Charge per meter	5/8 - 3/4"	\$17.83	\$19.08	\$21.54	\$24.02	\$25.65	\$26.55
	1"	\$31.68	\$33.90	\$38.27	\$42.67	\$45.57	\$47.16
	1½"	\$71.25	\$76.24	\$86.07	\$95.97	\$102.50	\$106.09
	2"	\$126.64	\$135.50	\$152.98	\$170.57	\$182.17	\$188.55
	3"	\$284.90	\$304.85	\$344.18	\$383.76	\$409.86	\$424.21
	4"	\$506.48	\$541.93	\$611.84	\$682.20	\$728.59	\$754.09
	6"	\$1,139.56	\$1,219.32	\$1,376.61	\$1,534.92	\$1,639.29	\$1,696.67
Volume Charge per hcf	0 - 30 hcf	\$1.86	\$1.99	\$2.25	\$2.51	\$2.68	\$2.77
	Over 30 hcf	\$2.18	\$2.33	\$2.63	\$2.93	\$3.13	\$3.24
Automatic Sprinkler & Private Fire Hydrant Rates							
Flat Rate per meter	2"	\$9.37	\$10.03	\$11.32	\$12.62	\$13.48	\$13.95
	4"	\$16.40	\$17.55	\$19.81	\$22.09	\$23.59	\$24.42
	6"	\$23.21	\$24.84	\$28.04	\$31.26	\$33.39	\$34.56
	8"	\$30.42	\$32.55	\$36.75	\$40.98	\$43.77	\$45.30
	10"	\$37.39	\$40.01	\$45.17	\$50.36	\$53.78	\$55.66
	12"	\$44.40	\$47.51	\$53.64	\$59.81	\$63.88	\$66.12
Fire Hydrants	Double outlet & steame	\$11.71	\$12.53	\$14.15	\$15.78	\$16.85	\$17.44
	Single outlet & wharf	\$3.52	\$3.77	\$4.26	\$4.75	\$5.07	\$5.25
Untreated Water Rates							
Minimum Charge per meter	2"	\$23.38	\$25.02	\$28.25	\$31.50	\$33.64	\$34.82
	3"	\$46.75	\$50.03	\$56.48	\$62.98	\$67.26	\$69.61
	4"	\$70.10	\$75.00	\$84.68	\$94.42	\$100.84	\$104.37
	6"	\$140.17	\$149.98	\$169.33	\$188.80	\$201.64	\$208.70
Volume Charge per hcf	0 - 150 hcf	\$0.84	\$0.90	\$1.02	\$1.14	\$1.22	\$1.26
	Over 150 hcf	by agmt	by agmt	by agmt	by agmt	by agmt	by agmt
(1) Customers are billed on a bi-monthly basis. The rates above are per month.							
(2) hcf = one hundred cubic feet = 748 gallons							

Water Conservation Efforts

The Water Rate Study assumes that total water consumption will remain constant based on FY 2010/11 use. Due to the community's excellent water conservation efforts, it is expected that water consumption will decrease; however, as the economy improves, it is projected that an increase in consumption will offset conservation efforts.

The City partners with Solano County Water Agency (SCWA) for water conservation programs. The City, and especially the Community Sustainability Commission (CSC), share a goal of improving water use efficiency and conserving water. Below are the current water conservation programs/efforts the City through SCWA and the CSC have implemented:

- ✓ High Efficiency Toilets – up to \$100 Rebate (SCWA)
- ✓ High Efficiency Washing Machines – up to \$75 Rebate (SCWA)
- ✓ Lawn Replacement Rebate - \$1/sq. ft. up to \$1,000 (SCWA)
- ✓ Smart Irrigation Controllers Rebate – up to \$300, \$700 or \$1,000 depending on size (SCWA)
- ✓ Free Home Water Audit Program (may include distribution of low flow shower heads, faucet aerators, and/or hose nozzles.) (SCWA)
- ✓ WattzOn Home Water and Energy Audit Program (CSC)
- ✓ CSC allocated \$10,000 for incentives for residential plumbing fixture upgrades. (CSC)

Below is a list of water conservation efforts planned for the future:

- ✓ Property Assessed Clean Energy (PACE) Program – This program provides an opportunity for commercial, industrial, and multi-family residential owners to finance high performance energy efficiency, renewable energy, and water conservation projects. The City is participating in this program again effective September 18, 2012.
- ✓ Proposed Additional Water Incentive Program – a per fixture rebate for toilets, washing machines, smart irrigation controllers, and sprinkler heads. These rebates would be in addition to other rebates offered. This proposal goes back to the Community Sustainability Commission in November 2012.

Senior Sewer Discount

Casa de Vilarrasa, a senior housing complex, is the City's only customer that receives a discounted sewer rate, which is about 68% off the regular service charge. For example, a single-family residence pays \$41.33 per month and a residential unit at Casa de Vilarrasa pays \$13.33 per month. There are 81 units in the complex and with this discount the sewer fund (funded by sewer ratepayers) subsidizes approximately \$27,000 per year. Under Proposition 218 provisions (as interpreted in the 2006 Bighorn-Desert View Water Agency Supreme Court ruling), sewer ratepayers cannot legally bear the subsidy cost. Proposition 218

prohibits providing a lower cost to one specific customer class that is subsidized through higher charges to other customers. If the City wishes to continue the discounted rate to Casa de Vilarrasa, the cost must be subsidized from another source of revenue other than from ratepayers, such as the General Fund (Attachment 5).

It is City staff's recommendation that the City provide a 50% discount to Casa de Vilarrasa, subsidized by the General Fund, as more than 50 percent of the residents are low income seniors. This is an arbitrary amount that is less than the current discount and thus would be a smaller impact to the General Fund as outlined below.

General Fund Impact – Transitioning from a ~68% to a 50% discount for Casa de Vilarrasa would cost the General Fund a total of \$126,861 over the first 5 ½ fiscal years, as outlined in the table below, and future fiscal year costs would be based on any future rate adjustments. For discussion purposes, assuming no rate adjustments are made after 2017, the cost to the General Fund would be approximately \$27,500 per fiscal year.

CASA DE VILARRASA DISCOUNT TRANSITION FROM ~68% TO 50%						
	(1/2 year) FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18 and subsequent years*
Cost/Fiscal Year	\$11,149	\$23,301	\$25,095	\$26,402	\$27,187	\$27,454
Total (for first 5 1/2 yrs only)	\$126,861					

* Assumes no increase in FY 18/19

Customer Billing Impact – Below is a representative sample of how monthly sewer charges would increase for Casa de Vilarrasa.

CASA DE VILARRASA DISCOUNT TRANSITION FROM ~68% TO 50%						
	Current	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017
Proposed Residential Service Charge (mo.)	\$41.33	\$45.88	\$50.01	\$53.26	\$55.39	\$56.49
Casa De Vilarrasa Discount	67.75%	50.00%	50.00%	50.00%	50.00%	50.00%
Casa De Vilarrasa Sewer Charge (mo)	\$13.33	\$22.94	\$25.01	\$26.63	\$27.70	\$28.25

Senior Water Discount

Customers receive utility bills that contain two types of water charges – a fixed maintenance/service charge, and a consumption/volume charge that is variable since it is based on usage. The current senior discount (age 60 or older) is 78% off the fixed maintenance charge and 18% off the consumption charge for Tier 1 (43% off Tier 2 and 42% off Tier 3.) On average, these discounts equate to roughly 50% off (low consumption would be less than 50% and high consumption would be more than 50%). The City currently has 2,544 senior discounted customers. In FY 10/11, the senior discount amount (i.e. subsidy) was

\$477,838 (the difference between the revenue received from senior customers vs. what it would have been without the discount.) As stated above, since other ratepayers can no longer legally subsidize utility discounts, any continued discounts would need to be subsidized by the General Fund. After extensive public outreach and feedback discussing how best to protect our community's most vulnerable residents, while at the same time ensuring the City's long-term financial integrity (as detailed in this report), two options are presented below.

1. Option 1 - Phase Out Senior Discount Over a 4 Year Period

This option consists of phasing out the senior discount on the fixed maintenance charge over the next four years. This option incrementally phases out the difference between the proposed residential monthly service charges (outlined in the water rate table above) and the current senior discounted monthly maintenance charge of \$3.05 by 80% the first year, 60% the second year, 40% the third year, and 20% the fourth year. The discount on the fixed maintenance charge would end in year 5. Current senior discounted customers would start paying the full price of the consumption charges (at the revised rates) starting in January 2013. Conservation efforts could help reduce the impact of this change.

General Fund Impact – Option 1 would cost the General Fund a total of \$828,408 over 5 fiscal years as outlined in the table below.

OPTION 1 - SENIOR DISCOUNT 4 YEAR PHASE OUT						
	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18...
Cost to General Fund	\$143,115	\$267,944	\$219,771	\$146,260	\$51,318	\$0
Option 1 Total	\$828,408					

If the City chose to phase out the senior discount over a 3-year period, the cost to the General Fund would be \$595,067. And a 2-year phase out would cost the General Fund \$282,918.

Customer Billing Impact - Below is a representative sample of how the monthly water charges would increase with Option 1 based on average water consumption.

OPTION 1 - SENIOR DISCOUNT 4 YEAR PHASE OUT						
	Current Avg. Senior Bill/mo.	Year 1 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017
Avg. SFR Bill/mo.		\$35.65	\$40.28	\$44.92	\$48.02	\$49.72
Discount Amount		<u>\$9.38</u>	<u>\$8.18</u>	<u>\$6.22</u>	<u>\$3.36</u>	<u>\$0.00</u>
Senior Avg. SFR Bill/mo.	\$16.89	\$26.27	\$32.10	\$38.70	\$44.66	\$49.72
<i>Bill Increase per month</i>		<i>\$9.38</i>	<i>\$5.83</i>	<i>\$6.60</i>	<i>\$5.96</i>	<i>\$5.06</i>

2. Option 2 - Transition to Senior Low-Income Discount

This option consists of using the General Fund to provide currently enrolled senior discounted customers a discount of 78% off the fixed maintenance charge for the first 6 months of 2013. These customers would start paying the full price of the consumption charges (at the revised rates) starting in January 2013. The first six months of 2013 is when low-income seniors would apply for the discount. Then, starting July 1, 2013 for 6 months, the fixed maintenance charge discount would drop to 65% and the program transitions from a senior discount to a senior low-income discount. And finally, starting July 1, 2014, the fixed maintenance charge discount would drop to 50% permanently for qualified senior low-income customers. The proposed discount is on the fixed maintenance charge only; customers would start paying the full price of the consumption charges (at the revised rates) starting in January 2013. Seniors who do not qualify for the low-income discount would begin paying the full residential rates on July 1, 2013.

The proposed requirements for the senior low-income discount on water bills are as follows:

1. Age 60 or older (Note: Social Security Administration uses 62 or older as the threshold for senior. Housing and Urban Development defines a senior as being 65 or older.)
2. Must apply in person in the Finance Department (every 2 years)
3. Low-Income Verification

The simplest and least invasive to implement is to follow PG&E's CARE program which utilizes a state wide standard for determining eligibility for the low income discount as demonstrated below.

Income Guidelines for PG&E's CARE Program								
Number of Persons in Household	1	2	3	4	5	6	7	8*
Annual income before taxes	\$22,340	\$30,260	\$38,180	\$46,100	\$54,020	\$61,940	\$69,860	\$77,780
* For each additional person, add \$7,920.								

Using the PG&E CARE guidelines would simplify verification of eligibility by requiring the customer to provide a copy of their PG&E bill noting the discount along with identification that substantiates their age and address. PG&E's guidelines utilize a statewide income standard. City staff is recommending utilizing PG&E's CARE income guidelines for ease of implementation, and limited intrusion into our citizens' lives requiring separate income documentation.

General Fund Impact – Option 2 would cost the General Fund a total of \$663,311 over 5 fiscal years as outlined in the table below and future fiscal year costs would be based on any future rate adjustments. For discussion purposes,

assuming no rate adjustments are made after 2017, the cost to the General Fund would be approximately \$105,000 per fiscal year. This estimates 850 seniors would qualify under the low-income guidelines, per the City's Housing Element. The Housing Element defines seniors as age 65 and older and reported that 546 seniors are "very low income" and 303 are "low income." ("Very low income" is defined as below 50% of the average medium income and "low income" is 80% of the average medium income.)

OPTION 2 - TRANSITION TO SENIOR LOW-INCOME DISCOUNT						
	FY 12/13	FY 13/14	FY 14/15	FY 15/16	FY 16/17	FY 17/18 and subsequent years*
Cost to General Fund	\$175,850	\$91,497	\$89,964	\$98,073	\$103,071	\$104,856
Option 2 Total (for first 5 1/2 yrs only)	\$663,311					

* Assumes no increase in FY 18/19

Customer Billing Impact – Below is a representative sample of how the monthly water charges would increase with Option 2, based on average water consumption.

OPTION 2 - TRANSITION TO SENIOR LOW-INCOME DISCOUNT							
	Current Avg. Senior Bill/mo.	First 6 months 2013	Next 6 months 2013	Year 2 2014	Year 3 2015	Year 4 2016	Year 5 2017
Avg. SFR Bill/mo.		\$35.65	35.65	\$40.28	\$44.92	\$48.02	\$49.72
Discount Amount		<u>\$11.52</u>	<u>\$9.60</u>	<u>\$8.34</u>	<u>\$9.30</u>	<u>\$9.93</u>	<u>\$10.28</u>
Senior Avg. SFR Bill/mo.	\$16.89	\$24.13	\$26.05	\$31.94	\$35.62	\$38.09	\$39.44
<i>Bill Increase per month</i>		\$7.24	\$1.92	\$5.89	\$3.68	\$2.47	\$1.35

3. Option 3 – Four Year Phase Out For Seniors Who Do Not Qualify For The Low Income Discount

To soften the transition for seniors who do not qualify for the low-income discount, another option for your consideration is to provide a four year phase out for seniors who do not qualify for the low income discount. This would be in addition to offering the senior low-income discount. This option would cost the General Fund over \$1.1 million dollars for the first five and a half years and approximately \$105,000 per fiscal year after that. This option consists of providing the currently enrolled senior discounted customers a discount of 78% off the fixed maintenance charge for the first 6 months of 2013. The first six months of 2013 is when low income seniors would apply for the discount. Then starting in July 2013, low-income seniors who qualify would transition to the senior low-income discount described in Option 2 and the seniors who do not qualify under the low-income guidelines would have their discount phased out over four years (similar to what is described in Option 1.)

General Fund Capacity

While it appears that the City's revenue base has begun to stabilize, there are no significant increases in revenue forecasted for the foreseeable future. Fiscal year 2011/12 financial results are not yet final; however, projections show the ending reserve balance to be 19.2% of General Fund revenues, slightly less than the City Council policy level of 20%. The budget for fiscal year 2012/13 is balanced and maintains the 19.2% level of fund reserves. Funding levels discussed previously to either phase in or continue the senior discount range between \$803,900 and \$968,996 and will reduce this reserve level to 16.6% - 17.0% over the 5-year period, assuming there are no significant changes in the budget. In addition, the budget will need to include ongoing project costs of up to \$132,000 after fiscal year 2017/18.

Proposition 218 Process

Any proposed increase to water and sewer rates is subject to Proposition 218, which requires that:

- City Council must hold a public meeting to review the rate studies and receive public testimony.
- After taking testimony, if the City Council decides to move forward with the rate increases, the Council will set a hearing date for formal adoption of the increases.
- City must notify property owners by mail of their right to protest the increases, 45 days prior to the scheduled hearing date (Attachment 12 & 13).
 - For example: if the City Council sets a hearing date for December 4, 2012, notices would be sent out in early October.
- Each parcel represents one chance to protest.
- Only one protest for each property owner will be counted.
- If, as of the scheduled hearing date, more than 50% of the property owners submit a written protest to the City, the rates cannot go into effect. Council can decrease proposed rates but cannot increase from amounts stated in the public notice.
- At the close of the public hearing, if a majority protest does not exist, the City Council will consider the adoption of the proposed water and sewer rates increases. Note that actual rates and charges adopted by the City Council may be less, but not more than, the proposed rates identified in the Proposition 218 notice.

Attachments:

- Proposed Resolution
- Attachment 1 - City of Benicia Balanced Operating Budgets Policy
- Attachment 2 - City of Benicia Fund Balance Reserve Policy
- Attachment 3 - Standard and Poor's Credit Rating Information

- Attachment 4 - Maze & Associates Memorandum on Internal Control
- Attachment 5 - Memorandum from Attorney regarding Proposition 218 Legal Opinion
- Attachment 6 - Informational Pamphlet
- Attachment 7 - Letter with FAQ's from City Manager and Public Works Director
- Attachment 8 - Finance Committee's Comments
- Attachment 9 - Sewer Rate Study
- Attachment 10 – Letter from the Law Office of Jack Silver
- Attachment 11 – Water Rate Study
- Attachment 12 – Memorandum from Attorney regarding Proposition 218 Voting Requirements
- Attachment 13 - Draft Proposition 218 Notice

RESOLUTION NO. 12-

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF BENICIA SETTING THE PUBLIC HEARING DATE FOR DECEMBER 4, 2012 TO CONSIDER INCREASING RATES FOR WATER AND SEWER SERVICE BY AMENDING CHAPTER 13.12 OF THE BENICIA MUNICIPAL CODE RELATING TO WATER RATES AND CHARGES AND CHAPTER 13.52 RELATING TO SEWER RATES AND CHARGES, AND DIRECTING STAFF TO PROCEED WITH MAILING NOTICES TO ALL PROPERTY OWNERS WITHIN THE CITY OF BENICIA

WHEREAS, ensuring a clean, reliable water source and a safe wastewater disposal system is a responsibility the City takes seriously; and

WHEREAS, the City has completed Water and Sewer System Master Plans that examined condition, capacity and replacement schedules for major components of the water and sewer treatment plants and their related distribution and collection systems; and

WHEREAS, the City hired rate consultant, Bartle Wells Associates to review the water and sewer enterprise's finances, project revenues and expenses, and design rates and charges; and

WHEREAS, water and sewer rates were last raised in 2006; and

WHEREAS, City staff is recommending that water and sewer rates be increased over the next five years in an effort to meet the objectives of revenues covering expenses, meeting the debt service coverage targets, and meeting the 20% reserve target; and

WHEREAS, these rate changes will help ensure the health and safety of the community while protecting the City's financial health; and

WHEREAS, the City must comply with Proposition 218 notice and protest requirements prior to raising water and sewer rates.

NOW, THEREFORE, BE IT RESOLVED THAT the City Council hereby sets a public hearing date for December 4, 2012 to consider increasing rates for water and sewer service by amending Chapter 13.12 of the Benicia Municipal Code relating to water rates and charges and Chapter 13.52 relating to sewer rates and charges, and directs staff to proceed with mailing notices to all property owners within the City of Benicia.

* * * * *

On motion of Council Member _____, seconded by Council Member _____, the above Resolution was introduced and passed by the City Council of the City of Benicia at a regular meeting of said Council held on the 25th day of September, 2012, and adopted by the following vote:

Ayes:

Noes:

Absent:

Elizabeth Patterson, Mayor

Attest:

Lisa Wolfe, City Clerk

**CITY OF BENICIA
BALANCED OPERATING BUDGETS POLICY**

Established April 6, 2004; Revised June 28, 2005, April 19, 2011

1. **Mandated Balanced Operating Budgets.** The preliminary, adopted and amended operating budgets for the general fund and all enterprise funds shall be balanced budgets when the following conditions exist:
 - a. A balanced budget shall be defined as a condition where the current year's operating expenses do not exceed the current year's operating revenues and *Surplus Reserves*, as defined by the Fund Balance Reserve Policy.
 - b. An "interim" balanced budget shall be defined as a condition where the current year's operating expenses do not exceed the current year's operating revenues and *Contingency Reserves*, as defined by the Fund Balance Reserve Policy and in accordance with Section 3. below.
 - c. Non-recurring revenues and expenditures are accounted for separately.

2. **Operating Budgets.** Operating budgets shall be defined as regular recurring revenues and expenses required to maintain City Council adopted levels of service to citizens and the community.
 - a. Operating revenues shall include the following: Receipts of property and other taxes; fines, forfeitures and penalties; licenses and permits; revenue from other agencies; investment earnings; rents and concessions; charges for recurring services; and Surplus Reserves, as defined by the Fund Balance Reserve Policy. .
 - b. Operational expenses shall include the following: Payment of wages and benefits; consumable supplies and utilities; materials and commodities; contracts for services; internal service charges for the replacement and maintenance of vehicles, equipment and facilities; internal service charges for the stabilization of retirement or workers' compensation benefits; and capital outlays for additional tools, equipment, or facilities valued less than \$25,000.

3. **Deficit Operating Budgets and Use of Contingency Reserves.** In the event that the current year's operating expenditures exceed the current year's operating revenues and surplus reserves yielding deficit budgets, the City Council may authorize the transfer and appropriation of Contingency Reserves, as defined in the Fund Balance Reserve

Policy, in order to achieve an interim balanced budget, provided the following conditions exist:

- a. The appropriation must be authorized in accordance with the Fund Balance Reserve Policy established by the City Council.
 - b. The use of Contingency Reserves shall require a list of findings articulating the need for the use of the reserves and a plan for achieving a balanced operating budget and for the replenishment of the reserves within a reasonable period of time.
4. **Non-recurring Revenues and Expenditures.** Non-recurring revenues and expenditures shall be defined as those of a one-time or short-term nature, generally associated with Interfund or External Advances and Loans, grant-funded services, subdivision development or capital improvement projects.
- a. Non-recurring revenues shall include the following: net permit revenue from subdivisions in excess of 10 lots; grant awards; Interfund or external advances and loan repayments; rebates and reimbursements of a non-recurring nature; and capital improvement project contributions.
 - b. Non-recurring expenditures shall include the following: grant sponsored programs and projects; equipment and facilities with a life generally in excess of one year or \$25,000; and program organization and planning projects in excess of \$25,000.
 - c. Deficit Non-recurring Budget appropriations must be authorized in accordance with the Fund Balance Reserve Policy established by the City Council.
5. **Council Action Required.** Any variance from the stipulations established within this policy shall require approval of the City Council with a minimum of four (4) votes.

**CITY OF BENICIA
FUND BALANCE RESERVE POLICY**

Established April 6, 2004; Revised June 28, 2005, August 7, 2007, April 19, 2011

1. The City shall maintain minimum fund or working capital balances in the General Fund and enterprise funds according to the following requirements:

a. **Budget Stabilization Reserves.** The following Budget Stabilization Reserves shall be maintained to ensure the continued delivery of City services during periods of operational budget deficits. Reserve balances will be based on current year revenue. Any request for appropriation of these Reserves shall be accompanied by findings articulating the need for the use of the reserves and a plan for the replenishment of the reserves within a reasonable time period. Appropriation of these funds can only be for the purposes stated. At a minimum, the reserves shall include the following:

i. **Contingency Reserve of 10%.** A Contingency Reserve will be maintained to mitigate the affects of major economic uncertainties, local disasters, and other severe financial hardships resulting from unforeseen changes in revenues and/or expenditures, including potential costs not covered by the City's insurance programs, such as claim costs within the City's deductibles, self-insured retentions and/or major costs associated with disasters and other events which will not be reimbursable from insurance or from the Federal or State government. The City Council may appropriate these reserves to fund operational costs and other non-emergency capital costs in order to facilitate the stable and efficient delivery of City services or facility maintenance. These funds shall be comprised of Cash plus current year receivables less current year payables.

ii. **Emergency Reserves of 10%.** An Emergency Reserve will be maintained to mitigate all unforeseen events not covered in the Contingency Reserves. The Emergency Reserves shall be appropriated by the City Council to provide for Natural Disaster expenditures of epic proportion, such as an 8.0 Earthquake or 200-Year Flood Event. These funds shall be comprised of Cash and Investments.

b. **Internal Service Fund Reserves.** The Council may designate that internal service funds be established for:

i. The future maintenance or replacement of plant and equipment. The funds may include, but not be limited to:

1. Equipment replacement
 2. Vehicle replacement
 3. Facilities and infrastructure maintenance/replacement.
 - ii. The future stabilization of costs that might be subject to large cost fluctuations. The funds may include, but not be limited to:
 1. Workers' Compensation Cost Stabilization
 2. General Liability Cost Stabilization
 3. Employee Retirement Cost Stabilization
 - c. **Future Capital Project Reserves.** The Council may designate specific fund balance levels for future development of capital projects that it has determined to be in the best long-term interests of the City.
 - d. **Accounting Designations and Legal Reserves.** In addition to the designations noted above, fund balance levels shall be sufficient to meet funding requirements for projects approved in prior years, which are carried forward into the new year; debt service reserve requirements; reserves for encumbrances; and other reserves or designations required by contractual obligations, state law, or generally accepted accounting principles.
 - e. **Surplus Reserves.** These undesignated and unrestricted reserves shall be established and maintained as repository accounts for all funds not otherwise mandated above.
 - i. The City Council may appropriate these reserves to fund operational revenue shortfalls, emergency expenditures, capital improvement projects, non-recurring expenditures or operational costs in conformance with the City's Balanced Operating Budget Policy.
 - f. **Funding of reserves.** The funding shall come generally from one-time revenues, excess fund balance and projected revenues in excess of projected expenditures. When available, each fund shall be replenished in the following priority order unless otherwise designated by the Council:
 - i. Accounting Designations and Legal Reserves
 - ii. Budget Stabilization Reserves
 - iii. Internal Service Fund Reserves
 - iv. Future Capital Project Reserves
 - v. Surplus Reserves
2. **Council Action Required.** Appropriation or use of funds from any of these reserves or any variance from the stipulations established within this policy

shall require an action of the City Council with a minimum of 4 votes. The Council action shall be accompanied by the following:

- i. A statement of findings supporting the appropriation of reserves or modification to the policy.
- ii. A plan for replenishing the reserve within a reasonable time period when the appropriation causes a reserve to fall below minimum funding levels.

Summary:

Benicia, California; Water/Sewer

Primary Credit Analyst:

Robert Hannay, San Francisco (1) 415-371-5038; robert_hannay@standardandpoors.com

Secondary Contact:

Paul Dyson, San Francisco (1) 415-371-5079; paul_dyson@standardandpoors.com

Table Of Contents

Rationale

Outlook

Related Criteria And Research

Summary:

Benicia, California; Water/Sewer

Credit Profile

Benicia wtr

Unenhanced Rating

A+(SPUR)/Negative

Downgraded

Many issues are enhanced by bond insurance.

Rationale

Standard & Poor's Ratings Services lowered its long-term and underling ratings (SPUR) to 'A+' from 'AA' on Benicia, Calif.'s series 2002 water revenue refunding bonds. The outlook is negative.

The lowered rating reflects our view of the city's decreased coverage of revenue bond and state loan debt service during the past three years, with coverage dropping below 1.0x in fiscals 2010 and 2011. The city last increased water rates in 2006. Since 2007, operating revenues have been stagnant or slightly decreasing while expenses have trended upward, leading to the lower coverage. The 'A+' rating is based on our view that the strong cash levels in the water fund provide the city with some financial flexibility during a temporary period of lower coverage. We understand that the city is working to manage its costs and is currently exploring rate increases. The negative outlook reflects our assessment that coverage could remain low going forward if rates are not increased and expense reductions are only modest. If coverage levels remain near or below 1.0x during the next two years, we could lower the rating further.

The rating reflects our view of the water system's:

- Concentrated customer base, with the top customer, Valero Energy Corp., representing 44% of operating revenue in fiscal 2010;
- Stagnant-to-decreasing operating revenue since 2006, while operating expenses have trended upward; and
- Low debt service coverage during the past two years of less than 1.0x, as calculated by Standard & Poor's.

Offsetting the above weaknesses is our view of the water system's:

- Strong cash position, with total cash and investments representing 799 days of operating expenses as of June 30, 2011, and a cash balance excluding connection-fee revenues designated for expansion projects representing 390 days; and
- No current plans for additional water revenue-backed debt.

The bonds are secured by the net revenues of the water system. As of June 30, 2011, the city had \$5.7 million in water revenue bonds outstanding. In 2004, the city also entered into a loan with the state department of water resources, with \$9.8 million in principal currently outstanding. Under the state loan funding agreement, the city has pledged water rates and charges for loan repayment. The funding agreement does not explicitly state the lien status of the loan relative to the water revenue bonds. The revenue bond indenture does not allow new debt senior to the revenue bonds. In our debt service coverage calculations we are including debt service on the bonds and the state

loan.

The city is located on the outskirts of the San Francisco Bay Area on the Sacramento River. The city covers a generally established population base that has seen slow growth in recent years. As of fiscal 2010, the system provided water service to 9,378 connections. We view the customer base as concentrated. Valero Energy Corp. (BBB/Stable) is the largest customer by revenue, representing 44% of operating revenue in fiscal 2010. The top 10 customers represent about 79% of the system's operating revenue. We view the Valero refinery located in Benicia as a stable customer.

The city's water supply comes primarily from two sources: Lake Berryessa through the Putah South Canal under agreements with the City of Vallejo and the Solano County Water Agency; and Sacramento River water through the North Bay Aqueduct, which is part of the State Water Project. Raw surface water is treated at the city's 12 million gallon per day (mgd) water treatment plant. Excess raw water can be stored in the Lake Herman reservoir and used in an emergency.

The city has not raised its water rates for more than five years. Currently, a single-family residential customer pays a base charge of \$13.80 monthly, plus a volume-based charge of \$1.37 per hundred cubic feet (ccf) of water for the first 8 ccf, with higher charges for two tiers thereafter. A monthly residential bill for water usage of 10 ccf per month would be \$29.06, which we view as moderate. According to management, the city is undertaking a rate study and could raise rates in the future, although no specific rate increases are currently planned.

The water fund's financial performance has gradually declined during the past three years as rates remained unchanged, operating revenue gradually declined, operating expenses trended upward, and coverage decreased to insufficient levels. Operating revenue totaled \$6.6 million in fiscal 2010 based on audited financials, while operating expenses excluding depreciation totaled \$5.4 million. Net operating revenue plus interest income of about \$212,000 in fiscal 2010 totaled \$1.4 million. Debt service on the revenue bonds and state loan in fiscal 2010 was approximately \$1.7 million, leading to debt service coverage of about 0.83x. Based on unaudited fiscal 2011 financials, operating revenues are down slightly, expenses are about flat, and interest income has decreased, leading to debt service coverage of about 0.61x. The water fund's debt is structured with level annual debt service of about \$1.7 million through 2017, then stepping down to \$740,000 from 2018 through 2027.

In our view, the system's low debt service coverage is somewhat mitigated by the water fund's strong liquidity position, with cash and investments totaling \$11.9 million as of June 30, 2011, representing about 799 days of operating expenses. According to management, \$6.1 million of this is accumulated connection-fee revenues designated for capital expansion. Excluding this cash, liquidity is 390 days of operating expenses, which we still consider strong. Although the water fund's current cash balance provides financial flexibility as operating revenues have been stagnant, a prolonged period of below 1.00x debt service coverage would likely erode liquidity over time. The city's policy is to carry reserves of at least 20% of annual revenues in each enterprise fund, including the water fund.

During the next five year, the water fund's capital plan includes \$7.3 million in projects. Funding sources for these projects are ongoing operating revenues and funds on hand. We understand that the city currently does not have additional water revenue-backed debt plans.

Outlook

The negative outlook reflects our view that weak debt service coverage could continue if rates remain unchanged, water consumption is steady, and operating expenses do not decline. If coverage remains at or below 1.00x during the next two years, we could lower the rating further. If water rates and system expenses are managed in a manner that we believe will bring revenues in line with ongoing costs and provide higher debt service coverage, we could revise the outlook to stable.

Related Criteria And Research

- USPF Criteria: Key Water And Sewer Utility Credit Ratio Ranges, Sept.15, 2008
- USPF Criteria: Standard & Poor's Revises Criteria For Rating Water, Sewer, And Drainage Utility Revenue Bonds, Sept. 15, 2008

Complete ratings information is available to subscribers of RatingsDirect on the Global Credit Portal at www.globalcreditportal.com. All ratings affected by this rating action can be found on Standard & Poor's public Web site at www.standardandpoors.com. Use the Ratings search box located in the left column.

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CITY OF BENICIA
MEMORANDUM ON INTERNAL CONTROL
AND
REQUIRED COMMUNICATIONS
FOR THE YEAR ENDED
JUNE 30, 2011

CITY OF BENICIA
MEMORANDUM ON INTERNAL CONTROL
AND
REQUIRED COMMUNICATIONS

For the Year Ended June 30, 2011

Table of Contents

	<u>Page</u>
<i>Memorandum on Internal Controls</i>	1
Schedule of Significant Deficiencies	3
Schedule of Other Matters.....	5
<i>Required Communications</i>	7
Financial Statement Audit Assurance	7
Other Information Included with the Audited Financial Statements.....	7
Accounting Policies.....	7
Unusual Transactions, Controversial or Emerging Areas.....	8
Estimates	8
Disagreements with Management.....	8
Retention Issues.....	9
Difficulties.....	9
Audit Adjustments	9
Uncorrected Misstatements.....	9

MEMORANDUM ON INTERNAL CONTROL

ACCOUNTANCY CORPORATION
3478 Buskirk Ave. - Suite 215
Pleasant Hill, California 94523
(925) 930-0902 • FAX (925) 930-0135
maze@mazeassociates.com
www.mazeassociates.com

December 2, 2011

To the City Council of
the City of Benicia, California

In planning and performing our audit of the financial statements of the City of Benicia as of and for the year ended June 30, 2011, in accordance with auditing standards generally accepted in the United States of America, we considered the City's internal control over financial reporting (internal control) as a basis for designing our auditing procedures for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the City's internal control. Accordingly, we do not express an opinion on the effectiveness of the City's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. We did not identify any deficiencies in internal control that we consider to be material weaknesses, as defined above.

A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph and was not designed to identify all deficiencies in internal control that might be significant deficiencies or material weaknesses and, therefore, there can be no assurance that all such deficiencies have been identified. In addition, because of inherent limitations in internal control, including the possibility of management override of controls, misstatements due to errors or fraud may occur and not be detected by such controls.

Included in the Schedule of Other Matters are recommendations not meeting the above definitions that we believe to be of potential benefit to the City.

The City's written responses included in this report have not been subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we express no opinion on them.

This communication is intended solely for the information and use of management, City Council, others within the organization, and agencies and pass-through entities requiring compliance with generally accepted government auditing standards, and is not intended to be and should not be used by anyone other than these specified parties.

Maze & Associates

CITY OF BENICIA
MEMORANDUM OF INTERNAL CONTROL

SCHEDULE OF SIGNIFICANT DEFICIENCIES

2011-01: 2002 Water Revenue Refunding Bonds Indenture Compliance

Criteria: According to the Official Statements of the City of Benicia 2002 Water Revenue Refunding Bonds, the City should maintain available Net Revenues of the Water System at a level at least equal to one hundred twenty percent (120%) of the amounts payable to provide coverage over debt service over the life of bonds.

Condition: In fiscal 2010-11, the City did not generate sufficient amount of Net Revenues in order to meet the rate covenant as stated on the 2002 Water Revenue Refunding Bonds Official Statements. The coverage over debt service was one hundred and ten percent (110%) in current year.

Effect: Subsequent to the year-end, the bonds were downgraded from AA to A+ under standard and Poor's rating.

Cause: We were told by management that the water rates have not been adjusted in the last five years while water sales have declined over the years.

Recommendation: We understand that the City is conducting a rate study in fiscal year 2011-12. Including in the rate study, the City should take into consideration the Net Revenues requirement as stated in the official statements.

Management's Response: Management is aware that net revenues were not sufficient to meet the 120 percent debt coverage calculation in fiscal year 2010-11. The Net Revenues requirement as provided in the bond financing documents will be considered during the upcoming water rate analysis.

2011-02: Review of Journal Entries

Criteria: All journal entries should be properly approved by someone other than the preparer prior to posting to the general ledger.

Condition: During our testing of internal control over the City's journal entries process, we reviewed sixteen journal entries for proper approval. Out of the selection, we noted that eleven of them were approved by another employee after the entries were posted to the system.

In addition, we noted that the City does not have procedures in place to ensure that all journal entries posted are reviewed. Journal entries are given individually to the reviewer for review. The numerical sequence is not accounted for as part of the review.

Effect: The City's current practice makes it possible for journal entries to be posted without being reviewed.

Recommendation: The City should establish procedures, such as review of journal entry log or implementation of a park-and-post system, to ensure that all journal entries are reviewed by another employee. Also, the review process should occur prior to entries being posted to the general ledger.

Management's Response: Management concurs with the auditor's recommendation. All journal entries are now reviewed by an employee other than the employee preparing the entry prior to posting. The Assistant Finance Director reviews the journal entry log on a regular basis.

CITY OF BENICIA
MEMORANDUM OF INTERNAL CONTROL

SCHEDULE OF OTHER MATTERS

During the audit, we also noted the following matters that we would like to bring to the attention of the City Council:

2011-03: Benicia Marina Enterprise Funds Fund Deficit

During fiscal 2008-09, an advance in the amount of \$160,321 was made from the General Fund to the Benicia Marina Fund to finance expenses related to modifications to the City's storm water system that impacted the Benicia Marina Basin. The advance was to accrue interest at the portfolio earnings rate at the time and was to be fully repaid by 2028. The Benicia Marina Fund had planned to begin repaying the loan to the General Fund when the outstanding loans due to the Department of Boating and Waterways were paid off. The outstanding balance was \$164,826 as of June 30, 2010. In fiscal 2010-11, the advance was written off due to the financial situation of the Benicia Marina Fund. We were not able to trace the write off decision to formal authorization. The write off was initiated by City staff.

Moreover, the Benicia Marina Fund receives rental revenue from the Benicia Harbor Corporation (Corporation). According to the Restated and Amended Benicia Marina Lease Agreement between the City and the Corporation, dated April 22, 1990, the Corporation is required to pay the City a Minimum Annual Rent payment or a percentage of Gross Receipts, both as defined in the Agreement, whichever is greater, on an annual basis. During the audit, we examined the most recent rental revenue calculation submitted by Corporation. The calculation detailed the Corporation's calculation of the Gross Receipts. However, the City did not confirm the accuracy of the Gross Receipts by requesting any supporting documents from the Corporation. In addition, in fiscal 2009-10, the Corporation failed to initiate and complete their dredging commitment and have claimed that it was due, in part, to the City's inability to acquire a California Dredging Permit in a timely manner. As a result, the Corporation started to withhold revenue that should have been submitted to the City. At June 30, 2011, the amount withheld by the Corporation was \$189,519.

The Marina Fund had deficit net assets of \$173,855 as of June 30, 2011. The City should continue to work with the Corporation for revenue collection and to work towards a balanced budget. In addition, since the City relies on the Gross Receipts calculation submitted by the Corporation, the City should examine the Corporations' financial records annually to verify the accuracy of the calculation. Moreover, the City should develop formal procedures in writing off of loans to prevent the possibility of unauthorized loan forgiveness. Lastly, the City should evaluate the nature of the Benicia Marina Fund since the City's General Fund has been subsidizing the Marina's operation and modified the fund type if necessary.

Management's Response: Management concurs with the auditor's recommendation. Finance Department staff did review the financial records of the Benicia Harbor Corporation in October 2011 to verify the gross receipts calculation. In the future, City Council authorization will be requested for loan write-offs. Finally, the status of the Marina Fund will be discussed with the City Council during the upcoming MidCycle Budget Review.

REQUIRED COMMUNICATIONS

ACCOUNTANCY CORPORATION
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(925) 930-0902 • FAX (925) 930-0135
maze@mazeassociates.com
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December 2, 2011

To the City Council of
the City of Benicia, California

We have audited the financial statements of the City of Benicia as of and for the year ended June 30, 2011 and have issued our report thereon dated December 2, 2011. Professional standards require that we advise you of the following matters relating to our audit.

Financial Statement Audit Assurance: Our responsibility, as prescribed by professional standards, is to plan and perform our audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit in accordance with generally accepted auditing standards does not provide absolute assurance about, or guarantee the accuracy of, the financial statements. Because of the concept of reasonable assurance and because we did not perform a detailed examination of all transactions, there is an inherent risk that material errors, fraud, or illegal acts may exist and not be detected by us.

Other Information Included with the Audited Financial Statements: Pursuant to professional standards, our responsibility as auditors for other information in documents containing the City's audited financial statements does not extend beyond the financial information identified in the audit report, and we are not required to perform any procedures to corroborate such other information. Our responsibility also includes communicating to you any information that we believe is a material misstatement of fact. Nothing came to our attention that caused us to believe that such information, or its manner of presentation, is materially inconsistent with the information, or manner of its presentation, appearing in the financial statements. This other information and the extent of our procedures is explained in our audit report.

Accounting Policies: Management has the responsibility to select and use appropriate accounting policies. A summary of the significant accounting policies adopted by the City is included in Note 1 to the financial statements. There have been no initial selections of accounting policies and no changes in significant accounting policies or their application during 2011. As described in notes to the financial statements, during the year, the City implemented the following new standards:

- **GASB Statement No. 54 – Fund Balance Reporting and Governmental Fund Type Definitions** -- This Statement established fund balance classifications that comprise a hierarchy based primarily on the extent to which a government is bound to observe constraints imposed upon the use of the resources reported in governmental funds. The City's financial statements, as well as Note 8 to the financial statements, were modified to include required disclosures.

Retention Issues: We did not discuss any major issues with management regarding the application of accounting principles and auditing standards that resulted in a condition to our retention as the City's auditors.

Difficulties: We encountered no serious difficulties in dealing with management relating to the performance of the audit.

Audit Adjustments: For purposes of this communication, professional standards define an audit adjustment, whether or not recorded by the City, as a proposed correction of the financial statements that, in our judgment, may not have been detected except through the audit procedures performed. These adjustments may include those proposed by us but not recorded by the City that could potentially cause future financial statements to be materially misstated, even though we have concluded that the adjustments are not material to the current financial statements.

We did not propose any audit adjustments that, in our judgment, could have a significant effect, either individually or in the aggregate, on the City's financial reporting process.

Uncorrected Misstatements: Professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that are trivial, and communicate them to the appropriate level of management. We have no such misstatements to report to the Council.

This report is intended solely for the information and use of the audit committee, City Council, and management and is not intended to be and should not be used by anyone other than these specified parties.

Maze & Associates

Colantuono & Levin, PC

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Michael G. Colantuono
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(530) 432-7359

MEMORANDUM

TO: Heather McLaughlin, City Attorney
City of Benicia
250 East "L" Street
Benicia, CA 94510

FILE NO: 12109.0002

FROM: Michael G. Colantuono, Esq.
Jon R. di Cristina, Esq.

DATE: September 13, 2012

RE: Discounted Water Rates for Senior Citizens

INTRODUCTION AND SUMMARY OF CONCLUSIONS. As you asked, we write to express our opinion on the means available to the City to fund discounted water rates for senior citizens. To the extent such subsidies are funded by rates paid by other water customers, those customers' fees will necessarily exceed the cost of service. Rates which exceed the cost of service require voter approval as taxes under Propositions 13 and 218. Accordingly, senior-citizen discounts must be approved by voters as taxes, financed with general fund monies, or funded with discretionary non-rate water utility revenues. This last option involves some legal risk, as detailed below.

ANALYSIS. In general, rates in excess of the cost of providing service are characterized as taxes. *City of Dublin v. County of Alameda* (1993) 14 Cal.App.4th 264. Thus, in *City of Dublin*, the trial court held that a surcharge of \$6 per ton levied on materials deposited in county landfills was a special tax which required two-thirds voter approval under Proposition 13.¹ See also *California Assn. of Professional Scientists v. Dept. of Fish & Game* (2000) 79 Cal.App.4th 935 (regulatory fee was not a special tax because fees collected did not exceed costs of regulatory program, and allocation among payors had a reasonable basis in the record). The fact that some ratepayers are

¹ The Court of Appeal reversed the trial court, concluding that the surcharge was a regulatory fee. Nevertheless, the trial and appellate courts agreed that a charge which does not meet the requirements for fees is a tax requiring voter approval

subsidizing the cost of service to others indicates that burdened ratepayers are required to pay more than the cost of service. Such excess water charges constitute taxes and require voter approval. If the senior discount is presented to voters, it will require two-thirds voter approval under Proposition 13 because the rate proceeds will be earmarked for water rate subsidies for senior citizens. Alternatively, if the tax is presented as a general tax imposed for general governmental purposes, it would require only majority voter approval under Proposition 218.² Accordingly, unless the City obtains voter approval, it must discontinue the senior citizen discount, or fund it from non-rate revenues.

I. Charges for ongoing water utility service may not exceed the cost of that service

The leading case on this subject under Proposition 13³ is *Beaumont Investors v. Beaumont-Cherry Valley Water District* (1985) 165 Cal.App.3d 227, 238 which concluded that, in the absence of proof that a water facilities fee did not exceed the cost of the service for which it was imposed, it was illegal unless approved by two-thirds of voters as a special tax:

Here, there is no evidence in the record from which we could conclude that the facilities fee 'does not exceed the reasonable cost of providing the service ... for which the fee is charged' (Gov. Code, § 50076.) Therefore, we must hold that the facilities fee constitutes a 'special tax' within the meaning of Proposition 13. As the fee has not been submitted to the electorate and approved by two-thirds of the qualified electors in the district, it was enacted in violation of Proposition 13, and thus may not be enforced against plaintiff.

Moreover, when California voters adopted Proposition 218 in 1996, that measure imposed additional restrictions on fees for property related services imposed "as an incident of property ownership." Cal. Const., art. XIII D, § 2(e). In *Bighorn-Desert View Water Agency v. Verjil* (2006) 39 Cal.4th 205, the California Supreme Court declared that charges for ongoing water delivery to existing customers are property related fees

² Proposition 218 added Articles XIII C and XIII D to the California Constitution. Voter approval requirements for general and special taxes are set forth under Article XIII C, section 2, subdivisions (b) and (d), respectively.

³ Article XIII A, section 4 of the California Constitution requires two-thirds voter approval of special taxes. Government Code section 50076 defines "special tax" to exclude only those fees which do not exceed the cost of the service or regulatory program for which they are imposed.

imposed as an incident of property ownership and therefore subject to Proposition 218.
Id.

Accordingly, fees imposed for ongoing water delivery to existing customers must meet the following requirements of Proposition 218: (1) revenues from them may not exceed the costs of providing the service, nor may those revenues be used for any purpose other than water delivery, and (2) the fee imposed on any parcel or person may not exceed the proportional cost of the service attributable to that parcel. Cal. Const., art. XIII D, §§ 6(b)(1)–(3).

If service to senior citizens is subsidized by other ratepayers, fees imposed upon those other ratepayers are necessarily greater than the cost of service and thus violate Proposition 218 unless approved by two-thirds of voters as a special tax. The level of voter approval required depends upon the manner in which this tax is presented to voters. If it is presented as a special tax to fund water subsidies, it will require approval by two-thirds of the electorate under Propositions 13 and 218. Alternatively, if it is presented as a general tax to be used for general governmental purposes (perhaps accompanied by an advisory measure by which voters advise the City to use tax proceeds to fund senior water rate discounts),⁴ only majority approval will be required under Propositions 62⁵ and 218.

II. Options for retaining the subsidy for senior citizens

The City has these options for retaining its subsidy for water utility services for senior citizens:

- The City could obtain voter approval for the tax imposed on other ratepayers to subsidize rates for senior citizens. As noted above, the level of voter approval required depends on the manner in which the tax is presented to voters. A special tax to fund water subsidies would require two-thirds approval, whereas a general tax for general government purposes would require majority approval. Cal. Const., art. XIII C, § 2, subds. (b) & (d). If the City chose to pursue approval of a general tax, the associated election would have to be consolidated with a regularly

⁴ Such so-called “Measure A / Measure B” proposals were found not to constitute special taxes under *Coleman v. County of Santa Clara* (1998) 64 Cal.App.4th 662.

⁵ Government Code section 53723, adopted by Proposition 62 in 1986, requires majority voter approval for general taxes of general law cities like Benicia.

scheduled election for members of the City Council. *Id.* (providing an exception only in cases of an emergency declared by unanimous vote of the relevant governing body). Revenue from a general tax would be paid into the General Fund, from which the City could finance water subsidies.

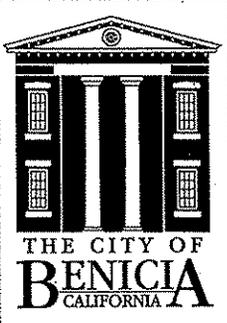
- The City could fund the subsidy to senior citizens with funds other than the proceeds of water rates such as general fund dollars or other discretionary revenues.
- The City might fund the subsidy from water utility revenues that do not come from rates. These might include the proceeds of wholesale transactions or interest and penalties on late payments. Some risk arises from this approach, however. There are cases which hold that “interest follows principal,” meaning that legal restrictions on a principal sum (water rate liabilities, for example) also extends to interest on that sum (like interest for late payment). A stronger argument can be made that penalties are not subject to this restriction,⁶ but some risk remains, especially if a late penalty can be characterized as a form of interest.
- The City could discontinue the rate discount but alter the ratio of fixed to volumetric fees so that small water users (which will likely include many senior citizens) pay relatively less than larger users. It can be analogized to a “small can rate” for trash service that allows a lower rate for a smaller can often used by senior citizens. This will not accomplish the City’s goal of maintaining a senior discount labeled as such, and it will make the City’s water utility revenues more volatile across the year and across the drought cycle by moving funds from fixed to variable rates.

⁶ Proposition 26, adopted in November 2010 defines all revenue measures “imposed” by local governments as taxes requiring voter approval unless one of seven stated exceptions applies. The fifth of these is for “a fine, penalty, or other monetary charged imposed by ... a local government, as a result of a violation of law.” Cal. Const., art. XIII C, § 1(e)(5). This provides the basis of a persuasive argument that penalties for late payment of water bills generate discretionary revenue.

Heather McLaughlin, Benicia City Attorney
September 13, 2012
Page 5

CONCLUSION. In short, senior rate discounts may not be funded from the proceeds of rates paid by other customers without voter approval. Accordingly, such discounts should be discontinued or funded from non-rate revenues.

Thank you for the opportunity to assist in this matter. If we can provide any further assistance, please do not hesitate to contact Michael at (530) 432-7359 or MColantuono@CLLAW.US or Jon at (530) 798-2991 or JdiCristina@CLLAW.US.



Information on Benicia's Health, Safety, and Financial Integrity

Dear Neighbor:

Ensuring a clean, reliable water source and a safe wastewater (sewer) disposal system is a responsibility the City takes seriously.

Our local water supply must be properly maintained and protected to ensure clean, safe drinking water and an adequate water supply in the event of an earthquake, fire or catastrophic emergency. Benicia's sewer system must be properly maintained to prevent sewage spills that present a health risk to the community, place the City at risk for regulatory fines and lawsuits, and can damage the Carquinez Strait.

Unfortunately, Benicia has aging water and sewer systems and action is needed. Our systems include aging clay and asbestos cement pipes and other deteriorating infrastructure that dates back to the 1930's. Additionally, Benicia's plants have important monitoring equipment, pumps, and other major capital items that cannot be easily repaired, due to age of materials, and must be upgraded to ensure safety.

Evolving state and federal regulations that our water and sewer systems are subject to are also impacting our systems. Benicia must stay in compliance with all required mandates or face costly fines or environmental lawsuits.

In the coming months, the City will be considering rate changes to ensure the health and safety of the community and to protect the City's financial health. To contain costs and minimize ratepayer impact, City staff is working to ensure that only those projects absolutely necessary for continued safe service are included in any proposed rate adjustments.

We have enclosed frequently asked questions to better inform you of this important issue.

Sincerely,

Brad Kilger, City Manager

Melissa Morton, Public Works Director

INSIDE: Frequently Asked Questions

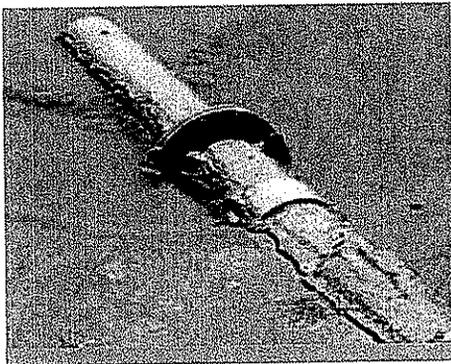
BACK: Message from Fire Chief

V.A.47

PROTECTING OUR HEALTH, SAFETY, AND FINANCIAL INTEGRITY

Q: What is the issue?

A: Our underground water and sewer infrastructure is old – including aging clay and asbestos cement pipes, and other deteriorating infrastructure. If a major earthquake struck, we could be in jeopardy of losing access to our main water source. Additionally, Benicia's plants have important monitoring equipment, pumps, and other major capital items that cannot be easily repaired, due to age of materials, and must be upgraded to ensure safety.

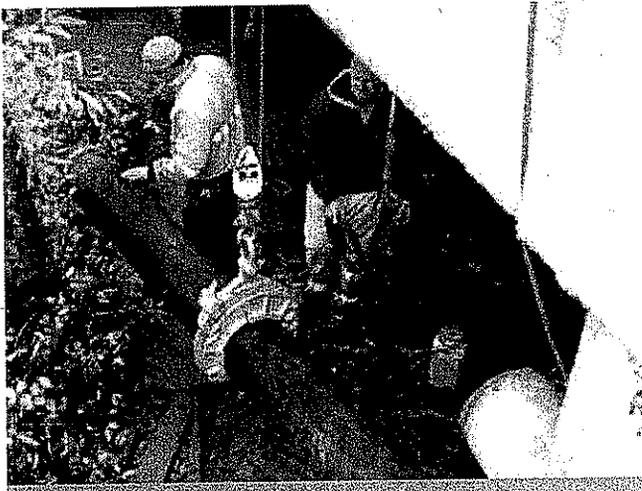


Q: Why is this a health and safety issue?

A: By law and for the health and safety of our residents, we must stay current with the proper treatment and purification of our water and wastewater, which is costly under evolving and more stringent mandates. If raw sewage spills onto land or into water, it can present a health risk to our community and damage the Strait.

Q: How does this impact businesses and economic development?

A: Access to reliable water is essential to many of Benicia's key businesses. One day without access to water could cause massive economic impact – similar to the impact of a power outage. Additionally, a reliable source of water is necessary for local economic revitalization projects and attracting new businesses into Benicia's Industrial Park and other areas.

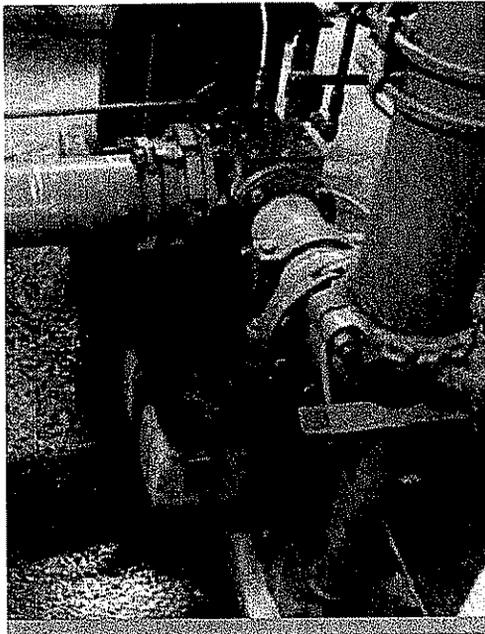


Q: Why do we need to do this now?

A: The last time water and sewer rates were changed was more than 6 years ago and they now need to be adjusted to keep pace with the cost of providing services. Rates are currently at or below the rates of other cities in our region. Furthermore, rising waste disposal costs and evolving state and federal regulations also impact our aging water and sewer systems. Benicia must stay in compliance with all required mandates or face costly fines or environmental lawsuits.

Q: What are the consequences of not acting now?

A: Besides the health and safety dangers, without rate adjustments, our water and sewer reserve funds will be completely depleted by July 2014. Unless we act, the general fund used for critical community service needs such as police and fire protection will be impacted. Additionally, Standard and Poor's has already downgraded the City's credit rating specifically because the Water and Wastewater Funds are not generating enough revenue. An independent auditor has informed the City that rate adjustments will be necessary to restore its credit rating.



Q: What is the City doing about this?

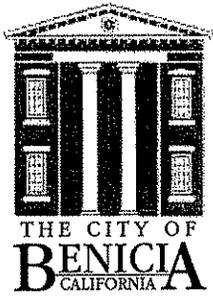
A: Benicia is working closely with independent experts to prepare updated rates for consideration by the community. Only projects absolutely necessary for continued safe service will be included in any proposed rate adjustments, which are expected to be on average only \$2.50 per month for water and approximately \$4.50 per month for sewer, beginning in January (for a single family residence). These would be adjustments to the water/sewer rates already in place and they are not new taxes. All affected community members will be notified by mail of any potential rate changes.

Q: Where do I learn more?

A: For more information on the City's efforts to protect our community's health, safety, and financial integrity, visit Benicia's website at www.ci.benicia.ca.us, call 707-746-4380, or email WaterSewerQuestions@ci.benicia.ca.us.



FREQUENTLY ASKED QUESTIONS



250 East L Street
Benicia, CA 94510

PRESORT STANDARD
U.S. POSTAGE
PAID
ADMAIL



MESSAGE FROM BENICIA FIRE CHIEF STEVE VUCUREVICH



Fire Chief Steve Vucurevich

Benicia must maintain its water and sewer systems for the health and safety of our residents and businesses.

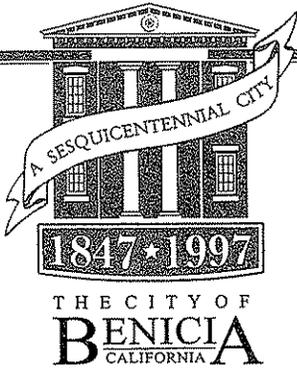
Quick access to adequate water is an essential part of firefighting and can dramatically reduce the overall damage done by a fire.

Aging pipes and infrastructure must be properly maintained or replaced in order to secure the community's safety.

*Secure access
to water is
essential to fight
devastating fires
such as this one
that struck one
of our local
businesses
in 2007.*



V.A.50



September 5, 2012

Dear

In early August, the *Vallejo Times Herald* ran an article you may have seen referencing the fact that concerned environmentalists have "...threatened to sue the city under the Clean Water Act if it doesn't improve its aging sewer system."

Unfortunately, it is true that Benicia does have an aging sewer system and action is needed. Both our water and sewer systems are critical to our community's health, safety and financial integrity.

Our local water supply must be properly maintained and protected to ensure clean, safe drinking water and a secure, adequate water supply in the event of a major earthquake, fire or catastrophic emergency. Our sewer system must be properly maintained in order to prevent sewage spills that present a health risk to residents and businesses, place the City at risk for regulatory fines and can damage the Carquinez Strait – and, as the *Vallejo Times Herald* article clearly identifies, places the City at financial risk.

Additionally, clean safe drinking water and a properly maintained sewer system is not only a health issue for residents, but is necessary for local economic revitalization projects. For example, an adequate water source is necessary for the attraction of new businesses into Benicia's Industrial Park.

The City has retained independent experts to examine potential rate adjustment options for both our water and sewer systems to implement necessary upgrades and repairs. The last time rates were adjusted was over 6 years ago.

Pursuing rate adjustments is not only necessary to adequately maintain our system for the health and safety of our residents, but it is a fiscally prudent decision for the City's financial health. Standard & Poor's has downgraded the City's credit rating specifically because the Water and Wastewater Funds are not generating enough revenue. An

independent auditor has informed the City that rate adjustments will be necessary to restore the City's credit rating.

To contain costs and minimize ratepayer impact, City Staff is working to ensure that only the absolutely necessary projects -- projects that are required to ensure continued safe service -- are included in the proposed rate adjustments.

In the coming weeks, City Staff will present important information about Benicia's critical water and wastewater systems needs and the steps the City is taking to protect the community's health, safety, and our City's financial integrity to community groups throughout town. If you are part of an organization or community group that would like to learn more, please contact us and we will arrange a speaking engagement. We have also enclosed frequently asked questions about Benicia's Water and Wastewater Systems.

As always, we welcome your feedback and comments on these important issues of concern to us all. For more information, please visit Benicia's website at www.ci.benicia.ca.us, call 707-746-4380 or email WaterSewerQuestions@ci.benicia.ca.us.

Sincerely,



Brad Kilger, City Manager



Melissa Morton, Public Works Director

Benicia's Water and Wastewater Systems

Protecting our Health, Safety, and our City's Financial Integrity

Frequently Asked Questions

Q: Why is this issue important?

A: The quality, safety, and security of our local water supply and the proper maintenance of our wastewater (sewer) system is essential to our community's health, safety, and financial integrity. Our local water supply must be properly maintained and protected to ensure clean, safe drinking water and secure, adequate water capacity in the event of a major earthquake, fire, or catastrophic emergency. Our sewer system must be properly maintained in order to prevent sewage waste spills that present a health risk to residents and businesses and can damage the Carquinez Strait. Without adequate funds to maintain our water or sewer systems, the health and safety of our community is at risk, as is our economic future.

Q: How is our water or sewer system at risk?

A: Our underground water and sewer infrastructure is old – our system includes aging clay pipes, asbestos cement pipes, and other deteriorating infrastructure that dates back to the early 1930's. If a major earthquake struck, we could be in jeopardy of losing access to our main water source. Additionally, our plants have important monitoring equipment, pumps, and other major capital items that cannot be easily repaired, due to age of materials, and must be upgraded to ensure safety. Currently, Benicia has only been completing the most essential projects to keep the systems running, nothing more.

Q: Why is this a health and safety issue?

By law and for the health and safety of our residents, we must stay current with the proper treatment and purification of our water and wastewater, which is costly under evolving and more stringent mandates. If raw sewage spills onto land or into water, it can present a health risk to our community and damage the Strait. To protect the community, the City must also have a secure, adequate water supply, in the case of an emergency or fire.

Q: Why isn't there enough money for our water and sewer systems?

A: Federal and State Water Quality standards and requirements have continued to evolve and become more stringent to protect public health. Like other California cities, Benicia has no choice but to legally comply with these state and federal regulations or risk fines and environmental lawsuits. Benicia must also deal with rising treatment and disposal costs. Chemical costs to properly treat drinking water have risen substantially. Disposal of sludge and solids at the landfill has risen 4-5 times in cost over the last 5 years, as has the required regulatory safety testing of those byproducts. Additionally, the last time water and sewer rates were changed was more than 6 years ago and they now need to be adjusted to keep pace with the cost of providing services. Rates are currently at or below the rates of other cities in our region.

Q: What are the consequences of not acting now?

A: Besides the health and safety dangers, without rate adjustments, our water and sewer reserve funds will be completely depleted by July 2014. Unless we act, the general fund used for other critical

community service needs such as police protection will be impacted. Additionally, Standard and Poor's has already downgraded the City's credit rating specifically because the Water and Wastewater Funds are not generating enough revenue. An independent auditor has informed the City that rate adjustments will be necessary to restore its credit rating. Furthermore, without proper maintenance of our sewer system, Benicia is at risk of future spills or overflows, which could cause unforeseen health risks, property damage, or significant fines by regulatory agencies.

Q: How does this impact businesses and economic development?

A: Access to reliable water is essential to many of Benicia's key businesses. One day without access to water could cause massive economic impact - similar to the impact of a power outage. Additionally, clean, safe drinking water is not only a health issue for residents, but a consistent reliable source of water and a properly maintained sewer system is necessary for local economic revitalization projects. For example, an adequate water source is necessary for the attraction of new businesses into Benicia's Industrial Park and other areas.

Q: What is the City doing about this?

A: Benicia is working closely with independent experts to prepare updated rates for consideration by the community. Only projects absolutely necessary for continued safe service will be included in any proposed rate adjustments, which is expected to only be on average only \$2.50 per month for water and approximately \$4.50 per month for sewer, beginning in January (for a single family residence). These would be adjustments to the water/sewer rates already in place and it is not a new tax. All affected community members will be notified by mail of any potential rate changes.

Q: Where do I learn more?

A: For more information on the City's efforts to protect our community's health, safety, and financial integrity, visit Benicia's website at www.ci.benicia.ca.us, call 707-746-4380 or email WaterSewerQuestions@ci.benicia.ca.us.

To the City Council

We believe Benicia has a significant challenge with the Water/Wastewater rate increase. Building and maintaining credibility with the citizenry is critical to a successful campaign. We recommend the following:

The first order of business is to confirm we have explored every single option available before embarking on such a significant rate increase.

We must confirm that we have clear lines around each Enterprise Fund accounting for all of the revenue and expense.

1. Review all loans between Enterprise and General Fund; confirm they are appropriate.
2. Review all revenue streams to confirm all revenue or prorated revenue generated on or in behalf of an Enterprise is credited to that Enterprise.
3. Review all revenue streams to confirm that all costs or prorated cost generated on or in behalf of an Enterprise is charged to that enterprise.
4. The 2006 Court Decision rendered our revenue discount policies illegal. Be very candid and explain why no effort was made to correct the problem then and there. Conservative estimates are that the City lost \$400,000 per year for the past 6 years that would have gone a long way to offset or mitigate significant rate increases now. In addition, it most likely would have allowed us to avoid a downgrade in our credit rating. Failure to explain this erodes the credibility of the City Council and the mantra that the City's number one goal is health and safety of our citizens.
5. Assure our Seniors, over 65 or below poverty level, that a plan will be introduced concurrent with the rate increases to help them with or eliminate any increase. This commitment must be met or the community will not be supportive of the rate increase effort.
6. Be more than forthright on the negative declaration process outlined by the ballot process required by Proposition 218. Tell everyone, as often as you can, that failing to return the ballot is a yes vote for a rate increase. Failure to receive 50% plus 1 guarantees a rate increase. The increase will pass but the public will more likely trust those that tell them the truth about the process.
7. Must have a new Debt Service Coverage Policy that is distinguished from the Reserve Policy.
8. Recommend the Finance Committee henceforth has oversight of the Enterprise funds consistent with oversight of the General Fund.
9. The Finance Committee understands the Master Plans have been appropriately vetted and approved and the Committee has not reviewed these plans and accepts them as given.
10. The PAYGo recommendation should be reviewed in the future to determine if it continues to be an appropriate policy.

11. Request some level of detail that the recommendation is consistent with the long-term needs of the City and on track to ensure no surprises five years out.
12. The City Council ought to hear what transpired over the last 5-6 years regarding why rates were not increased prior to now.

These comments were discussed and approved by the Finance Committee at its meeting on September 18, 2012.

**CITY OF BENICIA
WASTEWATER RATE STUDY**

**FINAL DRAFT REPORT
September 25, 2012**

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Table of Contents

INTRODUCTION1

WASTEWATER ENTERPRISE2

 The Wastewater System..... 2

 System Improvements..... 2

 Wastewater Customers..... 2

 Customer Billings 4

 Cost Allocation 5

 Wastewater Enterprise Finances 7

 Revenues and Expenses 7

 Debt Service..... 8

 Capital Reserves..... 9

 CIP Projections 9

 Required Vehicle Purchases 9

 Cost Reduction Efforts..... 10

 Revenues-Expenses Projections (No Rate Increase) 10

WASTEWATER RATE SCENARIOS.....11

 Expense Escalation Assumptions 11

 Rate Study Objectives..... 12

 Assumptions..... 12

 Alternative Rate Scenarios..... 12

 Recommended Scenario..... 13

 Reserve Fund Financing 15

RATE SETTING LEGISLATION AND PRINCIPLES.....16

 Proposition 218 16

 Rate Development Principles..... 17

 Casa de Vilarrasa 17

 BWA Rate Recommendations 17

WASTEWATER CONNECTION FEES18

 Current Connection Fees..... 18

 Costs Related to New Connections..... 19

 Findings..... 19

CONCLUSION.....21

APPENDIX A: CAPITAL IMPROVEMENT PROGRAM	23
APPENDIX B: DEBT SERVICE SCHEDULE	24
APPENDIX C: REQUIRED VEHICLE PURCHASES	25
APPENDIX D: EXPENSE DETAILS.....	26
APPENDIX E: RECOMMENDED SCENARIO REVENUE SCHEDULE	28
APPENDIX F: RECOMMENDED SCENARIO CASH FLOW.....	29

List of Tables

TABLE 1 - CUSTOMER DESCRIPTION	3
TABLE 2 - CURRENT SERVICE CHARGES.....	5
TABLE 3 - O&M COST ALLOCATION	6
TABLE 4 - REVENUES & EXPENSES.....	7
TABLE 5 - RESERVE ACCOUNTS.....	9
TABLE 6 - FIVE-YEAR BUDGET SUMMARY WITHOUT INCREASES.....	10
TABLE 7 - EXPENSE ESCALATIONS	11
TABLE 8 - ALTERNATIVE RATE SCENARIOS.....	13
TABLE 9 - RECOMMENDED RATE INCREASES	14
TABLE 10 - FIVE-YEAR BUDGET SUMMARY WITH INCREASES	14
TABLE 11 - COMMERCIAL CUSTOMER DESCRIPTION	19
TABLE 12 - ENR-CCI UPDATE CALCULATION	20

INTRODUCTION

The City of Benicia (the City) is located in Solano County approximately 35 miles northeast of San Francisco along the north bank of the Carquinez Strait. With an estimated population of 27,900, the City encompasses roughly 15.7 square miles. The City owns and operates a wastewater enterprise (the “Enterprise”) which collects, treats and disposes wastewater for approximately 9,300 individual customer accounts. In 1958, the City completed construction of its wastewater treatment plant on East 5th Street. The plant has been upgraded and expanded in 2000, and Bartle Wells Associates (BWA) performed a wastewater rate study at that time.

Revenues are derived primarily from wastewater rates and they must be adequate to fund the Enterprises’ operating and capital programs. Wastewater rates were last adjusted in 2006. The current wastewater rates and charges appear in the Municipal Code Chapter 13.52. The City has strived to reduce overall expenses by implementing numerous cost-saving measures including staff salary reductions, reducing energy costs and reorganizing the capital improvements program. Despite the City’s best efforts to control costs, expenses naturally increase each year.

The City has retained BWA to review the Enterprise’s finances, project revenues and expenses over a future, 10-year period, and design wastewater rates and charges. BWA’s study develops and recommends changes in the City’s wastewater rates to keep the Enterprise financially sustainable, pay for maintenance and capital projects, comply with credit rating requirements, and satisfy the City’s reserve fund policy¹.

The key tasks of the wastewater rate study include:

- Conducting an independent analysis of wastewater rates and finances;
- Developing cash flow projections incorporating reasonable estimates of future operating expenses and capital improvement projects;
- Recommending rate adjustments for 2012/13 through 2016/17 to support the long-term financial health of the wastewater enterprise;
- Phasing in rate adjustments over time to minimize the annual impact on ratepayers;
- Review and possibly update the wastewater connection fees.

This report presents key findings and recommendations of our study. The recommendations were developed with substantial input from City staff.

¹ Standard & Poor’s credit rating requirements state the Enterprise must have annual revenues to cover 120% of all debt service payments. The City’s reserve fund policy requires the wastewater operating fund to maintain a reserve equal to 20% of current year’s revenue.

WASTEWATER ENTERPRISE

The Wastewater System

The City of Benicia provides wastewater service to about 9,300 connections. The system includes about 150 miles of sanitary sewers, ranging from 6 to 36 inches in diameter, plus manholes, lift stations and other miscellaneous facilities. Approximately 50% of the sewers have been in service for 40 years or more with the oldest pipes installed in the 1930's.

The City is divided into two major systems which collect and transport wastewater to the wastewater treatment plant. The combined system serves approximately 4,200 net acres. One system consists of approximately 3,000 net acres of serviced area and is presently near buildout. The land use in this area is almost completely residential, with single family and multiple dwellings. The other system is primarily industrial, but does include property zoned for residential use. The City's treatment plant receives flow from the two sewer service areas, performs advanced secondary treatment and discharges into the Carquinez Strait.

System Improvements

The City is currently making necessary improvements to the treatment plant and collection system as outlined by the City's Wastewater Master Plan. The plant requires regular improvements, maintenance and repairs, including an electrical system overhaul. Some components are nearing the end of their useful lives and need replacement. These include odor scrubber media and piping, belt filters, separator gates, pumping components and other minor projects. The five-year total of expected plant improvement projects is approximately \$1.36 million. The collection system has sewer main replacement and rehabilitation projects with a five-year total of expected costs to be approximately \$1.95 million. The total expected five-year capital improvement program (CIP) is approximately \$3.32 million, or an average of \$664,000 per year. The complete five-year CIP is presented in Appendix A (Page 23).

Wastewater Customers

Table 1 summarizes the City's wastewater customers and estimated wastewater flows based on water use. The categories shown in the table are based on the City's customer types for water and sewer services. Residential customers are billed per equivalent dwelling unit (EDU), and commercial customers are proportionally based upon the business class. A more detailed description of how EDU's are determined is discussed in the next section.

Table 1. Customer Description		
Residential Customers		
	<u>Accounts</u>	<u>Dwelling Units</u>
Single Family Residence	8,380	8,380
Multi Family Residence [1]	304	2,539
<u>Mobile Homes</u>	<u>13</u>	<u>276</u>
Total Residential Customers	8,697	11,195
Commercial/Industrial Customers		
<u>SIC Business Type</u>	<u>Accounts</u>	<u>Total EDU [2]</u>
1 Unclassified	2	86.1
2 Unknown	37	84.3
233 Building, Developing, and General Contracting	4	6.3
234 Heavy Construction	4	8.3
235 Special Trade Contractors	17	47.4
311 Food Manufacturing	2	109.1
312 Beverage and Tobacco Product Manufacturing	2	6.1
321 Wood Product Manufacturing	3	3.0
324 Petroleum and Coal Products Manufacturing	6	246.4
325 Chemical Manufacturing	4	8.2
326 Plastics and Rubber Products Manufacturing	3	4.0
327 Nonmetallic Mineral Product Manufacturing	1	1.3
332 Fabricated Metal Product Manufacturing	11	33.0
333 Machinery Manufacturing	5	16.7
334 Computer and Electronic Product Manufacturing	2	10.3
337 Furniture and Related Product Manufacturing	1	1.3
339 Miscellaneous Manufacturing	12	23.4
420 Wholesale Trade/Warehouse/Dist	132	483.6
421 Wholesale Trade, Durable Goods	17	59.7
422 Wholesale Trade, Non-Durable	4	6.8
441 Motor Vehicle and Parts Dealers	5	23.5
442 Furniture and Home Furnishings Stores	5	5.3
444 Building Material and Garden Equipment and Supplies	1	1.5
445 Food and Beverage Stores	5	55.2
446 Health and Personal Care Stores	1	4.7
447 Gasoline Stations	7	25.8
448 Clothing and Clothing Accessories Stores	5	6.0
451 Sporting Goods, Hobby, Book & Music Stores	1	1.3
453 Miscellaneous Store Retailers	19	21.8
484 Truck Transportation	3	5.1
488 Support Activities for Transportation	2	2.7
493 Warehousing & Storage	1	1.3
511 Publishing Industries	2	3.7
521 Monetary Authorities - Central Bank	2	4.0
522 Credit Intermediation and Related Activities	2	2.0
531 Real Estate	16	43.1
532 Rental and Leasing Services	6	20.6
540 Professional, Scien, Tech Svcs	1	1.0
541 Professional, Scientific, and Technical Services	16	27.4
551 Management of Companies and Enterprises	1	1.3
561 Administrative and Support Services	3	3.8
562 Waste Management and Remediation Services	11	21.7
611 Educational Services	14	58.5
621 Ambulatory Health Care Services	10	22.3
624 Social Assistance	3	18.0
712 Museums, Historical Sites, and Similar Institution	2	4.4
713 Amusement, Gambling, and Recreation Industries	5	11.7
722 Food Services and Drinking Places	35	162.9
811 Repair and Maintenance	16	21.6
812 Personal and Laundry Services	20	31.9
813 Religious, Grantmaking, Civic, Professional	21	44.5
921 Executive, Legislative, and Other General Government	3	13.0
922 Justice, Public Order, and Safety Activities	2	19.1
6211 Offices of Physicians	1	2.0
81131 Commercial and Industrial Machinery and Equipment	1	13.2
1234567 <u>Pending</u>	<u>5</u>	<u>6.0</u>
Total Commercial Customers	522	1957.4
Municipal Customers		
	<u>Accounts</u>	<u>Total EDU</u>
City of Benicia	24	62.4
TOTAL	9,243	13,215
Note: 19 vacant unit accounts have been removed from the commercial customer list		
[1] The Casa de Villarrassa accounts are included in the multi-family residents		
[2] One EDU contains 250 gallons per day of wastewater flow		

Customer Billings

Residential customers are billed bimonthly at a single family residential (SFR) monthly rate of \$41.33, except for Casa de Vilarrasa residents who pay a discounted rate of \$13.33, and were last adjusted in 2006. The SFR rate forms the unit cost basis of all sewer service charges and is hereby referred to as an “equivalent dwelling unit” (EDU). A single EDU is defined as the discharge of 200 gallons per day (gpd) of sewage flow (or 250 gpd of water consumed, based on winter water usage) with strengths for biological oxygen demand (BOD) and total suspended solids (TSS) of 200 mg/l each. The “strength factor” is the standardized calibration of BOD and TSS to a residential unit, and is equal to 1.00 for residential units. The proportional share of each component is determined by allocating expenses to each component. This process is described in more detail in the Cost Allocation section of this report. Currently, the City allocates 65% of costs to flow, 17% to BOD and 18% to TSS.

The calculation of EDUs to be assigned to individual users of the sewer system is based on the EPA-approved formula:

$$EDU = \frac{gpd}{200} * Strength\ Factor$$
$$= \frac{gpd}{200} * \left[0.65 * flow + 0.17 * \frac{BOD}{200} + 0.18 * \frac{TSS}{200} \right]$$

All other users are billed based upon their proportional use of the sewer system as measured by metered water use and standardized strength factors for each customer class. Each non-residential customer is individually assessed by the City to determine the appropriate strength factors. The minimum charge assessed on any customer is the SFR rate for one EDU per month.

Commercial and industrial customers are classified as either domestic strength or high strength users and are assigned strength factors shown in Table 2, which summarizes the City’s current wastewater rates. A mixed use space will have strength factors allocated in proportion to square footage. For example, a market with a small deli may be assigned 1.0 for 65% of the market space for domestic strength and 1.9 for the 35% area that is a market with a disposal. The resulting 1.3 strength factor is a weighted function based on the above assessment and is found by:

$$Strength\ Factor = 1.0 * 0.65 + 1.9 * 0.35 = 1.3$$

Table 2. Current Service Charges	
Residential	
Montly sewer service charge per EDU	\$41.33
Charge applies to:	
Single Family Dwellings	
Multiple Dwellings	
Rental Space in Mobile Home Park	
Commercial and Industrial	
Levied service charges per EDU based on EDU assignments:	<u>EDUs</u>
Hotel/Motel with Kitchen	1.0
Hotel/Motel without Kitchen	0.6
250 gpd per day of water use	1.0
Minumum EDUs based on meter size (except hotel/motel)	
	Minimum
<u>Meter Size</u>	<u>EDUs</u>
3/4"	1.00
1"	1.33
1 1/2"	2.00
2"	2.67
3"	3.99
4"	5.33
6"	8.00
Strength Factors:	
Charges for high strength customers are multiplied by strength factors	
	Strength
<u>User Type</u>	<u>Factor</u>
Medical Clinics, Professional Buildings	1.1
Restaurants	1.9
Markets with Disposal	1.9
Mortuaries with Process	1.9
Auto Steam Cleaning	1.9

Cost Allocation

In order to determine the cost of service to various customer classes, operating and capital expenses are allocated to three parameters which influence the cost of service. These parameters are flow, BOD and TSS; from the EDU equation. Table 3 summarizes the current two-year budget, O&M and debt service costs, and allocates these costs to the three parameters. The allocated costs are then used to calculate the weighted average of cost allocation. The results show the City's current allocation of 65% flow, 17% BOD and 18% TSS are still appropriate values to be used in the EDU equation.

Table 3. O&M Cost Allocation							
Projected Expenses		<u>Percent Allocation</u>			<u>Dollar Allocation</u>		
		Flow	BOD	TSS	Flow	BOD	TSS
Amended 2011/12							
Salaries & Benefits	\$2,361,500	50%	25%	25%	\$1,180,750	\$590,375	\$590,375
Contracts & Services	340,400	50%	25%	25%	170,200	85,100	85,100
Maintenance & Repairs	208,800	50%	25%	25%	104,400	52,200	52,200
Power & Pumps	400,200	100%	0%	0%	400,200	0	0
Chemicals	284,500	50%	25%	25%	142,250	71,125	71,125
Material Disposal	119,500	50%	25%	25%	59,750	29,875	29,875
Administration & General	325,500	100%	0%	0%	325,500	0	0
Capital Outlay	301,100	50%	25%	25%	150,550	75,275	75,275
<u>Service Transfers</u>	<u>653,800</u>	<u>100%</u>	<u>0%</u>	<u>0%</u>	<u>653,800</u>	<u>0</u>	<u>0</u>
Total O&M Expenses	\$4,995,300	64%	18%	18%	\$3,187,400	\$903,950	\$903,950
Debt Service							
2001 SRF	\$1,207,800	65%	17%	19%	\$785,070	\$205,326	\$229,482
2005 Refi Bonds	391,600	76%	12%	12%	297,616	46,992	46,992
<u>2007 SRF</u>	<u>733,500</u>	<u>65%</u>	<u>17%</u>	<u>19%</u>	<u>476,775</u>	<u>124,695</u>	<u>139,365</u>
Total Debt Service	\$2,332,900	67%	16%	18%	\$1,559,461	\$377,013	\$415,839
Total Expenses	\$7,328,200	65%	17%	18%	\$4,746,861	\$1,280,963	\$1,319,789
2012/13							
Salaries & Benefits	\$2,418,000	50%	25%	25%	\$1,209,000	\$604,500	\$604,500
Contracts & Services	347,200	50%	25%	25%	173,600	86,800	86,800
Maintenance & Repairs	235,200	50%	25%	25%	117,600	58,800	58,800
Power & Pumps	403,300	100%	0%	0%	403,300	0	0
Chemicals	298,600	50%	25%	25%	149,300	74,650	74,650
Material Disposal	190,500	50%	25%	25%	95,250	47,625	47,625
Administration & General	408,800	100%	0%	0%	408,800	0	0
Capital Outlay	39,900	50%	25%	25%	19,950	9,975	9,975
<u>Service Transfers</u>	<u>661,800</u>	<u>100%</u>	<u>0%</u>	<u>0%</u>	<u>661,800</u>	<u>0</u>	<u>0</u>
Total O&M Expenses	\$5,003,300	65%	18%	18%	\$3,238,600	\$882,350	\$882,350
Debt Service							
2001 SRF	\$1,207,800	65%	17%	19%	\$785,070	\$205,326	\$229,482
2005 Refi Bonds	387,000	76%	12%	12%	294,120	46,440	46,440
<u>2007 SRF</u>	<u>733,500</u>	<u>65%</u>	<u>17%</u>	<u>19%</u>	<u>476,775</u>	<u>124,695</u>	<u>139,365</u>
Total Debt Service	\$2,328,300	67%	16%	18%	\$1,555,965	\$376,461	\$415,287
Total Expenses	\$7,331,600	65%	17%	18%	\$4,794,565	\$1,258,811	\$1,297,637

Wastewater Enterprise Finances

Revenues and Expenses

Sewer service charges are the primary source of revenue for the Enterprise and have not been increased since 2006. Table 4 shows the wastewater enterprise revenues and expenses from the 2009 fiscal year through the present. The table also shows the percent change in revenue earnings for certain line items.

This table shows investment earnings, refunds and industrial pre-treatment revenues are all significantly down for the past four years, but SFR, commercial & industrial and municipal sewer service charges have increased marginally. The revenue from these charges make up approximately 77% of all revenue generated. The table also shows operations and maintenance (O&M) costs have all increased significantly. The decrease in Non-Operating Expenses is due to the temporarily discontinued funding of reserve accounts. The net revenues for all four years are negative even with the reduction in capital expenses.

Table 4. Revenues & Expenses					
	Actual 2008-09	Actual 2009-10	Actual 2010-11	Amended 2011-12	Average Change
Revenues					
Investment Earnings	\$108,360	\$29,825	\$12,540	\$50,000	-53.9%
Residential Sewer	4,092,660	4,080,985	4,090,885	4,110,000	0.4%
Multi-Family Sewer	1,240,650	1,256,670	1,272,285	1,240,000	-0.1%
Mobile Home Sewer	136,655	136,550	136,735	136,000	-0.5%
Casa de Vilarrasa Sewer	12,820	12,810	12,905	12,800	-0.2%
Commercial & Industrial Sewer	1,025,930	788,610	857,185	1,050,000	2.3%
Industrial Accounts	0	0	14,625	0	N/A
Municipal Sewer	26,175	28,790	27,765	28,000	7.0%
Industrial Pretreatment Fees	9,500	2,745	2,660	5,000	-47.4%
Penalties	82,720	80,030	78,515	80,000	-3.3%
Refunds & Rebates	91,735	245	2,150	2,500	-97.3%
<u>Sale of Real/Personal Property</u>	<u>1,505</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>N/A</u>
Revenue Total	\$6,828,710	\$6,417,260	\$6,508,250	\$6,714,300	-1.7%
Expenses					
<i>O&M Expenses</i>					
Salaries & Benefits	\$2,249,410	\$2,113,155	\$2,107,270	\$2,361,500	5.0%
Contracts & Services	207,725	247,700	254,070	340,400	63.9%
Maintenance & Repairs	197,705	165,245	178,775	208,800	5.6%
Power & Pumps	398,320	391,895	410,715	400,200	0.5%
Chemicals	245,120	240,850	233,995	284,500	16.1%
Material Disposal	104,075	103,600	94,545	119,500	14.8%
<u>Administration & General</u>	<u>214,820</u>	<u>229,455</u>	<u>259,475</u>	<u>325,500</u>	<u>51.5%</u>
Total O&M	\$3,617,175	\$3,491,900	\$3,538,845	\$4,040,400	11.7%
<i>Debt Service</i>	\$2,333,111	\$2,330,234	\$2,331,861	\$2,332,900	N/A
<i>Non-Operating Expenses</i>					
Capital Outlay	\$243,515	\$185,665	\$111,515	\$301,100	23.6%
Interfund Transfers	292,165	302,165	0	37,100	-87.3%
<u>Internal Service Charges</u>	<u>465,225</u>	<u>753,665</u>	<u>605,705</u>	<u>616,700</u>	<u>32.6%</u>
Total Capital	\$1,000,905	\$1,241,495	\$717,220	\$954,900	-4.6%
Total Expenses	\$6,951,191	\$7,063,629	\$6,587,926	\$7,328,200	5.4%
Net Revenues	(\$122,481)	(\$646,369)	(\$79,676)	(\$613,900)	

Recently, the City negotiated a reduction in Salaries & Benefit costs. This agreement reduced the 2011/12 S&B costs from about \$2,556,900 to approximately \$2,361,500, saving approximately \$195,000 for that year. These initial savings will compound to effectively save the Enterprise approximately \$476,000 over the next five years. The amended current Enterprise budget is available in Attachment 1.

Debt Service

The wastewater enterprise pays debt service (principal and interest) on three outstanding borrowings. One is the 2005 Wastewater Refunding Revenue Bonds and the other two are SRF loans. Although the City is only obligated to retain 120% of net revenues for debt service coverage on the Bonds, Standard and Poor's rates the Enterprise on retaining 120% for debt service coverage on all outstanding debt.

In September 2005, the City issued the 2005 Wastewater Refunding Revenue Bonds in the amount of \$4,260,000. The proceeds were used to partially finance the refunding of the 1993 Wastewater Refunding Revenue Bonds with an outstanding principal amount of \$4,435,000. The 2005 Revenue Bonds are payable solely from net revenues derived from the Enterprise. The City is obligated to establish sewer rates and charges sufficient to yield net revenues, after payment of O&M expenses, equal to at least 1.2 times the annual debt service for the revenue bond. The bond matures in 2020 and annual debt service is approximately \$392,000.

In 1998, the City negotiated a SRF loan in the amount of approximately \$20,130,000 to finance upgrades for the wastewater treatment plant to control odors, improve reliability, and meet more stringent water quality regulations set by the Regional Water Quality Control Board (RWQCB). SRF loans require that the loan obligation be either senior to or on parity with other revenue-supported debt, such as the City's wastewater revenue refunding bonds. SRF loans are payable from all revenues of the enterprise, including fund balances. The debt service payments on this loan began in 2001 and are approximately \$1.2 million per year through December 2020.

In 2003, the City negotiated a second SRF loan in the amount of approximately \$11,196,000 to finance a relief sewer pipeline project for inflow/infiltration wet weather improvements. These improvements included a new three-mile relief sewer pipe and additional pumping, screening and disinfection facilities at the treatment plant. This loan is subject to the same terms as the 1998 SRF loan discussed above. The debt service payments on this SRF loan began in 2006 and are approximately \$734,000 per year through 2025.

Total annualized debt service for the Enterprise is approximately \$2.3 million per year through 2020. After which, debt service will reduce to approximately \$1.94 million for that year, then to \$734,000 in 2021. The 10-year debt service schedule is presented in Appendix B (Page 24).

Capital Reserves

The Enterprise designates five capital reserve funds. Two funds are for equipment and vehicle replacements, two accounts are for system replacements, and one is for wastewater treatment plant projects. In regards to equipment and vehicle replacements, Fund 515 covers expenditures less than \$25,000, and Fund 517 covers expenditures greater than \$25,000. For expenditures related to system replacements, Fund 516 is for small replacements, and Fund 518 is for major system replacements. Fund 044 holds funds for capital improvements and expansion projects of the wastewater treatment plant related to new connections and collected from connection fees.

The wastewater treatment plant reserve fund has approximately \$8.37 million, of which \$4.075 million come from connection fees. These connection fees are legally assigned to pay for only expansion related capital projects. Table 5 outlines the reserve accounts with their balances as of June 30, 2011 and adjusted for the amount collected from connection fees.

Table 5. Reserve Accounts			
	<u>Gross</u>	<u>Less Reserves</u>	<u>Carryforward</u>
Fund 044 Wastewater Projects	\$8,370,132	(\$4,075,000)	\$4,295,132
Fund 515 Equipment/Vehicle Replace	353,011	0	353,011
Fund 516 System Replace	654,071	0	654,071
Fund 517 Major Equipment/Vehicle Replacement	1,101	0	1,101
<u>Fund 518 Major System Replacement</u>	<u>178,775</u>	<u>0</u>	<u>178,775</u>
Total	\$9,557,089	(\$4,075,000)	\$5,482,089

CIP Projections

Although the Enterprise's capital improvement plan (CIP) project schedule details a five-year forecast, it does anticipate project costs with future projects for an additional 15 years. The annual average for the first five years of the CIP is about \$664,000 per year, as seen in Appendix A. BWA assumed the remaining project cost would be averaged over the 15 years, not including the East Channel Road and the I-780 at Rose Drive replacement projects as these may require separate funding. The remaining 15 year-over-year average is approximately \$682,000, and is relatively near the average for the detailed five year schedule. For the purpose of this report, BWA used the projected 15-year annual CIP cost average for the years following the Enterprise's current project schedule. A complete description of each planned project is available in Attachment 2.

Required Vehicle Purchases

Like capital projects, vehicles degrade over time and need to be replaced. As mentioned, the Enterprise has two vehicle replacement funds, one for replacements less than \$25,000 and one for replacements that cost more. Appendix C (Page 25) outlines the required vehicle purchase schedule. Capital transfers to these funds should resume compliance with the necessary purchase schedule.

Cost Reduction Efforts

Both the City and the Enterprise have taken steps to reduce costs. The City has negotiated a 10% reduction in salaries and increased employee contributions to retirements and benefits. The Enterprise has trimmed its capital projects strictly to essential items only, increased efforts to extend the use of odor scrubbers and has replaced outdated pumps and motors with more energy efficient models to reduce increasing energy costs.

Revenues-Expenses Projections (No Rate Increase)

Without any increases, BWA estimates the wastewater enterprise would probably not meet the City's reserve requirements starting with the 2012/13 fiscal year. In the following year, 2013/14, according to BWA's estimates, the Enterprise would be showing a negative balance by June, 2014, at which point it would have to begin borrowing from the General Fund or procure funds from another source. Table 6 shows a summary of the Enterprise's finances for the next five years if no rate increases are enacted. The beginning balance refers to the operating reserve balance and does not include any capital reserves. The Enterprise would require assistance from the General Fund in 2014.

Table 6. Five-Year Budget Summary Without Increases						
	Amended		2013-14	Projected		
	2011-12	2012-13		2014-15	2015-16	2016-17
Forward Balance	\$2,221,400	\$1,579,834	\$935,179	(\$677,721)	(\$2,440,121)	(\$4,348,821)
EDU Charge	41.33	41.33	41.33	41.33	41.33	41.33
Increases	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revenues						
Service Charges	\$6,581,800	\$6,581,800	\$6,581,800	\$6,581,800	\$6,581,800	\$6,581,800
Other Revenue	104,714	105,100	102,400	100,100	100,500	102,700
Total Revenues	\$6,686,514	\$6,686,900	\$6,684,200	\$6,681,900	\$6,682,300	\$6,684,500
Expenses						
O&M	\$4,040,330	\$4,301,510	\$4,319,200	\$4,437,700	\$4,560,700	\$4,688,000
Debt Service	2,332,900	2,328,300	2,328,200	2,332,200	2,330,400	2,332,700
Capital Outlay	301,060	39,920	147,400	151,600	156,000	160,600
Internal Service Charges	616,690	624,325	643,700	663,000	682,900	703,400
Interfund Transfers	37,100	37,500	858,600	859,800	861,000	842,200
Total Expenses	\$7,328,080	\$7,331,555	\$8,297,100	\$8,444,300	\$8,591,000	\$8,726,900
Surplus/(Deficit)	(\$641,566)	(\$644,655)	(\$1,612,900)	(\$1,762,400)	(\$1,908,700)	(\$2,042,400)
Ending Balance	\$1,579,834	\$935,179	(\$677,721)	(\$2,440,121)	(\$4,348,821)	(\$6,391,221)
Reserve Target	\$1,316,400	\$1,316,400	\$1,316,400	\$1,316,400	\$1,316,400	\$1,316,400
Reserve Target Met	yes	no	no	no	no	no

The rest of this report develops the wastewater rates and charges necessary to generate sufficient revenue to cover all expenses and to meet all rate design objectives, City's reserve policies and debt service coverage requirements.

WASTEWATER RATE SCENARIOS

Based on the historical information provided by the City, BWA projected the Enterprise's finances to determine the appropriate necessary rate increases to keep the Enterprise financially sustainable. This section lists the assumptions used for these projections, evaluates the efficacy of alternative scenarios and provides recommendations based upon the forecast model.

Expense Escalation Assumptions

The cost of operations and any upgrades or improvements naturally increase over time. In projecting future costs to the Enterprise, BWA assumed annual percent increases for each expense category shown in Table 7. These assumed percent increases are based upon historical year-over-year averages from the 2008 to 2011 fiscal year actuals; except for Salaries and Benefits which were reduced based upon new City contracts, and Power & Pumps which was chosen to be 6% to anticipate rising fuel and electricity costs. Total overall O&M expenses are estimated to increase at approximately 2.8% each year. Although current inflation is about 2.1%, the historical average annual increase for the San Francisco Bay Area CPI has been 3.5%. BWA will use 3.0% in the 10-year forecast to ensure a conservative approach. The complete expense detail is presented in Appendix D (Page 26).

Table 7. Expense Increase Assumptions	
O&M Expenses	Annual Change
Salaries	1.0%
Benefits	4.0%
Contracts & Services	3.0%
Maintenance & Repairs	3.0%
Power & Pumps	6.0%
Chemicals	4.0%
Material Disposal	3.0%
<u>Administration & General</u>	<u>3.0%</u>
Weighted Total O&M	2.8%
Debt Service	0.0%
Capital Expenses	
Capital Outlay	3.0%
Interfund Transfers*	3.0%
<u>Internal Service Charges</u>	<u>3.0%</u>
Weighted Total Capital	3.0%
Weighted Total Expenses	1.8%
* Only refers to General Fund transfers	

Rate Study Objectives

Four objectives serve as the foundation of BWA's wastewater rate analysis:

- Revenues cover all expenses, including operating, capital and debt service (this objective is consistent with the City's Balanced Operating Budget Policy)
- Net revenues (all revenues available after O&M expenses are covered) are at least 120% of annual debt service, which includes principal and interest payments on the revenue refunding bonds and the two SRF loans²
- The Enterprise meets the City's fund balance reserve policy of 20% of current year revenue
- All capital projects are funded on a pay-as-you-go (PAYGo) basis as to not incur future debt unless necessary.

The reserve policy of 20% of gross revenues is set by a Council decision and becomes the primary driver for the rate increases. By setting rates to cover the tertiary goal of meeting reserve requirements, the Enterprise meets all other objectives.

Assumptions

The key assumptions employed in the model projections are:

- No new debt service is issued during the 10 years analyzed: 2012/13 through 2021/22
- The City is at build-out, so customer growth is 0% in the cash flow
- Interest earnings are based on 1%
- Debt service coverage applies to the three current borrowings
- The Enterprise must begin contributing to its reserve funds to meet CIP expenses and schedule
- The Enterprise must meet the following revenue targets to maintain financial health
 - Revenues cover expenses
 - Net revenues, after O&M expenses, are at least 1.2 times the annual debt service
 - The minimum balance in the operating fund is maintained at not less than 20% of the Enterprise's revenues
 - Capital projects are funded on a pay-as-you-go (PAYGo) basis.

Alternative Rate Scenarios

Because the reserve requirement is the primary driver after revenues cover expenses, the question becomes when should the City reach this objective? BWA evaluated several scenarios involving different timelines to determine what the optimal rates should be to reach this goal.

² The SRF loans' coverage requirement is 110%, but the higher coverage requirement of 120% is the controlling objective in the rate study and is the baseline for the City's Standard & Poor's credit rating.

The three scenarios presented in Table 8 are set by the length of time it would take to meet the rate design targets (objectives). The table indicates when each scenario would achieve each target, calculates the monthly EDU charge and the dollar amount increase per fiscal year.

Table 8. Wastewater Rate Scenario Comparison						
	Current Rate	Prop. 218 Rates				
	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Scenario 1: Meet Targets by 2012/13						
Monthly EDU Charge	\$41.33	\$49.60	\$52.08	\$53.12	\$54.18	\$55.26
% Increase		20.0%	5.0%	2.0%	2.0%	2.0%
\$ Increase		\$8.27	\$2.48	\$1.04	\$1.06	\$1.08
Revenues Cover Expenses	no	yes	yes	yes	yes	yes
Debt Service Coverage Target Met	no	yes	yes	yes	yes	yes
Reserve Target Met	yes	yes	yes	yes	yes	yes
Scenario 2: Meet Targets by 2014/15						
Monthly EDU Charge	\$41.33	\$47.53	\$52.04	\$54.13	\$54.67	\$55.21
% Increase		15.0%	9.5%	4.0%	1.0%	1.0%
\$ Increase		\$6.20	\$4.52	\$2.08	\$0.54	\$0.55
Revenues Cover Expenses	no	no	yes	yes	yes	yes
Debt Service Coverage Target Met	no	yes	yes	yes	yes	yes
Reserve Target Met	yes	no	no	yes	yes	yes
Scenario 3: Meet Targets by 2016/17						
Monthly EDU Charge	\$41.33	\$45.88	\$50.01	\$53.26	\$55.39	\$56.49
% Increase		11.0%	9.0%	6.5%	4.0%	2.0%
\$ Increase		\$4.55	\$4.13	\$3.25	\$2.13	\$1.11
Revenues Cover Expenses	no	no	no	yes	yes	yes
Debt Service Coverage Target Met	no	no	yes	yes	yes	yes
Reserve Target Met	yes	no	no	no	no	yes

Recommended Scenario

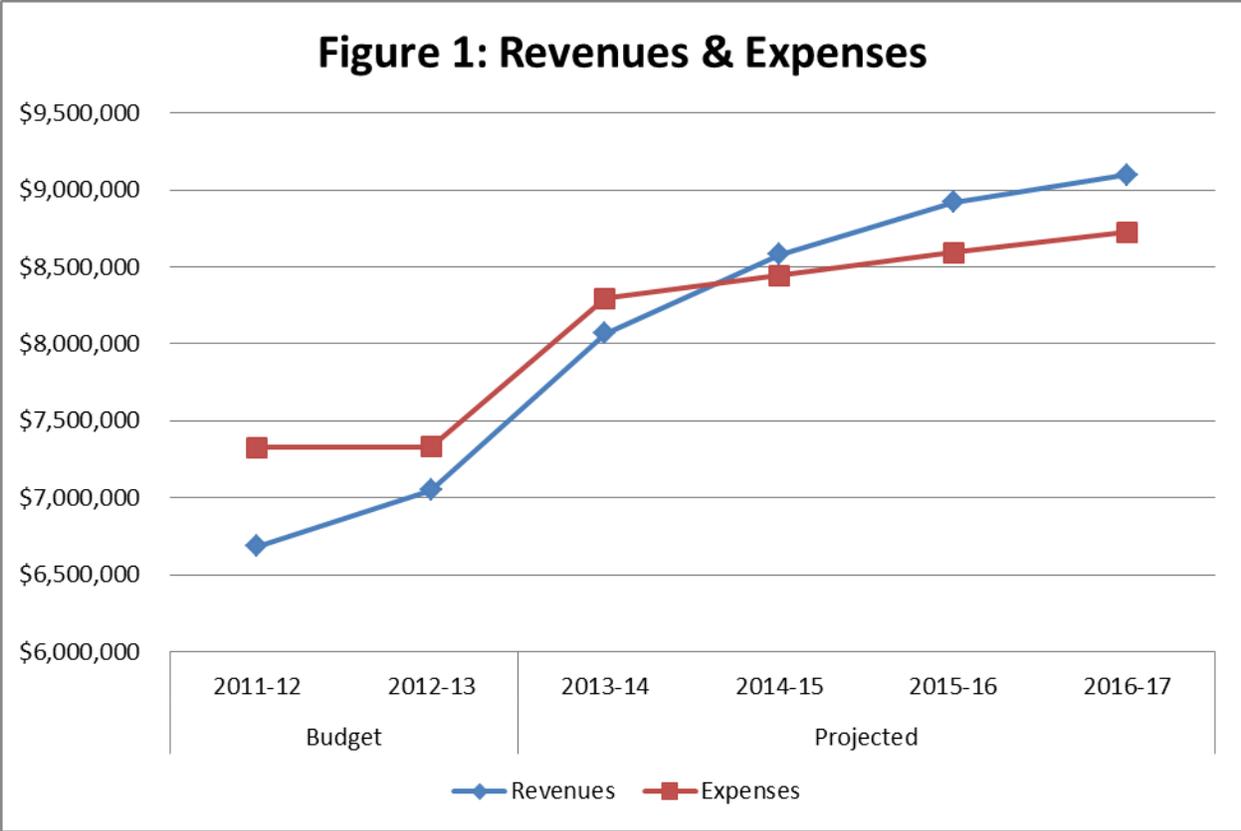
To return the Enterprise to financial sustainability, and to meet all of the study objectives, wastewater service charges should be increased. BWA recommends the City pursue the Scenario 3 rate adjustment schedule. Although all three scenarios will suffice to meet the needs of the Enterprise, Scenario 3 offers the lowest initial increase and eases the increase across the five-year time period to reduce shock to the rate payers.

The five-year proposed rate schedule, in Table 9, is set to establish Enterprise reserves at 20% of revenues by 2017 while meeting debt service requirements and establishing a PAYGo funding structure for necessary capital projects. In the BWA analysis, the first increase is set to go into effect on January 1, 2013; the second is set for July 1, 2013. All other adjustments start at the beginning of each fiscal year (July 1).

Table 9. Recommended Rate Increases						
Fiscal Year	2012	2013	2014	2015	2016	2017
Monthly Rate per EDU	\$41.33	\$45.88	\$50.01	\$53.26	\$55.39	\$56.49
Recommended Change	0.0%	11.0%	9.0%	6.5%	4.0%	2.0%
Dollar Increase		\$4.55	\$4.13	\$3.25	\$2.13	\$1.11

Based on these adjustments, BWA projects the Enterprise would meet its reserve target by the 2017 fiscal year. Table 10 provides a five-year summary of the Enterprise's budget with the proposed rates. Figure 1 shows the revenue and expense projections through the five-year period. By following this schedule of increases, BWA projects the Enterprise would not only meet all of its expenses but also may not require any increases through the five years following the above schedule because of the retirement of debt service. Appendix E (Page 28) shows the revenue schedule through the 10-year projections. The full 10-year cash flow projections, including all rate adjustments, are available in Appendix F (Page 29).

Table 10. Five-Year Budget Summary with Proposed Rate Increases						
	Budget		Projected			
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Forward Balance	\$2,221,400	\$1,579,834	\$1,297,179	\$1,065,779	\$1,202,479	\$1,532,079
EDU Charge	\$41.33	\$45.88	\$50.01	\$53.26	\$55.39	\$56.49
Revenues						
Service Charges	\$6,581,800	\$6,943,800	\$7,963,300	\$8,480,900	\$8,820,100	\$8,996,500
<u>Other Revenue</u>	<u>104,714</u>	<u>105,100</u>	<u>102,400</u>	<u>100,100</u>	<u>100,500</u>	<u>102,700</u>
Total Revenues	\$6,686,514	\$7,048,900	\$8,065,700	\$8,581,000	\$8,920,600	\$9,099,200
Expenses						
O&M	\$4,040,330	\$4,301,510	\$4,319,200	\$4,437,700	\$4,560,700	\$4,688,000
Debt Service	2,332,900	2,328,300	2,328,200	2,332,200	2,330,400	2,332,700
Capital Outlay	301,060	39,920	147,400	151,600	156,000	160,600
Internal Service Charges	616,690	624,325	643,700	663,000	682,900	703,400
<u>Interfund Transfers</u>	<u>37,100</u>	<u>37,500</u>	<u>858,600</u>	<u>859,800</u>	<u>861,000</u>	<u>842,200</u>
Total Expenses	\$7,328,080	\$7,331,555	\$8,297,100	\$8,444,300	\$8,591,000	\$8,726,900
Surplus/(Deficit)	(\$641,566)	(\$282,655)	(\$231,400)	\$136,700	\$329,600	\$372,300
Ending Balance	\$1,579,834	\$1,297,179	\$1,065,779	\$1,202,479	\$1,532,079	\$1,904,379
Reserve Target	\$1,337,300	\$1,409,800	\$1,613,100	\$1,716,200	\$1,784,100	\$1,819,800
Reserve Target Met	yes	no	no	no	no	yes
Debt Service Coverage	113%	118%	161%	178%	187%	189%



Reserve Fund Financing

With the recommended rate increases, the Enterprise can begin funding its reserve funds again. BWA projects this funding process can begin in the 2014 fiscal year at the following levels:

- Fund 515 (Vehicle Replacement) \$10,000
- Fund 516 (System Replacement) \$40,000
- Fund 517 (Major Vehicle Replacement) \$70,000
- Fund 518 (Major System Replacement) \$700,000

This level of fund financing will allow the Enterprise to meet all of its CIP expenses as PAYGO for the five-year period outlined in this report.

RATE SETTING LEGISLATION AND PRINCIPLES

Proposition 218

Proposition 218, the “Right to Vote on Taxes Act”, was approved by California voters in November 1996 and is codified as Articles XIIC and XIID of the California Constitution. Proposition 218 establishes requirements for imposing or increasing property related taxes, assessments, fees and charges. For many years, there was no legal consensus on whether water and sewer rates met the definition of “property related fees”. In July 2006, the California Supreme Court essentially confirmed that Proposition 218 applies to water rates. The prevailing legal consensus is that Proposition 218 also applies to wastewater rates.

BWA recommends the City follow the procedural requirements of Proposition 218 for all water and wastewater rate increases. These requirements include:

- **Noticing Requirement:** The City must mail a notice of proposed rate increases to all affected property owners. The notice must specify the basis of the fee, the reason for the fee, and the date/time/location of a public rate hearing at which the proposed rates will be considered/adopted.
- **Public Hearing:** The City must hold a public hearing prior to adopting the proposed rate increases. The public hearing must be held not less than 45 days after the required notices are mailed.
- **Rate Increases Subject to Majority Protest:** At the public hearing, the proposed rate increases are subject to majority protest. If more than 50% of affected property owners submit written protests against the proposed rate increases, the increases cannot be adopted.

Proposition 218 also established a number of substantive requirements that are generally deemed to apply to utility service charges, including:

- **Cost of Service** - Revenues derived from the fee or charge cannot exceed the funds required to provide the service. In essence, fees cannot exceed the “cost of service”.
- **Intended Purpose** - Revenues derived from the fee or charge can only be used for the purpose for which the fee was imposed.
- **Proportional Cost Recovery** - The amount of the fee or charge levied on any customer shall not exceed the proportional cost of service attributable to that customer.
- No fee or charge may be imposed for a service unless that service is used by, or immediately available to, the owner of the property. Standby charges shall be classified as “assessments” which are governed by Article 13D Section 4.

Charges for water, wastewater, and refuse collection are exempt from the additional voting requirements of Proposition 218 provided the charges do not exceed the cost of providing service and are adopted pursuant to procedural requirements of Proposition 218.

Rate Development Principles

In reviewing the City's current wastewater rates and finances, BWA utilized the following criteria in developing our recommendations:

1. *Revenue Sufficiency*: Rates should recover the annual cost of service and provide revenue stability.
2. *Equitable*: Rates should be fairly allocated among all customer classes based on their estimated demand characteristics. Each user class only pays its proportionate share.
3. *Practical*: Rates should be simple in form and, therefore, adaptable to changing conditions, easy to administer and easy to understand.
4. *Provide Incentive*: Rates provide price signals which serve as indicators to produce wastewater efficiently.

Casa de Vilarrasa

The wastewater rates are discounted for Casa de Vilarrasa residents. A single family residence pays \$41.33 per month per EDU. A Casa de Vilarrasa resident pays \$13.33 per month per EDU—a 68% discount. There are 81 units in the Casa de Vilarrasa complex, and with the discount the Enterprise subsidizes approximately \$27,000 per year. Under the provisions discussed with Proposition 218, ratepayers cannot legally bear the cost of subsidy discount rates. If the City wishes to continue the discount rates, the discounts must be provided from another source of revenue, such as the General Fund. BWA recommends Casa de Vilarrasa residents pay the standard wastewater rate for a single family residence.

BWA Rate Recommendations

BWA finds the wastewater rates recommended in this report satisfy the substantive requirements of Proposition 218. They are based on cost of service. The wastewater revenues are used only for sewer purposes — to operate, maintain, repair, replace, and improve the wastewater system. The wastewater charges are based on an EDU methodology which assigns the cost of service proportional to use by utility customers. Finally, there are no standby charges; the wastewater charges are applied to actual users of the sewer facilities.

WASTEWATER CONNECTION FEES

Connection fees are charges to new customers to recover the capital costs for facilities that are needed to serve growth. These fees go by a variety of names, including capacity charges, facilities charges, connection charges and hook-up charges, to name a few. The City's ordinance refers to these charges as "connection fees." These charges do not include fees for the direct costs of installing service connections.

Connection fees recover costs for future projects that must be constructed to serve new connections, as well as the costs of capacity in existing facilities that will benefit and serve new customers. The fees must be reasonable and non-arbitrary, and based on facility capital costs, user loads and system capacity. A variety of methods may be used to determine the appropriate connection fee.

California Government Code Section 66013 deals with water and sewer connection fees or capacity charges. It states that such fees or charges shall not exceed the estimated reasonable cost of providing the service for which the fees or charges are imposed, unless a question regarding the amount of the fee or charge imposed in excess of the estimated reasonable cost of providing the services is submitted to the electorate and approved by two-thirds of the vote cast.

Section 66013 defines a capacity charge as a charge for facilities in existence at the time a charge is imposed or charges for new facilities to be constructed in the future that are of benefit to the new customer. To maintain consistency with the City's terminology, this report refers to these capacity charges as connection fees. However, BWA recommends the City consider amending its municipal code and change the name to "Capacity Fee". Section 66013 uses the term connection charge to signify fees for the physical facilities necessary to make a water or sewer connection, including, but not limited to, meters, meter boxes, and pipelines from the structure or project to a water distribution line or sewer main, and that does not exceed the estimated reasonable cost of labor and materials for installation of those facilities.

Current Connection Fees

The City's current wastewater connection fees were adopted in 1997 and last reviewed for update in 1999. The current base fee is a flat fee per dwelling unit for \$7,500 for each residential unit or equivalent. This fee applies to single family and multiple family dwellings, as well as mobile home spaces and hotel/motel units with kitchen facilities. Hotel/motel units without kitchens require less system capacity and are charged a connection fee of 60% of the charge for a single family dwelling.

The City has different charges for residential and nonresidential connections. Nonresidential connections pay a minimum of \$4,131 per commercial/industrial unit. Fees for nonresidential connections are based on the relative strength of wastewater discharge for different customer categories and are currently calculated per 1,000 square feet of building area. High strength users that put larger demands on the system, such as restaurants and markets with garbage disposals, pay higher fees per square foot. Customers who put minimum demands on the system, such as warehouses, pay lower fees. The following table shows the calculated EDU's per 1,000 square feet for nonresidential user categories. For user categories not listed on Table 9, the number of EDU's will be determined by the director of public works in accordance with the EPA-approved formula, per Benicia Municipal Code 13.52.040.

<u>User Category</u>	<u>EDU's/1,000 sqft</u>
Office	0.5633
Warehouse	0.0442
Store, Dry Light Industrial	0.3571
Restaurant	1.9407
Bars, Night Clubs	1.0214
Church, Hall	0.1786
Private School	0.5833
Delicatessen (No Cooking)	0.7857
Medical Clinic, Hospital	1.1477
Market with Garbage Disposal	1.3339
Auto Steam Cleaning	0.6743

Costs Related to New Connections

The City incurs several categories of costs with providing wastewater facilities for new connections, including:

- Costs for projects that provide capacity for new customers, identified in the City's wastewater CIP,
- Costs of the current wastewater treatment plant improvement project,
- Debt service on the outstanding wastewater revenue bonds,
- Cost of the existing facilities, and
- Interest on the debt used to finance the wastewater treatment plant project.

Findings

BWA has assessed each of the above components and has determined there have been no significant changes in projects or cost categories since the City last updated the connection fees in 1999 to warrant an adjustment to the current connection fee schedule. However, BWA has noticed the City has not updated its connection fee in accordance with the Engineering News Record Construction Cost Index (ENR-CCI) for San Francisco since the fees were first adopted. An automatic annual escalation is provided in Municipal Code Chapter 13.52 .040C. As such, BWA recommends the City consider updating the connection fee to be current with escalated construction costs. BWA makes this recommendation because construction costs are

continuously increasing and fee updates ensure the City is able to replace aging facilities and expand facilities to serve new customers without incurring unnecessary debt or unduly increasing sewer rates.

Table 12: ENR-CCI Update Calculation	
<u>Year</u>	<u>December ENR-CCI</u>
2011	10,204.79
1999	6,816.70
Escalation Ratio	1.497
Adopted Connection Fee per EDU	
Residential	\$7,500.00
Nonresidential	\$4,131.00
Escalated Connection Fee per EDU	
Residential	\$11,200.00
Nonresidential	\$6,184.00

Adjusting the Connection Fee will ensure appropriate funding for established projects that add capacity; however BWA recommends the City establish a nexus for a new connection buy-in that allows the recovery of funds already spent on projects that add capacity to the system.

The City should also consider changing the terminology to “Capacity” fee because the fees it collects as Connection Fees are not for the purposes of building the physical sewer connection, but rather are for a new connection to pay a one-time charge to buy into the system’s capacity.

CONCLUSION

Currently the City of Benicia’s wastewater enterprise is running an annual year-over-year capital deficit since fiscal year 2008/09. The Enterprise has had sufficient reserves to finance these deficits, but these funds are limited and are expected to be exhausted in fiscal year 2013/14. Based on BWA’s cost of service analysis summarized in this report, BWA recommends the City raise sewer service rates and charges to generate the revenue necessary to meet all expenses and satisfy the rate objectives and Proposition 218 requirements. The proposed rate increases to adequately cover the Enterprise’s future costs for the next five fiscal years are as follows:

Recommended Rate Increases

Fiscal Year	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
Monthly Rate per EDU	\$41.33	\$45.88	\$50.01	\$53.26	\$55.39	\$56.49
Recommended Change		11.0%	9.0%	6.5%	4.0%	2.0%
Dollar Increase		\$4.55	\$4.13	\$3.25	\$2.13	\$1.11

BWA recommends the first rate increase be implemented on January 1, 2013, the second increase on July 1, 2013 and all other increases on the first day of each fiscal year (July 1).

By following this schedule of increases, BWA projects the Enterprise would not only meet all of its revenue requirements, but it may not require any increases through the five years following the above schedule because of the retirement of debt service. Notwithstanding this conclusion, a follow-up study should be done in 2017 to ensure revenues match anticipated costs at the lowest sewer rates possible.

Other advantages the Enterprise would gain from these recommended increases are:

- The Enterprise would meet its mandated operating reserve target of 20% of revenues each year starting in fiscal year 2016/17;
- The Enterprise would be able to fund the projects outlined in its CIP without further borrowing;
- The Enterprise would continue to meet all debt service requirements;
- The Enterprise would be in a better financial position when Standard & Poor reevaluates its credit rating;
- The Enterprise would be able to fund its reserve funds at appropriate funding levels of:
 - Fund 515 (Vehicle Replacement) \$10,000
 - Fund 516 (System Replacement) \$40,000
 - Fund 517 (Major Vehicle Replacement) \$70,000
 - Fund 518 (Major System Replacement) \$700,000

In addition to the rate adjustments, BWA makes the following recommendations:

- Casa de Vilarrasa residents pay the standard wastewater rate for a single family residence;
- Redefine the Connection Fees as “Capacity Fees” to align name with the purpose of the charge, which establishes the nexus for new connections to buy into existing capacity;
- Adjusting the capacity fees for new wastewater connections using ENR-CCI as permitted in the Municipal Code.

BWA takes as the basic rate design standard to be cost of service. BWA concludes the proposed wastewater rates and charges are based on cost of service, follow generally accepted rate design criteria and adhere to the substantive requirements of Proposition 218. BWA believes it has designed rates that are fair to the City’s wastewater customers and reflect the use and benefit of the wastewater enterprise.

APPENDIX A: CAPITAL IMPROVEMENT PROGRAM

Capital Improvement Program							
Project Descriptions	Year	1	2	3	4	2016-31	Total
	2011-12	2012-13	2013-14	2014-15	2015-16		
Wastewater Operations							
Facility Security and Ancillary Projects	\$0	\$0	\$0	\$0	\$0	\$300,000	\$300,000
Corp Yard Improvements	0	0	0	33,800	0	500,000	533,800
Odor Scrubber Media Replacement	0	45,000	0	0	0	125,000	170,000
Replace Helical Scum Collectors	0	0	0	0	0	150,000	150,000
RBC Replacement	0	0	0	0	0	1,200,000	1,200,000
Rehab grit separator	0	0	0	0	0	50,000	50,000
Master Plan Update	0	0	0	0	0	500,000	500,000
Plant Cathodic Protection Improvements	0	0	0	100,000	500,000	0	600,000
HMI replace with SCADA nodes	50,000	0	0	0	0	0	50,000
Add actuators/controls-aeration basin gates	0	0	30,000	0	0	0	30,000
Digester cleaning	35,000	0	0	0	0	200,000	400,000
Replace belt filter press	0	0	0	0	140,000	90,000	230,000
Upgrade/replace PLCs	0	0	0	80,000	0	0	80,000
Overhaul natural gas genset	0	0	75,000	0	0	0	75,000
Rehab 4 MCCs	0	0	0	0	0	200,000	200,000
Add third clarifier	0	0	0	0	0	1,500,000	1,500,000
Boiler Control Panels	0	0	0	0	0	40,000	40,000
Sludge Disposal Options	0	0	0	0	0	450,000	450,000
Computerized O&M Manual	0	0	0	0	0	10,000	10,000
Odor Scrubber Piping Modifications	40,000	0	0	0	0	0	40,000
Alternative Energy Options	0	0	0	0	0	725,000	725,000
Effluent Flow Recycle Pump Station	30,000	0	0	0	0	0	30,000
Emergency Electrical MCC Connection Points	0	50,000	0	0	0	0	50,000
Plant Electrical System Upgrade	0	0	0	0	0	200,000	200,000
Chemical Tank Replacement	15,000	0	0	80,000	0	0	95,000
Grit Separator Gates	0	0	30,000	0	0	0	30,000
<u>Influent Pumps Rehabilitation</u>	<u>30,000</u>	<u>0</u>	<u>0</u>	<u>-</u>	<u>0</u>	<u>0</u>	<u>30,000</u>
Total Wastewater Operations	\$200,000	\$95,000	\$135,000	\$293,800	\$640,000	\$6,240,000	\$7,768,800
Wastewater Line Projects							
West H Street Sewerline Replacement	\$0	\$0	\$0	\$0	\$0	\$50,000	\$50,000
East 7th Street Sewerline Replacement	0	0	0	0	237,000	150,000	387,000
Semple School Area Sewer Main Relocation	0	0	0	0	0	646,000	646,000
West Manor Neigh Sewer Main Replacement	0	0	0	0	0	400,000	400,000
Wet Weather Program Re-Evaluation	0	0	0	0	0	450,000	450,000
Bayshore Rd Gravity Main Rehabilitation	0	0	800,000	664,000	0	0	1,464,000
Bayshore Force Main Replacement	103,000	150,000	0	0	0	0	103,000
West Fork Sewerline Replacement	0	0	0	0	0	911,600	911,600
East Channel Road Sewerline Replacement	0	0	0	0	0	2,493,000	2,493,000
I-780 Crossing at West 7th Street Sewerline Replacement	0	0	0	0	0	152,000	152,000
West 7th Street Sewerline Replacement	0	0	0	0	0	646,000	646,000
I-780 at Rose Drive Sewerline Replacement	0	0	0	0	0	4,399,000	4,399,000
<u>Park Industrial Lift Station Replacement</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>581,000</u>	<u>581,000</u>
Total Wastewater Line Projects	\$103,000	\$150,000	\$800,000	\$664,000	\$237,000	\$10,878,600	\$12,682,600
Total Program Needs	\$303,000	\$245,000	\$ 935,000	\$ 957,800	\$ 877,000	\$17,118,600	\$20,451,400
Total CIP 5-Years					\$3,317,800		
Average Annual CIP 5-Years					\$ 663,600		

APPENDIX B: DEBT SERVICE SCHEDULE

Debt Service Schedule				
	<u>2005 Refi Bond</u>	<u>1998 SRF</u>	<u>2003 SRF</u>	<u>Total</u>
2011	\$390,563.75	\$1,207,779.40	\$733,518.12	\$2,331,861.27
2012	391,601.25	1,207,779.40	733,518.12	2,332,898.77
2013	387,040.00	1,207,779.40	733,518.12	2,328,337.52
2014	386,860.00	1,207,779.40	733,518.12	2,328,157.52
2015	390,940.00	1,207,779.40	733,518.12	2,332,237.52
2016	389,095.00	1,207,779.40	733,518.12	2,330,392.52
2017	391,375.00	1,207,779.40	733,518.12	2,332,672.52
2018	392,907.50	1,207,779.40	733,518.12	2,334,205.02
2019	393,585.00	1,207,779.40	733,518.12	2,334,882.52
2020	398,092.50	1,207,779.40	733,518.12	2,339,390.02
2021	0.00	1,207,779.40	733,518.12	1,941,297.52
2022	0.00	0.00	733,518.12	733,518.12

APPENDIX C: REQUIRED VEHICLE PURCHASES

Required Vehicle Purchases							
Project Descriptions	Year	1	2	3	4	2016-31	Total
Project Descriptions	2011-12	2012-13	2013-14	2014-15	2015-16	2016-31	Total
Wastewater Treatment Plant Vehicles							
Toyota Prius I	\$0	\$0	\$0	\$25,000	\$0	\$0	\$25,000
Utility Cart	8,000	0	0	0	0	0	8,000
Forklift	0	0	0	0	0	22,000	22,000
Utility Cart	8,000	0	0	0	0	0	8,000
Maintenance Truck S-Dty w/ crane	0	0	0	0	0	50,300	50,300
Industrial Inspector Truck	0	19,000	0	0	0	0	19,000
70KW Genset Tru Trailer	0	0	0	0	0	35,000	35,000
50KW Genset Tru Trailer	0	0	0	0	0	25,000	25,000
Toyota Prius II	0	0	25,000	0	0	0	25,000
150 KW Genset Trailer	0	45,000	0	0	0	0	45,000
Escape 2WD	0	0	0	0	0	25,000	25,000
<u>Wacker trash 4" pump w/Hatz diesel (on trailer)</u>	<u>15,000</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>15,000</u>
Total Wastewater Treatment Plant Vehicles	\$31,000	\$64,000	\$25,000	\$25,000	\$0	\$157,300	\$302,300
Wastewater Field Vehicles							
Truck (Maintenance Supervisor) [25%]	\$0	\$0	\$0	\$4,800	\$0	\$0	\$4,800
Vacon [50%]	0	75,000	0	0	0	0	75,000
Concrete Trailer [33%]	0	0	0	0	0	5,000	5,000
HydroJet	0	0	80,000	0	0	0	80,000
Electric Eel Trailer	0	0	2,000	0	0	0	2,000
Camera Van	0	0	0	0	85,000	0	85,000
Truck	0	0	0	42,100	0	0	42,100
Dump Truck [50%]	0	42,500	0	0	0	0	42,500
Backhoe [50%]	0	0	0	0	0	42,500	42,500
Forklift	0	0	0	0	0	24,400	24,400
Dump Truck [50%]	0	0	0	0	0	47,800	47,800
Pickup Truck	0	0	0	0	0	20,000	20,000
Bobcat/Skip Loader [25%]	0	0	0	0	0	12,500	12,500
<u>Trencher (a tractor) [25%]</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>3,000</u>	<u>0</u>	<u>0</u>	<u>3,000</u>
Total Wastewater Field Vehicles	\$0	\$117,500	\$82,000	\$49,900	\$85,000	\$152,200	\$486,600
Total Program Needs	\$31,000	\$181,500	\$107,000	\$74,900	\$85,000	\$309,500	\$788,900
Total Vehicle Purchases 5-Years						\$ 479,400	
Average Annual Vehicle Purchase 5-Years						\$ 95,900	
Average Annual Vehicle Depreciation						\$ 78,900	

APPENDIX D: EXPENSE DETAILS

	Expense Detail													
	Actual	Actual	Actual	Amended Budget		Projected								
	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2019-20	2021-22
Salaries & Benefits														
Salaries	\$1,613,935	\$1,514,420	\$1,479,055	\$1,678,875	\$1,680,200	\$1,750,400	\$1,767,900	\$1,785,600	\$1,803,500	\$1,821,500	\$1,839,700	\$1,858,100	\$1,876,700	\$1,895,500
Benefits	<u>635,475</u>	<u>598,735</u>	<u>628,215</u>	<u>682,630</u>	<u>737,830</u>	<u>793,000</u>	<u>824,700</u>	<u>857,700</u>	<u>892,000</u>	<u>927,700</u>	<u>964,800</u>	<u>1,003,400</u>	<u>1,043,500</u>	<u>1,085,200</u>
Total Salaries & Benefits	\$2,249,410	\$2,113,155	\$2,107,270	\$2,361,505	\$2,418,030	\$2,543,400	\$2,592,600	\$2,643,300	\$2,695,500	\$2,749,200	\$2,804,500	\$2,861,500	\$2,920,200	\$2,980,700
Contracts & Services														
Contract Services	\$82,760	\$111,195	\$116,390	\$162,115	\$174,090	\$179,300	\$184,700	\$190,200	\$195,900	\$201,800	\$207,900	\$214,100	\$220,500	\$227,100
Uniform/Boot Contract	14,900	15,060	13,535	19,085	19,170	19,700	20,300	20,900	21,500	22,100	22,800	23,500	24,200	24,900
Professional/Technical Service	60,680	85,600	81,035	100,400	91,600	94,300	97,100	100,000	103,000	106,100	109,300	112,600	116,000	119,500
Comm Lab Testing	47,395	34,640	42,735	55,800	59,300	61,100	62,900	64,800	66,700	68,700	70,800	72,900	75,100	77,400
Pre-Treatment Sampling	<u>1,990</u>	<u>1,205</u>	<u>375</u>	<u>3,000</u>	<u>3,000</u>	<u>3,100</u>	<u>3,200</u>	<u>3,300</u>	<u>3,400</u>	<u>3,500</u>	<u>3,600</u>	<u>3,700</u>	<u>3,800</u>	<u>3,900</u>
Total Contracts & Services	\$207,725	\$247,700	\$254,070	\$340,400	\$347,160	\$357,500	\$368,200	\$379,200	\$390,500	\$402,200	\$414,400	\$426,800	\$439,600	\$452,800
Maintenance & Repairs														
Maintenance & Repairs	\$590	\$1,435	\$2,430	\$3,000	\$3,500	\$3,600	\$3,700	\$3,800	\$3,900	\$4,000	\$4,100	\$4,200	\$4,300	\$4,400
Maintenance & Repair V & E	9,385	31,230	25,160	19,000	11,800	12,200	12,600	13,000	13,400	13,800	14,200	14,600	15,000	15,500
Maintenance Supplies	6,550	4,720	6,255	7,175	8,175	8,400	8,700	9,000	9,300	9,600	9,900	10,200	10,500	10,800
Small Tools & Equipment	4,355	2,305	2,850	6,600	5,700	5,900	6,100	6,300	6,500	6,700	6,900	7,100	7,300	7,500
Lift Station Maintenance	21,750	15,685	11,660	24,000	24,000	24,700	25,400	26,200	27,000	27,800	28,600	29,500	30,400	31,300
Fittings & Hardware	1,685	-875	1,270	0	0	0	0	0	0	0	0	0	0	0
Preventative Maintenance	1,290	4,945	8,300	0	0	0	0	0	0	0	0	0	0	0
Street Repairs	10,875	3,395	3,050	10,000	10,000	10,300	10,600	10,900	11,200	11,500	11,800	12,200	12,600	13,000
Sewer Line Repairs	33,860	1,765	11,140	25,000	25,000	25,800	26,600	27,400	28,200	29,000	29,900	30,800	31,700	32,700
Plant Repairs	81,790	100,640	89,135	87,000	120,000	95,700	98,600	101,600	104,600	107,700	110,900	114,200	117,600	121,100
Emergency Repairs	<u>25,575</u>	<u>0</u>	<u>17,525</u>	<u>27,000</u>	<u>27,000</u>	<u>27,800</u>	<u>28,600</u>	<u>29,500</u>	<u>30,400</u>	<u>31,300</u>	<u>32,200</u>	<u>33,200</u>	<u>34,200</u>	<u>35,200</u>
Total Maintenance & Repairs	\$197,705	\$165,245	\$178,775	\$208,775	\$235,175	\$214,400	\$220,900	\$227,700	\$234,500	\$241,400	\$248,500	\$256,000	\$263,600	\$271,500
Power & Pumps														
Vehicle and Equipment Fuel	\$10,065	\$9,720	\$11,445	\$14,955	\$15,260	\$16,200	\$17,200	\$18,200	\$19,300	\$20,500	\$21,700	\$23,000	\$24,400	\$25,900
Plant Electricity	355,845	349,660	364,330	345,000	345,000	365,700	387,600	410,900	435,600	461,700	489,400	518,800	549,900	582,900
Station Power	27,715	30,490	32,355	33,000	35,500	37,600	39,900	42,300	44,800	47,500	50,400	53,400	56,600	60,000
Plant Gas	<u>4,695</u>	<u>2,025</u>	<u>2,585</u>	<u>7,200</u>	<u>7,500</u>	<u>8,000</u>	<u>8,500</u>	<u>9,000</u>	<u>9,500</u>	<u>10,100</u>	<u>10,700</u>	<u>11,300</u>	<u>12,000</u>	<u>12,700</u>
Total Power & Pumps	\$398,320	\$391,895	\$410,715	\$400,155	\$403,260	\$427,500	\$453,200	\$480,400	\$509,200	\$539,800	\$572,200	\$606,500	\$642,900	\$681,500
Plant Chemicals	\$245,120	\$240,850	\$233,995	\$284,500	\$298,600	\$310,500	\$322,900	\$335,800	\$349,200	\$363,200	\$377,700	\$392,800	\$408,500	\$424,800
Materials Disposal	\$104,075	\$103,600	\$94,545	\$119,500	\$190,500	\$122,400	\$126,100	\$129,900	\$133,800	\$137,800	\$141,900	\$146,200	\$150,600	\$155,100
Administration & General														
Education & Training	\$7,185	\$7,270	\$9,980	\$17,020	\$20,770	\$21,400	\$22,000	\$22,700	\$23,400	\$24,100	\$24,800	\$25,500	\$26,300	\$27,100
Travel & Meals	4,485	2,825	750	3,175	3,175	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100
Memberships & Certifications	7,500	5,360	4,565	12,180	12,310	12,700	13,100	13,500	13,900	14,300	14,700	15,100	15,600	16,100
Publications & Subscriptions	1,115	905	475	1,275	1,280	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300
Office Supplies	4,300	4,085	3,470	4,650	4,650	4,800	4,900	5,000	5,200	5,400	5,600	5,800	6,000	6,200
Operating Supplies	4,195	3,520	4,585	11,375	14,280	14,700	15,100	15,600	16,100	16,600	17,100	17,600	18,100	18,600
Safety Supplies	9,665	12,945	12,095	15,045	15,045	15,500	16,000	16,500	17,000	17,500	18,000	18,500	19,100	19,700
NPDES Permit Requirements	41,480	60,875	54,085	75,000	149,170	76,100	78,400	80,800	83,200	85,700	88,300	90,900	93,600	96,400
Telephone	26,520	25,390	23,715	25,200	25,200	26,000	26,800	27,600	28,400	29,300	30,200	31,100	32,000	33,000
Communication System	6,450	5,350	7,340	7,050	7,050	7,300	7,500	7,700	7,900	8,100	8,300	8,500	8,800	9,100
Lab Supplies	28,170	29,895	22,890	32,400	34,600	35,600	36,700	37,800	38,900	40,100	41,300	42,500	43,800	45,100
Spare Parts Inventory	7,075	2,350	4,860	9,625	9,755	10,000	10,300	10,600	10,900	11,200	11,500	11,800	12,200	12,600
Water	23,810	30,685	70,830	67,000	67,000	69,000	71,100	73,200	75,400	77,700	80,000	82,400	84,900	87,400
Regulatory Fees	<u>42,870</u>	<u>38,000</u>	<u>39,835</u>	<u>44,500</u>	<u>44,500</u>	<u>45,800</u>	<u>47,200</u>	<u>48,600</u>	<u>50,100</u>	<u>51,600</u>	<u>53,100</u>	<u>54,700</u>	<u>56,300</u>	<u>58,000</u>
Total Administration & General	\$214,820	\$229,455	\$259,475	\$325,495	\$408,785	\$343,500	\$353,800	\$364,400	\$375,300	\$386,600	\$398,000	\$409,600	\$422,000	\$434,700
TOTAL OPERATING EXPENSES	\$3,617,175	\$3,491,900	\$3,538,845	\$4,040,330	\$4,301,510	\$4,319,200	\$4,437,700	\$4,560,700	\$4,688,000	\$4,820,200	\$4,957,200	\$5,099,400	\$5,247,400	\$5,401,100

Debt Service														
2001 SRF	\$1,207,780	\$1,207,780	\$1,207,779	\$1,207,779	\$1,207,779	\$1,207,779	\$1,207,779	\$1,207,779	\$1,207,779	\$1,207,779	\$1,207,779	\$1,207,779	\$1,207,780	\$1,207,781
2005 Refi Bond	391,813	388,936	390,564	391,601	387,040	386,860	390,940	389,095	391,375	392,908	393,585	398,093	398,093	398,093
<u>2003 SRF</u>	<u>733,518</u>													
Total Debt Service	\$2,333,111	\$2,330,234	\$2,331,861	\$2,332,899	\$2,328,338	\$2,328,158	\$2,332,238	\$2,330,393	\$2,332,673	\$2,334,205	\$2,334,883	\$2,339,390	\$2,339,391	\$2,339,392
Capital Outlay														
Durable Tools & Equipment	\$20,510	\$25,115	\$15,395	\$34,395	\$32,000	\$33,000	\$34,000	\$35,000	\$36,100	\$37,200	\$38,300	\$39,400	\$40,600	\$41,800
Office Furniture	70	1,185	850	1,725	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600
Office Equipment	2,560	470	3,675	4,250	3,820	3,900	4,000	4,100	4,200	4,300	4,400	4,500	4,600	4,700
Computer System Upgrades	57,490	38,355	21,555	0	0	0	0	0	0	0	0	0	0	0
Facility Upgrades	8,600	0	1,905	0	0	0	0	0	0	0	0	0	0	0
Corp Yard Improvements	1,785	0	0	500	2,500	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600
Sewer Lift Station Improve	51,675	71,855	42,560	41,805	0	41,600	42,800	44,100	45,400	46,800	48,200	49,600	51,100	52,600
Sanitary Sewer Line Upgrades	100,825	48,685	23,960	150,000	0	64,700	66,600	68,600	70,700	72,800	75,000	77,300	79,600	82,000
<u>WWTP Improvements</u>	<u>0</u>	<u>0</u>	<u>1,615</u>	<u>68,385</u>	<u>0</u>									
Total Capital Outlay	\$243,515	\$185,665	\$111,515	\$301,060	\$39,920	\$147,400	\$151,600	\$156,000	\$160,600	\$165,300	\$170,100	\$175,000	\$180,100	\$185,300
Transfers														
Fund 044 (WWTP)	\$260,000	\$270,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fund 515 (Veh Replacement)	0	0	0	0	0	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Fund 516 (Sys Replacement)	0	0	0	0	0	40,000	40,000	40,000	20,000	20,000	20,000	20,000	20,000	20,000
Fund 517 (Major Veh Replacement)	0	0	0	0	0	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Fund 518 (Major Sys Replacement)	0	0	0	0	0	700,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000
<u>General Fund</u>	<u>32,165</u>	<u>32,165</u>	<u>0</u>	<u>37,100</u>	<u>37,500</u>	<u>38,600</u>	<u>39,800</u>	<u>41,000</u>	<u>42,200</u>	<u>43,500</u>	<u>44,800</u>	<u>46,100</u>	<u>46,100</u>	<u>46,100</u>
Total Transfers	\$292,165	\$302,165	\$0	\$37,100	\$37,500	\$658,600	\$659,800	\$661,000	\$642,200	\$643,500	\$644,800	\$646,100	\$646,101	\$646,102
Internal Service Charges														
Workers' Comp ISF	\$20,765	\$19,870	\$27,075	\$37,930	\$38,280	\$39,400	\$40,600	\$41,800	\$43,100	\$44,400	\$45,700	\$47,100	\$48,500	\$50,000
Administrative Services ISF	424,315	716,395	562,705	563,800	570,730	587,900	605,500	623,700	642,400	661,700	681,600	702,000	723,100	744,800
<u>Equipment Services ISF</u>	<u>20,145</u>	<u>17,400</u>	<u>15,925</u>	<u>14,960</u>	<u>15,315</u>	<u>16,400</u>	<u>16,900</u>	<u>17,400</u>	<u>17,900</u>	<u>18,400</u>	<u>19,000</u>	<u>19,600</u>	<u>20,200</u>	<u>20,800</u>
Total Internal Service Charges	\$465,225	\$753,665	\$605,705	\$616,690	\$624,325	\$643,700	\$663,000	\$682,900	\$703,400	\$724,500	\$746,300	\$768,700	\$791,800	\$815,600
TOTAL CAPITAL EXPENSES	\$3,334,016	\$3,571,729	\$3,049,081	\$3,287,749	\$3,030,083	\$3,777,858	\$3,806,638	\$3,830,293	\$3,838,873	\$3,867,505	\$3,896,083	\$3,929,190	\$3,957,392	\$3,986,394
TOTAL EXPENSES	\$6,951,191	\$7,063,629	\$6,587,926	\$7,328,079	\$7,331,593	\$8,097,058	\$8,244,338	\$8,390,993	\$8,526,873	\$8,687,705	\$8,853,283	\$9,028,590	\$9,204,792	\$9,387,494
Includes both Treatment Operations & Field Operations														

APPENDIX E: RECOMMENDED SCENARIO REVENUE SCHEDULE

Revenue Schedule											
	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>
Base Revenue:	\$6,581,800	\$6,581,800	\$6,581,800	\$6,581,800	\$6,581,800	\$6,581,800	\$6,581,800	\$6,581,800	\$6,581,800	\$6,581,800	\$6,581,800
<u>Year</u>	<u>Adjustment</u>										
2012	0.0%	0	0	0	0	0	0	0	0	0	0
2013	11.0%		362,000	724,000	724,000	724,000	724,000	724,000	724,000	724,000	724,000
2014	9.0%			657,500	657,500	657,500	657,500	657,500	657,500	657,500	657,500
2015	6.5%				517,600	517,600	517,600	517,600	517,600	517,600	517,600
2016	4.0%					339,200	339,200	339,200	339,200	339,200	339,200
2017	2.0%						176,400	176,400	176,400	176,400	176,400
2018	0.0%							0	0	0	0
2019	0.0%								0	0	0
2020	0.0%									0	0
2021	0.0%										0
2022	0.0%										0
Adjusted Revenue:	\$6,581,800	\$6,943,800	\$7,963,300	\$8,480,900	\$8,820,100	\$8,996,500	\$8,996,500	\$8,996,500	\$8,996,500	\$8,996,500	\$8,996,500

APPENDIX F: RECOMMENDED SCENARIO CASH FLOW

	Wastewater Cash Flow Summary										
	Budget		Projections				Extended Projections				
	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Forward Balance	\$2,221,400	\$1,579,834	\$1,297,179	\$1,065,779	\$1,202,479	\$1,532,079	\$1,904,379	\$2,118,379	\$2,169,379	\$2,046,079	\$2,143,979
EDU Charge	\$41.33	\$45.88	\$50.01	\$53.26	\$55.39	\$56.49	\$56.49	\$56.49	\$56.49	\$56.49	\$56.49
Increases	0.0%	11.0%	9.0%	6.5%	4.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revenues											
Service Charges	\$6,581,800	\$6,943,800	\$7,963,300	\$8,480,900	\$8,820,100	\$8,996,500	\$8,996,500	\$8,996,500	\$8,996,500	\$8,996,500	\$8,996,500
Interest	22,214	17,600	14,900	12,600	13,000	15,200	17,700	20,300	21,300	20,600	22,000
<u>Other Revenue</u>	<u>82,500</u>	<u>87,500</u>	<u>87,500</u>	<u>87,500</u>	<u>87,500</u>	<u>87,500</u>	<u>87,500</u>	<u>87,500</u>	<u>87,500</u>	<u>87,500</u>	<u>87,500</u>
Total Revenues	\$6,686,514	\$7,048,900	\$8,065,700	\$8,581,000	\$8,920,600	\$9,099,200	\$9,101,700	\$9,104,300	\$9,105,300	\$9,104,600	\$9,106,000
Expenses											
<i>Operations & Maintenance</i>											
Salaries & Benefits	\$2,361,505	\$2,418,030	\$2,543,400	\$2,592,600	\$2,643,300	\$2,695,500	\$2,749,200	\$2,804,500	\$2,861,500	\$2,920,200	\$2,980,700
Contracts & Services	340,400	347,160	357,500	368,200	379,200	390,500	402,200	414,400	426,800	439,600	452,800
Maintenance & Repairs	208,775	235,175	214,400	220,900	227,700	234,500	241,400	248,500	256,000	263,600	271,500
Power & Pumps	400,155	403,260	427,500	453,200	480,400	509,200	539,800	572,200	606,500	642,900	681,500
Chemicals	284,500	298,600	310,500	322,900	335,800	349,200	363,200	377,700	392,800	408,500	424,800
Material Disposal	119,500	190,500	122,400	126,100	129,900	133,800	137,800	141,900	146,200	150,600	155,100
<u>Administration & General</u>	<u>325,495</u>	<u>408,785</u>	<u>343,500</u>	<u>353,800</u>	<u>364,400</u>	<u>375,300</u>	<u>386,600</u>	<u>398,000</u>	<u>409,600</u>	<u>422,000</u>	<u>434,700</u>
Total O&M Expenses	\$4,040,330	\$4,301,510	\$4,319,200	\$4,437,700	\$4,560,700	\$4,688,000	\$4,820,200	\$4,957,200	\$5,099,400	\$5,247,400	\$5,401,100
Net Revenues for Debt	\$2,646,184	\$2,747,390	\$3,746,500	\$4,143,300	\$4,359,900	\$4,411,200	\$4,281,500	\$4,147,100	\$4,005,900	\$3,857,200	\$3,704,900
Debt Service Coverage	113%	118%	161%	178%	187%	189%	183%	178%	171%	199%	505%
<i>Debt Service</i>											
2001 SRF	\$1,207,800	\$1,207,800	\$1,207,800	\$1,207,800	\$1,207,800	\$1,207,800	\$1,207,800	\$1,207,800	\$1,207,800	\$1,207,800	\$0
2005 Refi Bond	391,600	387,000	386,900	390,900	389,100	391,400	392,900	393,600	398,100	398,100	0
<u>2007 SRF</u>	<u>733,500</u>	<u>733,500</u>	<u>733,500</u>	<u>733,500</u>	<u>733,500</u>	<u>733,500</u>	<u>733,500</u>	<u>733,500</u>	<u>733,500</u>	<u>733,500</u>	<u>733,500</u>
Total Debt Service	\$2,332,900	\$2,328,300	\$2,328,200	\$2,332,200	\$2,330,400	\$2,332,700	\$2,334,200	\$2,334,900	\$2,339,400	\$1,941,300	\$733,500
Net Revenues for Capital	\$313,284	\$419,090	\$1,418,300	\$1,811,100	\$2,029,500	\$2,078,500	\$1,947,300	\$1,812,200	\$1,666,500	\$1,915,900	\$2,971,400
<i>Capital Expenses</i>											
Capital Outlay	\$301,060	\$39,920	\$147,400	\$151,600	\$156,000	\$160,600	\$165,300	\$170,100	\$175,000	\$180,100	\$185,300
Internal Service Charges	616,690	624,325	643,700	663,000	682,900	703,400	724,500	746,300	768,700	791,800	815,600
Interfund Transfers											
Fund 044 (WWTP)	0	0	0	0	0	0	0	0	0	0	0
Fund 515 (Veh Replacement)	0	0	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Fund 516 (Sys Replacement)	0	0	40,000	40,000	40,000	20,000	20,000	20,000	20,000	20,000	20,000
Fund 517 (Major Veh Replacement)	0	0	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Fund 518 (Major Sys Replacement)	0	0	700,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000	700,000
<u>General Fund</u>	<u>37,100</u>	<u>37,500</u>	<u>38,600</u>	<u>39,800</u>	<u>41,000</u>	<u>42,200</u>	<u>43,500</u>	<u>44,800</u>	<u>46,100</u>	<u>46,100</u>	<u>46,100</u>
Total Capital Expenses	\$954,850	\$701,745	\$1,649,700	\$1,674,400	\$1,699,900	\$1,706,200	\$1,733,300	\$1,761,200	\$1,789,800	\$1,818,000	\$1,847,000
Total Expenses	\$7,328,080	\$7,331,555	\$8,297,100	\$8,444,300	\$8,591,000	\$8,726,900	\$8,887,700	\$9,053,300	\$9,228,600	\$9,006,700	\$7,981,600
Surplus/(Deficit)	(\$641,566)	(\$282,655)	(\$231,400)	\$136,700	\$329,600	\$372,300	\$214,000	\$51,000	(\$123,300)	\$97,900	\$1,124,400
Ending Balance	\$1,579,834	\$1,297,179	\$1,065,779	\$1,202,479	\$1,532,079	\$1,904,379	\$2,118,379	\$2,169,379	\$2,046,079	\$2,143,979	\$3,268,379
Reserve Target	\$1,337,303	\$1,409,780	\$1,613,140	\$1,716,200	\$1,784,120	\$1,819,840	\$1,820,340	\$1,820,860	\$1,821,060	\$1,820,920	\$1,821,200
Reserve Target Met	yes	no	no	no	no	yes	yes	yes	yes	yes	yes

**CITY OF BENICIA
WATER RATE STUDY**

**FINAL DRAFT REPORT
September 25, 2012**

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Table of Contents

INTRODUCTION.....	1
WATER ENTERPRISE	3
The Water System.....	3
Customers	3
Water Consumption	3
Current Water Rates.....	5
Senior Water Rates	7
Water Enterprise Finances	9
Fund Reserves.....	9
Revenues and Expenses	10
Revenues.....	12
Fixed vs. Variable Revenue Profile	12
Operating Expenses	13
Non-Operating Expenses	13
Capital Improvement Program.....	13
Required Vehicle Purchases	14
Cost Reduction Efforts.....	14
Outstanding Debt	14
Revenues-Expenses Projections (No Rate Increase)	16
WATER RATE SCENARIOS.....	17
Rate Study Objectives.....	17
Assumptions.....	17
Escalation Factors	19
Rate Scenarios.....	21
Recommended Scenario.....	22
Reserve Fund Financing	22
RATE SETTING LEGISLATION AND PRINCIPLES.....	26
Proposition 218.....	26

Rate Development Principles.....	27
BWA Rate Recommendations	27
WATER CONNECTION FEE.....	29
Current Connection Fees.....	29
Costs Related to New Development	30
Findings.....	30
CONCLUSION	32
APPENDIX A: BUDGET DETAIL	35
APPENDIX B: CAPITAL IMPROVEMENT SCHEDULE.....	42
APPENDIX C: VEHICLE REPLACEMENT SCHEDULE.....	43
APPENDIX D: DEBT SERVICE SCHEDULE.....	44
APPENDIX E: EXPENSE DETAIL	45
APPENDIX F: RECOMMENDED RATE SCENARIO CASH FLOW.....	46
APPENDIX G: RECOMMENDED RATE SCENARIO REVENUE SCHEDULE.....	47
APPENDIX H: DESCRIPTION OF CAPITAL IMPROVEMENT PROJECTS (SECTIONS 5 AND 6 FROM THE 2012) WATER SUPPLY MASTER PLAN EXCERPT.....	48

List of Tables

TABLE 1 - NUMBER OF ACCOUNTS	3
TABLE 2 - ANNUAL WATER CONSUMPTION.....	4
FIGURE 3 – WATER USE BY CUSTOMER CLASS	5
TABLE 4 - HISTORICAL & CURRENT MONTHLY WATER RATES	6
TABLE 5 - SENIOR REVENUES.....	8

TABLE 6 - WATER RESERVE FUND BALANCES9

TABLE 7 – REVENUES AND EXPENSES 11

TABLE 8 – FIXED VS. VARIABLE REVENUES 13

TABLE 9 – FIVE YEAR BUDGET SUMMARY WITHOUT INCREASES..... 16

TABLE 10 - PROJECTED OPERATING AND CAPITAL EXPENSES.....20

TABLE 11 - WATER SCENARIO COMPARISONS21

TABLE 12 – FIVE YEAR BUDGET SUMMARY WITH PROPOSED RATE INCREASES23

TABLE 13 - SCENARIO 3 – PROPOSED RATES..... 24

FIGURE 14 - SCENARIO 3 – REVENUES VS. EXPENSES25

TABLE 15 – WATER CONNECTION FEE.....31

INTRODUCTION

The City of Benicia (the City) is located in Solano County approximately 35 miles northeast of San Francisco along the north bank of the Carquinez Strait. With an estimated population of 27,900, the City encompasses roughly 15.7 square miles. The City owns and operates its water system, providing water service to over 9,500 residential, commercial, and institutional accounts as well as supplying untreated water to the Valero Refining Company. Bartle Wells Associates conducted a water rate study in 1999.

The City's water utility is a self-supporting enterprise fund. Revenues are derived primarily from water charges and must be adequate to fund the City's operating and capital programs. Water rates have not been adjusted since 2006. The City has strived to reduce overall expenses by implementing numerous cost-saving measures including staff salary reductions, reducing energy costs, and reorganizing the capital improvement program. Despite the City's best efforts to control costs, expenses continue to increase each year.

The City of Benicia has retained BWA to review the water enterprise's finances, project revenues and expenses over a future, 10-year period, and design water rates and charges. BWA's study develops and recommends changes in the City's water rates to pay for maintenance and capital projects, keep the Enterprise on a sound financial foundation, comply with credit rating requirements, and satisfy the City's reserve fund policy.

Standard and Poor's has downgraded the City's credit rating specifically because the Water and Wastewater Enterprise Funds are not generating enough revenues. An independent auditor has informed the City that rate adjustments will be necessary to restore its credit rating. The credit rating requirements state the Enterprise must have annual revenues to cover 120 percent of all debt service payments. The City's reserve fund policy requires the water operating fund to maintain a reserve equal to 20 percent of current year's revenue.

This report presents key findings and recommendations of our study. The recommendations were developed with substantial input from City staff. The key tasks of the water rate study include:

- Conducting an independent analysis of water rates and finances.
- Developing cash flow projections incorporating reasonable estimates of future operating expenses and capital improvement projects.
- Recommending rate adjustments for 2012/13 through 2016/17 to support the long-term financial health of the water and wastewater enterprises.

- Phasing in rate adjustments over time, to the extent possible, to minimize the annual impact on ratepayers.
- Review and possibly update water connection fees.

This report presents key findings and recommendations of our study. The recommendations were developed with substantial input from City staff.

WATER ENTERPRISE

The Water System

The water system includes a treatment plant, storage and pumping facilities, and transmission and distribution pipelines. The treatment plant operates under regulatory oversight of the California Department of Health Services and has a treatment capacity of 12 million gallons per day. The transmission system consists of two pump stations and approximately 18 miles of pipeline. The distribution system consists of 3 pump stations, 8 pressure-reducing stations and approximately 150 miles of pipelines. The storage system consists of 5 treated water reservoirs and Lake Herman with a capacity of 1,800 acre feet (AF). The City’s water supply contracts include the State Water Project, a 1962 agreement with the City of Vallejo, a water exchange and banking arrangement with the Mojave Water Agency with approximately 2,000 AF, and a settlement agreement with the State as a result of an application for area of origin water rights.

Customers

The City currently provides water service to 9,268 accounts, approximately 74% of which are residential customers including single family residential, multi-family, and mobile homes as shown on Table 1. The majority of customers are served by ¾-inch meters. The City is mostly built out so significant growth is not anticipated in future years.

Table 1. Number of Accounts													
Meter Size	Residential (1)	Multi-Family	Mobile Home	Commercial	Industrial	Municipal	Irrigation	Irrigation Municipal	Ground Water	Untreated Water	Total No. of Meters	Meter Ratios	Equivalent Meters
5/8"	10	1	0	0	0	0	0	0	0	0	11	1.00	11
3/4"	7,765	82	4	234	25	9	50	8	1	1	8,179	1.00	8,179
1"	363	61	3	89	20	6	54	17	0	0	613	1.78	1,090
1.5"	3	83	5	83	14	2	47	13	0	0	250	4.00	1,000
2"	0	64	0	44	10	9	38	25	0	0	190	7.11	1,351
3"	0	2	0	9	3	1	1	6	0	0	22	16.00	352
4"	0	0	0	0	0	1	0	1	0	0	2	28.44	57
6"	0	1	0	0	0	0	0	0	0	0	1	64.00	64
Total	8,141	294	12	459	72	28	190	70	1	1	9,268		12,104

1 - All residential customers are charged the 3/4" meter rate.
Source: Number of water accounts by meter size 07/13/12

Water Consumption

BWA analyzed water consumption for 2008/09 through 2010/11 as shown on Table 2. During this three-year period, total usage declined approximately 9 percent. Like many other California cities and water utilities in the State, the City has experienced a significant decrease in water usage in recent years. The decrease in water consumption Statewide can generally be attributed to a combination of factors - significant conservation efforts including customers taking advantage of efficiency rebate programs and saving water to save money; the economic

slowdown that has resulted in slow growth, foreclosures, and sluggish business activity; and the weather in which the past few years have seen abundant rainfall and mild summers.

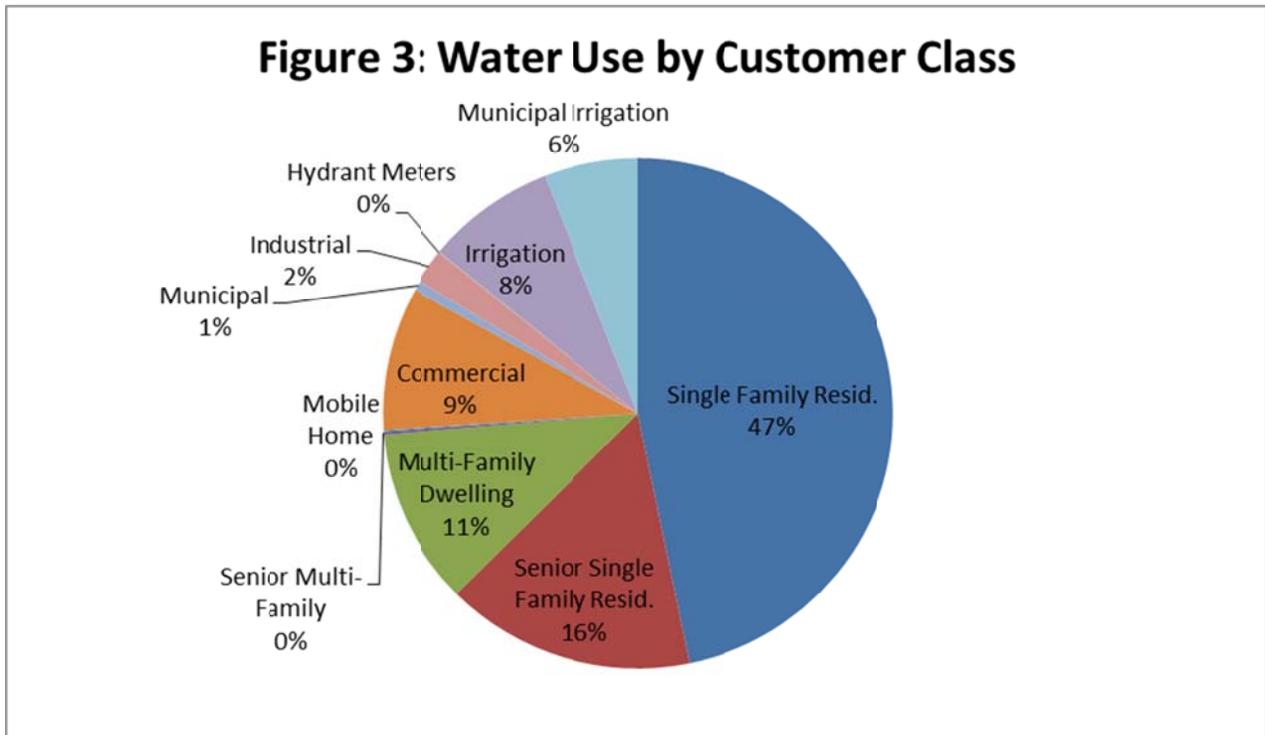
Table 2. Annual Water Consumption						
Customer Category	2008/09		2009/10		2010/11	
	hcf	Percent	hcf	Percent	hcf	Percent
Residential (1)						
Single Family Resid.	917,557	46.8%	834,857	47.7%	836,445	46.8%
Senior Single Family Resid.	287,938	14.7%	270,007	16.1%	281,350	15.7%
Multi-Family Dwelling	209,924	10.7%	200,095	11.4%	200,095	11.2%
Senior Multi-Family	3,766	0.2%	2,767	0.2%	3,295	0.2%
<u>Mobile Home</u>	<u>932</u>	<u>0.0%</u>	<u>1,123</u>	<u>0.1%</u>	<u>1,639</u>	<u>0.1%</u>
Subtotal Residential	1,420,117	72.5%	1,308,849	75.5%	1,322,824	74.0%
Commercial	184,997	9.4%	154,829	8.8%	163,015	9.1%
Municipal	10,780	0.6%	10,427	0.6%	11,478	0.6%
Industrial	46,435	2.4%	45,508	2.6%	38,964	2.2%
Hydrant Meters	5,551	0.3%	1,375	0.1%	551	0.0%
Subtotal, Except Irrigation	1,667,880	85.1%	1,520,988	86.9%	1,536,832	85.9%
Irrigation						
Irrigation	175,696	9.0%	134,727	7.7%	145,643	8.1%
<u>Municipal Irrigation</u>	<u>115,337</u>	<u>5.9%</u>	<u>94,111</u>	<u>5.4%</u>	<u>106,198</u>	<u>5.9%</u>
Subtotal Irrigation Meters	291,033	14.9%	228,838	13.1%	251,841	14.1%
Total Usage	1,958,913	100.0%	1,749,826	100.0%	1,788,672	100.0%
<i>Percent Change</i>			-10.7%		2.2%	

(1) Benicia has 3 mobile home parks that are included in Residential Senior, Multi-Family Senior, and Multi-Family categories.
Source: City of Benicia Consumption Reports

In 2010/11, total annual water consumption was nearly 1,788,400 hundred cubic feet (hcf). One hcf equals 748 gallons. Residential consumption, including single family, multi-family, and mobile homes totaled approximately 1,322,800 or 74 percent of all water use as shown on Figure 3. Average monthly single family residential water use is 12 hcf, equivalent to approximately 300 gallons per day.

Senate Bill X7-7 was passed in 2009 to achieve a 20 percent State-wide reduction in urban per capita water use by the end of 2020. Also known as “20 by 2020,” the law requires each urban

retail water supplier to develop urban water use targets to help meet the 20 percent goal by 2020 and an interim urban water reduction target of 10 percent by 2015 as detailed in the City’s 2010 Urban Water Management Plan. Based on the City’s current consumption levels, the City meets its 2020 goal of 180 gallons per capita per day (gpcd).



Current Water Rates

Table 4 shows the City’s current monthly water rates which were last increased over 6 years ago in 2006. The City’s water rates currently include two components:

- a) A **fixed service charge** that varies based on meter size and is levied regardless of water consumption. Any customer connected to the water system must pay the service charge for each billing period, whether or not they use any water. The service charge recognizes the fact that the water utility incurs fixed costs in connection with the ability to serve each connection at any given time. Fixed costs include staffing, meter reading, debt service, system upkeep, and water quality. The minimum charge per billing period for all accounts is the service charge.

- b) A **volume charge** billed per each unit of metered water use. Single family and multi-family residential customers are billed according to 3-tiered inclining volumetric rate

structure in which the cost of each incremental unit of water increases in each tier. For all other customers, the volume rate structure consists of two tiers.

Table 4. Historical and Current Monthly Water Rates (1)											
		Oct 1993	Sept. 1995	Sept. 1996	May 2000	Jan. 2001	Jan. 2002	Jan. 2003	Jan. 2004	Jan. 2005	Jan. 2006 (current)
<i>Percentage Change</i>			15%	6%	5%	5%	5%	5%	5%	2%	2%
Residential Rates											
Service Charge per meter	Single family	\$8.50	\$9.78	\$10.39	\$10.91	\$11.45	\$12.03	\$12.63	\$13.26	\$13.53	\$13.80
	Multi-family unit	\$6.38	\$7.34	\$7.80	\$8.19	\$8.60	\$9.03	\$9.48	\$9.95	\$10.15	\$10.36
Volume Charge per hcf (2)	0 - 8 hcf	\$0.83	\$0.95	\$1.03	\$1.08	\$1.13	\$1.19	\$1.25	\$1.31	\$1.34	\$1.37
	8 - 30 hcf	\$1.31	\$1.51	\$1.62	\$1.70	\$1.79	\$1.87	\$1.97	\$2.07	\$2.11	\$2.15
	Over 30 hcf	\$1.40	\$1.61	\$1.73	\$1.82	\$1.91	\$2.01	\$2.11	\$2.21	\$2.26	\$2.30
Commercial / Industrial / Irrigation / Municipal Rates											
Service Charge per meter	5/8 - 3/4"	\$11.00	\$12.65	\$13.43	\$14.10	\$14.81	\$15.55	\$16.32	\$17.14	\$17.48	\$17.83
	1"	\$19.56	\$22.49	\$23.86	\$25.05	\$26.30	\$27.62	\$29.00	\$30.45	\$31.06	\$31.68
	1½"	\$44.00	\$50.60	\$53.66	\$56.34	\$59.16	\$62.11	\$65.22	\$68.48	\$69.85	\$71.25
	2"	\$78.22	\$89.95	\$95.37	\$100.14	\$105.15	\$110.40	\$115.92	\$121.72	\$124.16	\$126.64
	3"	\$176.00	\$202.40	\$214.56	\$225.29	\$236.55	\$248.38	\$260.80	\$273.84	\$279.32	\$284.90
	4"	\$312.89	\$359.82	\$381.43	\$400.50	\$420.53	\$441.55	\$463.63	\$486.81	\$496.55	\$506.48
	6"	\$704.00	\$809.60	\$858.20	\$901.11	\$946.17	\$993.47	\$1,043.15	\$1,095.30	\$1,117.21	\$1,139.56
Volume Charge per hcf	0 - 30 hcf	\$1.13	\$1.30	\$1.40	\$1.47	\$1.54	\$1.62	\$1.70	\$1.79	\$1.82	\$1.86
	Over 30 hcf	\$1.33	\$1.53	\$1.64	\$1.72	\$1.81	\$1.90	\$1.99	\$2.09	\$2.13	\$2.18
Senior Citizen / Mobile Home Rates											
Service Charge per meter	Single family	\$2.00	\$2.30	\$2.30	\$2.42	\$2.54	\$2.66	\$2.80	\$2.94	\$2.99	\$3.05
	Multi family unit	\$2.00	\$2.30	\$2.30	\$2.42	\$2.54	\$2.66	\$2.80	\$2.94	\$2.99	\$3.05
Volume Charge per hcf	0 - 8 hcf	\$0.73	\$0.84	\$0.84	\$0.88	\$0.93	\$0.97	\$1.02	\$1.07	\$1.09	\$1.12
	8 - 30 hcf	\$0.80	\$0.92	\$0.92	\$0.97	\$1.01	\$1.07	\$1.12	\$1.17	\$1.20	\$1.22
	Over 30 hcf	\$0.88	\$1.01	\$1.01	\$1.06	\$1.11	\$1.17	\$1.23	\$1.29	\$1.31	\$1.34
Automatic Sprinkler & Private Fire Hydrant Rates											
Flat Rate per meter	2"	\$5.77	\$6.64	\$7.06	\$7.41	\$7.78	\$8.17	\$8.58	\$9.01	\$9.19	\$9.37
	4"	\$10.11	\$11.63	\$12.35	\$12.97	\$13.62	\$14.30	\$15.01	\$15.76	\$16.08	\$16.40
	6"	\$14.32	\$16.47	\$17.48	\$18.35	\$19.27	\$20.24	\$21.25	\$22.31	\$22.76	\$23.21
	8"	\$18.77	\$21.59	\$22.91	\$24.06	\$25.26	\$26.52	\$27.85	\$29.24	\$29.82	\$30.42
	10"	\$23.09	\$26.55	\$28.16	\$29.57	\$31.05	\$32.60	\$34.23	\$35.94	\$36.66	\$37.39
	12"	\$27.42	\$31.53	\$33.44	\$35.11	\$36.87	\$38.71	\$40.65	\$42.68	\$43.53	\$44.40
Fire Hydrants	Double outlet & steamer	\$7.22	\$8.30	\$8.82	\$9.26	\$9.72	\$10.21	\$10.72	\$11.26	\$11.48	\$11.71
	Single outlet & wharf	\$2.16	\$2.48	\$2.65	\$2.78	\$2.92	\$3.07	\$3.22	\$3.38	\$3.45	\$3.52
Untreated Water Rates											
Minimum Charge per meter	2"	\$14.43	\$16.59	\$17.61	\$18.49	\$19.42	\$20.39	\$21.41	\$22.48	\$22.92	\$23.38
	3"	\$28.87	\$33.20	\$35.21	\$36.97	\$38.82	\$40.76	\$42.80	\$44.94	\$45.84	\$46.75
	4"	\$43.29	\$49.78	\$52.79	\$55.43	\$58.20	\$61.11	\$64.17	\$67.37	\$68.72	\$70.10
	6"	\$86.58	\$99.57	\$105.56	\$110.84	\$116.38	\$122.20	\$128.31	\$134.72	\$137.42	\$140.17
Volume Charge per hcf	0 - 150 hcf	\$0.50	\$0.58	\$0.63	\$0.66	\$0.69	\$0.73	\$0.77	\$0.80	\$0.82	\$0.84
	Over 150 hcf	by agmt	by agmt	by agmt	by agmt	by agmt	by agmt	by agmt	by agmt	by agmt	by agmt
(1) Customers are billed on a bi-monthly basis. (2) HCF = one hundred cubic feet = 748 gallons Source: City Ordinance Nos. 93-15, 95-11, 96-9, 00-13											

Senior Water Rates

The City offers discounted water rates to seniors age 60 and older as well as for two of the three mobile home parks in the City with senior residents. The discounted rates were adopted prior to 1993. The rates are based on the same structure of a flat monthly service charge and an inclining volume rate. The senior rate is 22 percent of the regular residential service charge, equivalent to a 78 percent discount. The volume rate for the first block is about 82 percent of the regular residential volume rate, equivalent to an 18 percent discount. The volume rates for the two higher blocks are about 58 percent of the residential rates for those blocks, equal to a 42 percent discount.

To qualify, a customer must show proof of age. Many other cities that offer either senior or low-income discounts require applicants to submit proof of age or income either annually or bi-annually to verify eligibility. The City currently does not have a process to verify age requirements annually.

The reduced rate was designed to assist those in need. However, this discount violates Proposition 218 because the rates provide a lower cost of service to one specific customer class and is subsidized through higher charges to other customers. Table 5 presents the annual revenues based on the senior discount for the past three fiscal years.

Table 5. Senior Revenues			
	2008-09	2009/10	2010/11
REVENUES BASED ON SENIOR DISCOUNT			
Senior Single Family Residential (1)			
Service Charge	\$81,379	\$84,477	\$87,825
Volume Charges	\$357,498	\$335,020	\$347,274
<u>Other Revenue</u>	<u>\$920</u>	<u>\$1,129</u>	<u>\$1,039</u>
Total Senior SFR Revenue	\$439,797	\$420,626	\$436,137
Senior Multi-Family Residential			
Service Charge	\$3,571	\$3,455	\$3,292
<u>Volume Charges</u>	<u>\$4,276</u>	<u>\$3,493</u>	<u>\$4,910</u>
Total Multi-Family Senior Revenue	\$7,848	\$6,948	\$8,202
Total Senior Revenues Based on Discount	\$447,644	\$427,575	\$444,339
REVENUES WITHOUT SENIOR DISCOUNT			
Senior Single Family Residential			
Service Charge	\$367,718	\$381,720	\$396,845
<u>Volume Charges</u>	<u>\$529,375</u>	<u>\$489,986</u>	<u>\$506,611</u>
Total Senior Water Sales Revenues	\$897,093	\$871,706	\$903,456
Senior Multi-Family Residential			
Service Charge	\$12,115	\$11,722	\$11,167
<u>Volume Charges</u>	<u>\$7,163</u>	<u>\$5,956</u>	<u>\$7,554</u>
Total Senior Water Sales Revenues	\$19,278	\$17,677	\$18,720
Total Senior Revenues Without Discount	\$916,371	\$889,383	\$922,176
<i>Difference/Amount of Discount</i>	<i>\$468,726</i>	<i>\$461,808</i>	<i>\$477,838</i>
Source: Senior Water Revenues for last 3 years			
1 - Current SFR senior discount: Meter Charge = 22% of SFR rate, Volume Charge: 1st Tier = 82% of SFR rate, 2nd & 3rd Tier = 58%			
2 - Current MF senior discount: Meter Charge = 29% of MF rate, Volume Charge = 1st Tier = 82% of SFR rate, 2nd & 3rd Tier = 58%			

Water Enterprise Finances

Fund Reserves

As of July 1, 2011, the water enterprise held total reserves of nearly \$10.9 million in operations, capital, and replacement reserve funds as shown on Table 6. With a balance of \$4.2 million, the Water Operations Reserve (Fund 090) functions like a “checking account”. The water enterprise has been operating in a deficit and slowly drawing down on the operating reserve to cover expenses over the past few years. Without rate increases or subsidies, the operating deficit will continue to grow and reserves will become depleted by the end of 2013/14.

Table 6. Water Reserve Fund Balances - July 1, 2011	
Reserve Fund	Beginning Balance
Water Operations - 090	\$4,204,682
Water Connection - 045	\$4,164,490
Equipment/Vehicle Replacement - 592	\$410,921
Filter Replacement - 593	\$105,817
System Replacement - 594	\$1,760,896
Major Equipment/Vehicle - 595	(\$13,614)
<u>Major Capital - 596</u>	<u>\$225,294</u>
Total Water Reserves	\$10,858,486
Source: Water Enterprise Working Capital Balance Forwards	

The nearly \$4.2 million in the Connection Fee Reserves (Fund 045) is restricted, funded by connection fees that were prepaid in previous years. The revenues from connection fees can only be used to fund projects to expand the water system for additional capacity.

Approximately \$2.5 million in reserves are earmarked for specific equipment replacement and capital projects. The operating fund makes yearly transfers to the replacement funds to ensure that cash is set aside to pay for essential maintenance and repair and replacement projects on a pay-as-you-go basis. For equipment and vehicle replacements, Fund 592 reserve covers expenditures less than \$25,000 and Fund 595 covers expenditures greater than \$25,000. Fund 593 pays for filter replacements that occur every two years. For expenditures related to system replacements, Fund 516 is for small replacements, such as pipelines, while Fund 518 is for major system replacements. However, the water utility has not made any transfer to the Major Capital (Fund 596) reserve fund since 2008/09 due to the operating deficit.

Fund Balance Reserve Policy

In April 2011, the City adopted a “Fund Balance Reserve Policy” that requires a minimum operating fund reserve balance equivalent to 20 percent of enterprise revenues. Maintaining a prudent minimal level of fund reserves provides a financial cushion for dealing with unanticipated expenses, revenue shortfalls, and non-catastrophic emergency capital repairs. The fund reserve target will escalate over time as the City’s revenues gradually increase. It is acceptable if reserves fall below the target on a temporary basis, provided action is taken to achieve the target over the longer run.

Revenues and Expenses

Table 7 shows a summary of water enterprise revenues and expenses from 2008/09 through 2012/13 as well as the average percent change for each category over the five year period. As shown on the table, revenues have not covered expenses and the water enterprise has run an operating deficit since 2008/09.

Table 7. Water Enterprise Revenues and Expenses						
	Actual 2008/09	Actual 2009/10	Actual 2010/11	Amended 2011/12	Budget 2012/13	Average Change
REVENUES						
Water Sales Revenues	\$5,601,585	\$5,130,550	\$5,249,730	\$5,517,500	\$5,856,375	1.3%
Water Sales - Valero	829,225	1,018,620	947,845	1,000,000	1,000,000	5.3%
Other Revenue	236,185	228,950	71,915	70,500	73,750	-17.3%
<u>Interest Income</u>	<u>233,930</u>	<u>74,655</u>	<u>22,360</u>	<u>75,000</u>	<u>80,000</u>	<u>26.0%</u>
Total Revenues	6,900,925	6,452,775	6,291,850	6,663,000	7,010,125	0.5%
EXPENSES						
Operating Expenses						
Salaries & Wages	1,718,440	1,736,145	1,649,435	1,820,495	1,891,380	2.6%
Benefits	706,585	699,605	710,325	742,955	782,480	2.6%
Chemicals	415,000	359,130	273,085	357,755	358,000	-1.6%
Electricity	408,200	367,960	403,950	374,300	385,000	-1.1%
Electricity (Cordelia & Lake Herman)	56,995	138,760	129,060	128,000	128,100	33.9%
Water Purchases	707,635	676,415	501,460	653,100	655,100	0.1%
Lake Herman Repairs & Utilities	5,420	5,420	4,740	5,700	5,870	2.7%
<u>Other Services & Supplies</u>	<u>793,730</u>	<u>622,185</u>	<u>648,365</u>	<u>868,745</u>	<u>806,655</u>	<u>2.4%</u>
Subtotal Operating Expenses	4,812,005	4,605,620	4,320,420	4,951,050	5,012,585	1.3%
Debt Service						
2002 Refunding Bond Debt Service	1,009,875	950,795	987,750	948,475	943,640	-1.6%
<u>2004 SRF Loan Debt Service</u>	<u>740,395</u>	<u>740,395</u>	<u>740,395</u>	<u>740,400</u>	<u>740,395</u>	<u>0.0%</u>
Subtotal Debt Service	1,750,270	1,691,190	1,728,145	1,688,875	1,684,035	-0.9%
Non-Operating Expenses						
Capital Outlay	516,985	235,940	197,090	876,000	293,695	51.8%
Interfund Transfers						
General Fund	48,250	48,250	48,250	55,735	56,295	4.1%
Equip/Vehicle Replace (Fund 592)	70,000	70,000	75,000	70,000	80,000	3.7%
Filter Replace (Fund 593)	40,000	75,000	70,000	80,000	70,000	20.7%
System Replace (Fund 594)	200,000	150,000	50,000	180,000	180,000	42.1%
Water Supply	212,625	0	0	0	0	N/A
<u>Major Capital (Fund 596)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0.0%</u>
Subtotal Interfund Transfers	570,875	343,250	243,250	385,735	386,295	-2.6%
<u>Internal Service Charges</u>	<u>404,705</u>	<u>554,535</u>	<u>745,190</u>	<u>535,655</u>	<u>540,410</u>	<u>11.0%</u>
Subtotal Non-Operating Expenses	1,492,565	1,133,725	1,185,530	1,797,390	1,220,400	0.0%
Total Expenses	8,054,840	7,430,535	7,234,095	8,437,315	7,917,020	0.0%
Net Income	(1,153,915)	(977,760)	(942,245)	(1,774,315)	(906,895)	
Debt Service Coverage (min. 1.20x)						
	1.19	1.09	1.14	1.01	1.19	
<i>Coverage Met</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	
Source: Water Rev Exp Actuals 11 12 as of 8/3/12						

Revenues

Based on the 2012/13 budget, the City anticipates collecting total water revenues of about \$7,010,000. Budgeted water sales revenues for 2012/13, without taking into account any rate increase, are projected at \$5,856,000, representing approximately 84% of all revenues. In addition to retail water sales, the City sells untreated water to Valero which accounts for 14 percent of total revenues. Other revenue sources include interest, rents and concessions, penalties, refunds/rebates, and sale of real/personal property.

Fixed vs. Variable Revenue Profile

As previously noted, the service charge is intended to recover the fixed costs of providing basic service, and the usage charge recovers the costs that fluctuate with the quantity of water purchased. Water utilities can recover costs from a combination of fixed and variable charges. The percentage of revenues derived from the fixed and variable charges varies for each agency and should be proportional to each system's expenditures.

The California Urban Water Conservation Council (CUWCC)'s Best Management Practice (BMP) 11 (1.4) recommends a rate structure that recovers at least 70% of rate revenues from volumetric rates. However, the CUWCC provides options for not complying with BMP 11 and recognizes that not all signatories comply with the guideline.

As shown on Table 8, the City collects nearly 39% of total revenues from the service charge and 61% from the volume charges in 2010/11. A 2009 Valero Refinery Raw Water Cost-of-Service Study found that 85 percent of the water system's costs are fixed and 15 percent are variable. The City's current revenue profile is closer in line with actual costs. The more costs that are recovered through fixed charges, the more secure the City's revenue stream because the level of revenue is predictable and not subject to variability as water use fluctuates.

BWA recommends that the City reexamine the water system's cost allocation profile and adjust the percentage of revenue collected from the fixed and variable charges as needed for the next rate study.

Table 8. Fixed vs. Variable Revenues			
	2008/09	2009/10	2010/11
Revenues from Fixed (Service) Charges	\$2,008,561	\$1,998,746	\$1,993,656
<u>Revenues from Variable (Volume) Charges</u>	<u>\$3,630,110</u>	<u>\$3,132,994</u>	<u>\$3,182,952</u>
Total Revenues	\$5,638,670	\$5,131,741	\$5,176,608
% Fixed Revenues	35.6%	38.9%	38.5%
<u>% Variable Revenues</u>	<u>64.4%</u>	<u>61.1%</u>	<u>61.5%</u>
Total	100.0%	100.0%	100.0%

Source: Water Revenue for ALL Customers for FY 08/09, 09/10, 10/11

Operating Expenses

Operating expenses for the water utility include salaries and benefits, chemicals, electricity, water purchases, maintenance repairs and utilities, and other services and supplies. As shown on Table 7, for the 2012/13 budget year, operating expenses total \$5.0 million. The City recently negotiated a 10 percent reduction in Salaries & Benefit costs which resulted in a savings of approximately \$255,000 in 2011/12 (based on a comparison of the Adopted 2011/12 Budget and the Amended 2011/12 Budget). Detailed budget information is included in Appendix A (page 35).

Non-Operating Expenses

Non-operating expenses include capital outlay, interfund transfers, and internal service charges. As shown on Table 7, total non-operating expenditures for 2012/13 are estimated at \$1.2 million. Capital outlay includes durable tools and equipment, facility upgrades, water and service line replacements, office furniture and equipment, and other projects. Interfund transfers include transfers to the General Fund and to the various water capital reserve funds. The internal service fund (ISF) charges represent the water enterprise’s allocation of administrative services, workers’ compensation, and equipment services charges.

Capital Improvement Program

The City recently completed the 2012 Water System Master Plan which outlines a long-term capital improvement plan (CIP) to maintain the water system through 2032. Separate water CIPs are developed for facilities benefiting all water customers which are funded from rates, and for facilities to serve expansion and increases in additional capacity which will be funded from connection charges.

Capital improvement expenditures vary from year to year and are based on the latest projections from the Water System Master Plan as shown on Table 13. Only capital projects to improve the current system, not expansion projects, are included in the rate projections. Total capital projects

to be funded from water rates during the period of 2013/14 through 2016/17 are estimated at \$4.1 million. Appendix B (page 42) includes the Water Supply Master Plan capital improvement plan through 2021/32. Detailed descriptions for each of the projects are included in Appendix H (page 48).

Required Vehicle Purchases

Like capital projects, vehicles degrade over time and need to be replaced. Appendix C (page 43) outlines the required vehicle purchase schedule. The water enterprise pays for these vehicle replacements with funds accumulated in the equipment/vehicle reserve fund. The annual transfer to this reserve fund should continue to comply with the necessary purchase schedule.

Cost Reduction Efforts

The City has continually strived to reduce operating and capital expenditures. In 2011/12, the City reduced employee costs with a 10% reduction in salaries and benefit costs for all employees. The City has seen significant savings in energy costs by replacing outdated pumps and motors with more energy efficient models, pumping water at non-peak hours, installing a solar photovoltaic (PV) system at three pump stations, and negotiating future power rates for several of the pump stations. In terms of capital projects, the CIP was trimmed to only include strictly essential projects while the water enterprise prudently sets aside funds for future capital needs as to not incur any unnecessary new debt.

Outstanding Debt

The water enterprise has two outstanding debt issues – a 2002 Water Refunding Bond for \$10,805,000 and a 2004 State Revolving Fund (SRF) Loan for \$11,716,747. Annual debt service payments total nearly \$1.6 million as shown in Appendix D (page 44).

In September 2002, the City issued Water Revenue Refunding Bonds in the amount of \$10,805,000. The proceeds were used to defease the 1991 Water System Refunding Project Certificates of Participation, prepay the City's 1997 Community Drought Relief Promissory Note, purchase a reserve fund surety bond and pay the costs of issuing the bonds. The Bonds are secured by a pledge of the net revenues of the water enterprise and are subject to the prior lien of the 1967 Bonds. Interest rates range from 1.25 percent to 4.40 percent. Principal payments are payable annually on November 1 and interest payment semi-annually on May 1 and November 1. Annual debt service payments are \$740,390 with the bond maturing in 2017.

In 2004, the City entered into a State Revolving Fund (SRF) loan agreement with the State Department of Water Resources for \$11,716,747 to assist financing the Water Treatment Plant Improvement Project, which enabled the City to meet safe drinking water standards set by the

State. The loan is a long-term liability of the water enterprise, bearing interest of 2.39 percent. Principal and interest payments are payable semi-annually on January 1 and July 1 of each year. Annual debt service payments are approximately \$950,000 with the last payment due in 2027.

Debt Service Coverage

Pursuant to the legal agreements securing the outstanding debt issues, the City has legally agreed to abide by a number of debt covenants designed to ensure adequate repayment security. Key among these is a debt service coverage covenant that requires the City to raise water rates as needed to achieve 120% coverage on annual debt service¹. This means that annual net revenues – total revenues less operations and maintenance expenses – must be at least 120% of combined annual debt service payments. Operating expenses include salaries and benefits, chemicals, electricity, water purchases, and other services and supplies. This is a standard legal covenant for securing water revenue bonds or certificates of participation (COPs).

The 2002 Refunding Bonds requires 1.20 times coverage on the bond payments only. However, Standard and Poor's rates all outstanding debt payments in their debt service coverage calculation and determined that the water enterprise did not meet the coverage requirement in 2010/11 and 2011/12. Consequently in November 2011, Standard and Poor's downgraded the credit rating for the water enterprise from an 'AA' to an 'A+'. The negative outlook warns that without raising rates and additional revenues, the water enterprise could be downgraded further.

¹ The SRF loan's coverage requirement is 110%, but Standard & Poor's rates the utility on retaining 120% debt service coverage on all outstanding debt.

Revenues-Expenses Projections (No Rate Increase)

Table 9 gives a summary of the water enterprise's finances for the next five years if no rate adjustments are enacted. Based on BWA's projections, without any rate increases, the water enterprise will continue to run an operating deficit and will deplete the operating fund reserve by the end of 2013/14 at which point it would have to borrow from the General Fund or procure funds from another source. Additionally, the water enterprise will fail to meet its debt service coverage requirements beginning in 2011/12 which could possibly result in another credit rating downgrade.

Table 9. Five-Year Budget Summary Without Rate Increases						
	Amended 2011/12	Projected 2012/13	Projected			
			2013/14	2014/15	2015/16	2016/17
Beginning Operating Fund Balance	\$4,204,682	\$2,430,367	\$1,185,000	(\$1,196,643)	(\$3,645,981)	(\$6,092,588)
REVENUES						
Water Sales Revenues	5,517,500	5,517,500	5,517,500	5,545,088	5,545,088	5,572,675
Additional Senior Revenue	0	0	0	0	0	0
Water Sales - Valero (2)	1,000,000	1,000,000	1,010,000	1,020,000	1,030,000	1,040,000
Other Revenue	70,500	73,750	76,000	78,000	80,000	82,000
<u>Interest Income</u>	<u>75,000</u>	<u>80,000</u>	<u>12,000</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Revenues	6,663,000	6,671,250	6,615,500	6,643,088	6,655,088	6,694,675
EXPENSES						
Operating Expenses	4,951,050	5,012,585	5,142,000	5,276,000	5,415,000	5,558,000
Debt Service	1,688,875	1,684,035	1,683,143	1,681,926	1,683,194	1,667,279
Capital Outlay	876,000	293,695	303,000	311,000	320,000	329,000
Interfund Transfers	385,735	386,295	474,000	529,000	595,000	673,000
Internal Service Charges	535,655	540,410	557,000	574,000	591,000	609,000
<u>Capital Improvement Projects</u>	<u>0</u>	<u>0</u>	<u>838,000</u>	<u>720,500</u>	<u>497,500</u>	<u>553,000</u>
Expenses	1,797,390	1,220,400	2,172,000	2,134,500	2,003,500	2,164,000
Total Expenses	8,437,315	7,917,020	8,997,143	9,092,426	9,101,694	9,389,279
Net Income	(1,774,315)	(1,245,770)	(2,381,643)	(2,449,338)	(2,446,607)	(2,694,604)
Ending Fund Balance	2,430,367	1,184,597	(1,196,643)	(3,645,981)	(6,092,588)	(8,787,192)
Debt Service Coverage (min. 1.20x)	1.01	0.98	0.88	0.81	0.74	0.68
<i>Coverage Met</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>
Min. Fund Reserve Target (20% of Rev.)	1,332,600	1,334,250	1,323,100	1,328,618	1,331,018	1,338,935
<i>Target Met</i>	<i>yes</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>no</i>

WATER RATE SCENARIOS

Rate Study Objectives

BWA developed three rate scenarios to determine the impacts on the water enterprise's finances and on ratepayers. The scenarios were developed to phase in rate increases and to meet the following objectives:

- Revenues cover all expenses, including operating, capital and debt service (this objective is consistent with the City's Balanced Operating Budget Policy);
- Net revenues (all revenues available after O&M expenses are covered) are at least 120% of annual debt service, which includes principal and interest payments on the revenue refunding bond and the SRF loan;
- The Enterprise meets the City's fund balance reserve policy of 20% of current year revenue;
- All capital projects are funded on a pay-as-you-go basis from current reserves and current revenues as to not incur future debt unless necessary.

The City has continually maintained the water system to meet State and Federal regulations and to provide a clean and safe water supply while reducing expenditures when possible. Cost saving measures include 10 percent reductions in staff salaries, reorganizing the capital improvement program, and lowering utility costs with off-peak pumping and solar energy. The goal of this study is to recommend rates that maintain long-term financial sustainability while minimizing the impact on customers.

Assumptions

For each scenario, BWA developed cash projections to evaluate long-term finances and determine rate increases for the five-year period from 2012/13 through 2016/17. Water rates were developed to minimize impacts on customers while covering operating capital costs, meeting debt service coverage, and building reserves. The cash flows are based on the best information currently available and include a number of conservative assumptions including:

Revenues

- Rate adjustments will take effect on January 1 of each year.
- No significant growth is projected in the next 5 years.
- Interest is estimated at 1.0% each year.
- The senior discount will be discontinued in 2012/13. The Council will examine alternative means to phase out the discount as presented by City staff.

- Service charges will continue to recover 39%, and volume charge will recover 61% of water sales revenues, the same percentage for the last two fiscal years.
- Other Revenues are escalated by 3% each year based on historical trends.
- Revenues from Valero are escalated at 3 percent each year. The City updates its rates for Valero on a bi-annual basis based on actual operating costs. As a conservative estimate for this rate study, Valero's revenues are projected to increase roughly 3 percent each year, equivalent to the overall annual change in operating expenses.
- Total water consumption is anticipated to remain constant. Since 2008/09, total consumption decreased nearly 9 percent but appears to be leveling off as shown on Table 2. Accurately estimating future water consumption is difficult due to the many factors that can influence water use. To be conservative, this study assumes no significant change in consumption based on 2010/11 use. The projections assume that any increase in consumption due to the improving economy will be offset by conservation efforts. Additionally, the City is in the process of replacing aging meters annually which will allow them to capture additional water use and to read meters more accurately.

Expenses

- No new debt is issued to fund capital projects during the next ten years through 2021/22. Utilizing pay-as-you-go financing, projects will be paid with revenues from water rates and reserves.
- Approximately \$1.4 million in capital projects will be funded from reserves in 2011/12 and 2012/13.
- Overall operating expenses are estimated to increase around 3% each year based on historical averages.
- Capital improvement expenses are based on the 2012 Water System Master Plan and only include necessary projects to ensure continued service.
- The transfer to the System Replacement reserve (Fund 594) will be increased by 20% each year beginning in 2013/14 to gradually build funding for future system replacement projects and to pay for projects on a pay-as-you-go basis.
- Annual transfers to the Major Capital reserve (Fund 596) will begin in 2013/14 at \$50,000 and will be increased by 20% each year. No transfers have been made into the Major Capital since 2009/10 due to the operating deficit. Annual transfers will be phased in to set aside funding for future major capital projects, allowing the water utility to pay for projects with cash rather than incurring new debt.

Escalation Factors

Table 10 shows projected expenses through 2021/22. The assumed percent increases are based on historical averages from the 2008 to 2011 fiscal year actuals and input from City staff. Salaries and Benefits were reduced based on the negotiations for City contracts. Only electricity for the Cordelia Pump Station and Lake Herman is projected to increase by 6 percent each year due to rising fuel and electricity costs. The City has already negotiated electricity rates for the other facilities which are not expected to increase. Water Purchases are escalated by 5 percent based on the City's current water supply contracts. Chemicals are escalated by 4 percent as a conservative estimate since these costs can vary due to new regulations. Total overall operating expenses are estimated to increase approximately 3% each year. Bartle Wells Associates believes the 3 percent escalation factor reflects the long-term cost increases and can be used in the 10-year forecast of operation and maintenance expenses. For instance, the historical average annual increase for the San Francisco Bay Area CPI for 2000 through 2011 is 2.57%. Estimated expenses through 2020/21 are presented in Appendix E (page 45).

Table 10. Projected Operating and Capital Expenses						
Budget Item	Budget 2012/13	Escalation Factor	Projected			
			2013/14	2014/15	2015/16	2016/17
Salaries & Benefits						
Salaries & Wages	\$1,891,380	1%	\$1,910,000	\$1,929,000	\$1,948,000	\$1,967,000
Benefits	<u>782,480</u>	4%	<u>814,000</u>	<u>847,000</u>	<u>881,000</u>	<u>916,000</u>
Total Salaries & Benefits	2,673,860		2,724,000	\$2,776,000	\$2,829,000	\$2,883,000
Percent Change			1.9%	1.9%	1.9%	1.9%
Services & Supplies						
Chemicals	358,000	4%	372,000	387,000	402,000	418,000
Electricity	385,000	0%	385,000	385,000	385,000	385,000
Electricity (Cordelia & Lake Herman)	128,100	6%	136,000	144,000	153,000	162,000
Water Purchases	655,100	5%	688,000	722,000	758,000	796,000
Lake Herman Repairs & Utilities	5,870	3%	6,000	6,000	6,000	6,000
Other Services & Supplies	<u>806,655</u>	3%	<u>831,000</u>	<u>856,000</u>	<u>882,000</u>	<u>908,000</u>
Total Services & Supplies	2,338,725		2,418,000	2,500,000	2,586,000	2,675,000
Percent Change			3.4%	3.4%	3.4%	3.4%
Debt Service						
2002 Refinancing Bond-Interest	193,640	varies	158,405	127,190	93,456	57,541
2002 Refinancing Bond-Principal	750,000	varies	784,345	814,345	849,345	869,345
2004 SDWSRF Loan-Interest	218,865	varies	212,632	199,942	186,950	173,643
2004 SDWSRF Loan-Principal	<u>521,530</u>	varies	<u>527,760</u>	<u>540,449</u>	<u>553,443</u>	<u>566,750</u>
Total Debt Service	1,684,035		1,683,143	1,681,926	1,683,194	1,667,279
Percent Change			-0.1%	-0.1%	0.1%	-0.9%
Capital Outlay						
Durable Tools & Equip	15,300	3%	16,000	16,000	16,000	16,000
Office Furniture	1,625	3%	2,000	2,000	2,000	2,000
Office Equipment	5,270	3%	5,000	5,000	5,000	5,000
Other Capital Outlay	<u>271,500</u>	3%	<u>280,000</u>	<u>288,000</u>	<u>297,000</u>	<u>306,000</u>
Total Capital Outlay	293,695		303,000	311,000	320,000	329,000
Percent Change			3.2%	2.6%	2.9%	2.8%
Interfund Transfers						
General Fund	56,295	3%	58,000	60,000	62,000	64,000
Equip/Veh Replace (Fund 592)	80,000	0%	80,000	80,000	80,000	80,000
Filter Replace (Fund 593)	70,000	0%	70,000	70,000	70,000	70,000
System Replace (Fund 594)	180,000	20%	216,000	259,000	311,000	373,000
Major Capital (Fund 596)	0	20%	<u>50,000</u>	<u>60,000</u>	<u>72,000</u>	<u>86,000</u>
Total Interfund Transfers	386,295		474,000	529,000	595,000	673,000
Percent Change			22.7%	11.6%	12.5%	13.1%
Internal Service Charges						
Workers' Comp ISF	42,450	3%	44,000	45,000	46,000	47,000
Administrative Services ISF	444,715	3%	458,000	472,000	486,000	501,000
Equipment Services ISF	<u>53,245</u>	3%	<u>55,000</u>	<u>57,000</u>	<u>59,000</u>	<u>61,000</u>
Total Internal Service Charges	540,410		557,000	574,000	591,000	609,000
Percent Change			3.1%	3.1%	3.0%	3.0%
Total Expenses	7,917,020		8,159,143	8,371,926	8,604,194	8,836,279
Percent Change			3.1%	2.6%	2.8%	2.7%

Rate Scenarios

BWA evaluated several scenarios based on varying timelines to meet all the water utility's objectives. Consistent with generally accepted rate design standards and Proposition 218, BWA believes agencies should consider adopting rates for up to five years and conduct a detailed rate analysis every five years. BWA believes the City should approve rate increases through 2016/17. After five years, the City should conduct another cost of service and rate design study.

As shown on Table 11, the three rate scenarios vary based on when the water utility meets all three objectives. The table shows the monthly bill for a single family residential (SFR) customer who on average uses 12 hcf of water per month. Bill impacts for each customer will vary based on actual use and meter size for non-residential customers.

Table 11. Water Scenario Comparison						
	Current	Prop. 218 Rates				
	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Scenario 1: Meet Targets in 1 Year by 2012/13		20.0%	16.7%	1.5%	3.0%	3.0%
Average SFR Monthly Charge - 12 hcf/month	\$33.33	\$40.00	\$46.65	\$47.38	\$48.81	\$50.26
% Increase		20.0%	16.6%	1.6%	3.0%	3.0%
\$ Increase		\$6.67	\$6.65	\$0.73	\$1.43	\$1.45
Revenues Cover Expenses	no	yes	yes	yes	yes	yes
Debt Service Coverage Target Met	no	yes	yes	yes	yes	yes
Reserve Target Met	yes	yes	yes	yes	yes	yes
Scenario 2: Meet Targets in 3 Years by 2014/15		9.0%	15.3%	12.5%	7.8%	2.0%
Average SFR Monthly Charge - 12 hcf/month	\$33.33	\$36.32	\$41.90	\$47.19	\$50.87	\$51.89
% Increase		9.0%	15.4%	12.6%	7.8%	2.0%
\$ Increase		\$2.99	\$5.58	\$5.29	\$3.68	\$1.02
Revenues Cover Expenses	no	no	no	yes	yes	yes
Debt Service Coverage Target Met	no	yes	yes	yes	yes	yes
Reserve Target Met	yes	yes	no	yes	yes	yes
Scenario 3: Meet Targets in 5 Years by 2016/17		7.0%	12.9%	11.5%	6.8%	3.5%
Average SFR Monthly Charge - 12 hcf/month	\$33.33	\$35.65	\$40.28	\$44.92	\$48.02	\$49.72
% Increase		7.0%	13.0%	11.5%	6.9%	3.5%
\$ Increase		\$2.32	\$4.63	\$4.64	\$3.10	\$1.70
Revenues Cover Expenses	no	no	no	yes	yes	yes
Debt Service Coverage Target Met	no	yes	yes	yes	yes	yes
Reserve Target Met	yes	yes	no	no	no	yes

Recommended Scenario

To minimize the impacts on customers, BWA recommends Scenario #3 where all objectives are met in 2016/17. Scenario 3 allows the City to gradually phase in rate increases while eliminating the operating deficit and meeting debt service and reserve fund targets. Table 12 shows the cash flow projection summarizing estimated revenues, expenses, and fund balances. Table 13 presents the projected rates for Scenario 3 for all customer classes. Figure 14 compares the revenues and expenses through the five-year period. Appendix F (page 46) includes ten year projections through 2020/21. Appendix G (page 47) details the estimated annual revenue schedule for Scenario 3.

Reserve Fund Financing

With the recommended rate increases, the water enterprise can begin funding all its reserve funds again. BWA projects this funding process can begin in the 2014 fiscal year at the following levels:

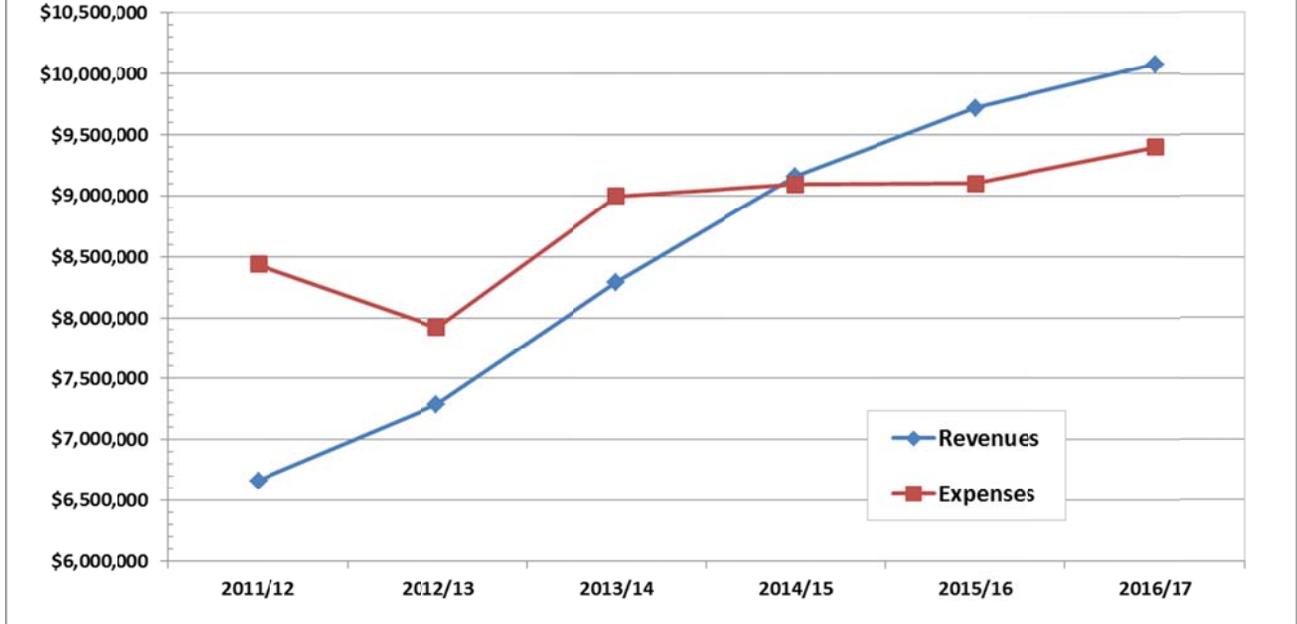
- Fund 592 (Equipment/Vehicle Replacement) \$70,000
- Fund 593 (Filter Replacement) \$80,000
- Fund 594 (System Replacement) \$240,000
- Fund 596 (Major System Replacement) \$50,000

This level of funding will allow the water enterprise to fund all of its CIP expenses on a pay-as-you-go basis through 2016/17.

Table 12. Five-Year Budget Summary with Proposed Rate Increases						
	Amended 2011/12	Projected				
		2012/13	2013/14	2014/15	2015/16	2016/17
Water Sales Rate Adjustment (1)		7.0%	12.9%	11.5%	6.8%	3.5%
Beginning Operating Fund Balance	\$4,204,682	\$2,430,367	\$1,801,000	\$1,094,597	\$1,159,647	\$1,775,078
REVENUES						
Water Sales Revenues	5,517,500	5,903,750	6,667,400	7,469,411	7,976,685	8,297,554
Additional Senior Revenue	0	230,000	519,340	579,064	618,440	640,086
Water Sales - Valero (2)	1,000,000	1,000,000	1,010,000	1,020,000	1,030,000	1,040,000
Other Revenue	70,500	73,750	76,000	78,000	80,000	82,000
<u>Interest Income</u>	<u>75,000</u>	<u>80,000</u>	<u>18,000</u>	<u>11,000</u>	<u>12,000</u>	<u>18,000</u>
Total Revenues	6,663,000	7,287,500	8,290,740	9,157,475	9,717,125	10,077,640
EXPENSES						
Operating Expenses						
Salaries & Benefits	2,563,450	2,673,860	2,724,000	2,776,000	2,829,000	2,883,000
Chemicals	357,755	358,000	372,000	387,000	402,000	418,000
Electricity	374,300	385,000	385,000	385,000	385,000	385,000
Electricity (Cordelia & Lake Herman)	128,000	128,100	136,000	144,000	153,000	162,000
Water Purchases	653,100	655,100	688,000	722,000	758,000	796,000
Lake Herman Repairs & Utilities	5,700	5,870	6,000	6,000	6,000	6,000
<u>Other Services & Supplies</u>	<u>868,745</u>	<u>806,655</u>	<u>831,000</u>	<u>856,000</u>	<u>882,000</u>	<u>908,000</u>
Subtotal Operating Expenses	4,951,050	5,012,585	5,142,000	5,276,000	5,415,000	5,558,000
Debt Service						
2002 Refunding Bond Debt Service	948,475	943,640	942,750	941,535	942,801	926,886
<u>2004 SRF Loan Debt Service</u>	<u>740,400</u>	<u>740,395</u>	<u>740,393</u>	<u>740,391</u>	<u>740,393</u>	<u>740,393</u>
Subtotal Debt Service	1,688,875	1,684,035	1,683,143	1,681,926	1,683,194	1,667,279
Non-Operating Expenses						
Capital Outlay	876,000	293,695	303,000	311,000	320,000	329,000
Interfund Transfers						
General Fund	55,735	56,295	58,000	60,000	62,000	64,000
Equip/Vehicle Replace (Fund 592)	70,000	80,000	80,000	80,000	80,000	80,000
Filter Replace (Fund 593)	80,000	70,000	70,000	70,000	70,000	70,000
System Replace (Fund 594)	180,000	180,000	216,000	259,000	311,000	373,000
<u>Major Capital (Fund 596)</u>	<u>0</u>	<u>0</u>	<u>50,000</u>	<u>60,000</u>	<u>72,000</u>	<u>86,000</u>
Subtotal Interfund Transfers	385,735	386,295	474,000	529,000	595,000	673,000
Internal Service Charges	535,655	540,410	557,000	574,000	591,000	609,000
<u>Capital Improvement Projects (3)</u>	<u>0</u>	<u>0</u>	<u>838,000</u>	<u>720,500</u>	<u>497,500</u>	<u>553,000</u>
Subtotal Non-Operating Expenses	1,797,390	1,220,400	2,172,000	2,134,500	2,003,500	2,164,000
Total Expenses	8,437,315	7,917,020	8,997,143	9,092,426	9,101,694	9,389,279
Net Income	(1,774,315)	(629,520)	(706,403)	65,049	615,431	688,361
Ending Fund Balance	2,430,367	1,800,847	1,094,597	1,159,647	1,775,078	2,463,439
Debt Service Coverage (min. 1.20x)						
	1.01	1.35	1.87	2.31	2.56	2.71
<i>Coverage Met</i>	<i>no</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>	<i>yes</i>
Min. Fund Reserve Target (20% of Rev.)						
	1,332,600	1,457,500	1,658,148	1,831,495	1,943,425	2,015,528
<i>Target Met</i>	<i>yes</i>	<i>yes</i>	<i>no</i>	<i>no</i>	<i>no</i>	<i>yes</i>
(1) Rate increases effective January 1 of each year.						
(2) Other Water Sales, Other Revenues, Other Connection Fees Revenues, and Valero Water Sales escalated by 3% each year.						
(3) CIP is based on Draft Water Master Plan CIP less System Replacement and Major Capital transfers. Does not include projects funded with connection fees.						

Table 13. Scenario 3 - Proposed Rates							
		Current	Proposed				
		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Residential Rates							
Service Charge per meter	Single family	\$13.80	\$14.77	\$16.68	\$18.60	\$19.86	\$20.56
	Multi- family unit	\$10.36	\$11.09	\$12.52	\$13.96	\$14.91	\$15.43
Volume Charge per hcf (2)	0 - 8 hcf	\$1.37	\$1.46	\$1.65	\$1.84	\$1.97	\$2.04
	8 - 30 hcf	\$2.15	\$2.30	\$2.60	\$2.90	\$3.10	\$3.21
	Over 30 hcf	\$2.30	\$2.46	\$2.78	\$3.10	\$3.31	\$3.43
Commercial / Industrial / Irrigation / Municipal Rates							
Service Charge per meter	5/8 - 3/4"	\$17.83	\$19.08	\$21.54	\$24.02	\$25.65	\$26.55
	1"	\$31.68	\$33.90	\$38.27	\$42.67	\$45.57	\$47.16
	1½"	\$71.25	\$76.24	\$86.07	\$95.97	\$102.50	\$106.09
	2"	\$126.64	\$135.50	\$152.98	\$170.57	\$182.17	\$188.55
	3"	\$284.90	\$304.85	\$344.18	\$383.76	\$409.86	\$424.21
	4"	\$506.48	\$541.93	\$611.84	\$682.20	\$728.59	\$754.09
	6"	\$1,139.56	\$1,219.32	\$1,376.61	\$1,534.92	\$1,639.29	\$1,696.67
Volume Charge per hcf	0 - 30 hcf	\$1.86	\$1.99	\$2.25	\$2.51	\$2.68	\$2.77
	Over 30 hcf	\$2.18	\$2.33	\$2.63	\$2.93	\$3.13	\$3.24
Automatic Sprinkler & Private Fire Hydrant Rates							
Flat Rate per meter	2"	\$9.37	\$10.03	\$11.32	\$12.62	\$13.48	\$13.95
	4"	\$16.40	\$17.55	\$19.81	\$22.09	\$23.59	\$24.42
	6"	\$23.21	\$24.84	\$28.04	\$31.26	\$33.39	\$34.56
	8"	\$30.42	\$32.55	\$36.75	\$40.98	\$43.77	\$45.30
	10"	\$37.39	\$40.01	\$45.17	\$50.36	\$53.78	\$55.66
	12"	\$44.40	\$47.51	\$53.64	\$59.81	\$63.88	\$66.12
Fire Hydrants	Double outlet & steame	\$11.71	\$12.53	\$14.15	\$15.78	\$16.85	\$17.44
	Single outlet & wharf	\$3.52	\$3.77	\$4.26	\$4.75	\$5.07	\$5.25
Untreated Water Rates							
Minimum Charge per meter	2"	\$23.38	\$25.02	\$28.25	\$31.50	\$33.64	\$34.82
	3"	\$46.75	\$50.03	\$56.48	\$62.98	\$67.26	\$69.61
	4"	\$70.10	\$75.00	\$84.68	\$94.42	\$100.84	\$104.37
	6"	\$140.17	\$149.98	\$169.33	\$188.80	\$201.64	\$208.70
Volume Charge per hcf	0 - 150 hcf	\$0.84	\$0.90	\$1.02	\$1.14	\$1.22	\$1.26
	Over 150 hcf	by agmt	by agmt	by agmt	by agmt	by agmt	by agmt
(1) Customers are billed on a bi-monthly basis.							
(2) HCF = one hundred cubic feet = 748 gallons							
Source: City Ordinance Nos. 93-15, 95-11, 96-9, 00-13							

Figure 14. Scenario #3: Projected Revenues vs. Expenses



RATE SETTING LEGISLATION AND PRINCIPLES

Proposition 218

Proposition 218, the “Right to Vote on Taxes Act”, was approved by California voters in November 1996 and is codified as Articles XIIC and XIID of the California Constitution. Proposition 218 establishes requirements for imposing or increasing property related taxes, assessments, fees and charges. For many years, there was no legal consensus on whether water and sewer rates met the definition of “property related fees”. In July 2007, the California Supreme Court essentially confirmed that Proposition 218 applies to water rates. The prevailing legal consensus is that Proposition 218 also applies to wastewater rates.

BWA recommends the City follow the procedural requirements of Proposition 218 for all water and wastewater rate increases. These requirements include:

- **Noticing Requirement:** The City must mail a notice of proposed rate increases to all affected property owners. The notice must specify the basis of the fee, the reason for the fee, and the date/time/location of a public rate hearing at which the proposed rates will be considered/adopted.
- **Public Hearing:** The City must hold a public hearing prior to adopting the proposed rate increases. The public hearing must be held not less than 45 days after the required notices are mailed.
- **Rate Increases Subject to Majority Protest:** At the public hearing, the proposed rate increases are subject to majority protest. If more than 50% of affected property owners submit written protests against the proposed rate increases, the increases cannot be adopted.

Proposition 218 also established a number of substantive requirements that are generally deemed to apply to utility service charges, including:

- **Cost of Service** - Revenues derived from the fee or charge cannot exceed the funds required to provide the service. In essence, fees cannot exceed the “cost of service”.
- **Intended Purpose** - Revenues derived from the fee or charge can only be used for the purpose for which the fee was imposed.
- **Proportional Cost Recovery** - The amount of the fee or charge levied on any customer shall not exceed the proportional cost of service attributable to that customer.

- No fee or charge may be imposed for a service unless that service is used by, or immediately available to, the owner of the property. Standby charges shall be classified as “assessments” which are governed by Article 13D Section 4.

Charges for water, sewer, and refuse collection are exempt from the additional voting requirements of Proposition 218 provided the charges do not exceed the cost of providing service and are adopted pursuant to procedural requirements of Proposition 218.

Rate Development Principles

In reviewing the City’s current water rates and finances, BWA uses the following criteria in developing our recommendations:

1. *Revenue Sufficiency:* Rates should recover the annual cost of service and provide revenue stability.
2. *Equitable:* Rates should be fairly allocated among all customer classes based on their estimated demand characteristics. Each user class only pays its proportionate share.
3. *Practical:* Rates should be simple in form and, therefore, adaptable to changing conditions, easy to administer, and easy to understand.
4. *Provide Incentive:* Rates provide price signals which serve as indicators to use water efficiently.

The City has continued to efficiently maintain the water system while consciously reducing expenditures with salary cutbacks for City employees, lowered energy costs, and a restructured capital improvement program. Despite the City’s best efforts to control costs and to minimize impacts on customers, expenses are increasing. The proposed rate increases are intended to cover the cost of providing water service while minimizing the impact on ratepayers.

BWA Rate Recommendations

BWA finds that the senior discount violates Proposition 218 because the rates provide a lower cost of service to one specific customer class and is subsidized through higher charges to other customers. Under the provisions discussed with Proposition 218, ratepayers cannot legally bear the cost of subsidy discount rates. If the City wishes to continue the discount rates, the discount must be supplemented from another source of revenue, such as the General Fund. BWA recommends that seniors pay the same rate as single family residential customers.

BWA finds the water rates recommended in this report satisfy the substantive requirements of Proposition 218 and are based on cost of service. The water revenues are used only for water purposes — to operate, maintain, repair, replace, and improve the water system.

WATER CONNECTION FEE

Connection fees are charges to new customers to recover the capital costs for facilities that are needed to serve growth. These fees go by a variety of names, including capacity charges, facilities charges, connection charges and hook-up charges, to name a few. The City's ordinance refers to these charges as "connection fees." These charges do not include fees for the direct costs of installing service connections.

Connection fees recover costs for future projects that must be constructed to serve new connections, as well as the costs of capacity in existing facilities that will benefit and serve new customers. The fees must be reasonable and non-arbitrary, and based on facility capital costs, user loads and system capacity. A variety of methods may be used to determine the appropriate connection fee.

California Government Code Section 66013 deals with water and sewer connection fees or capacity charges. It states that such fees or charges shall not exceed the estimated reasonable cost of providing the service for which the fees or charges are imposed, unless a question regarding the amount of the fee or charge imposed in excess of the estimated reasonable cost of providing the services is submitted to the electorate and approved by two-thirds of the vote cast.

Section 66013 defines a capacity charge as a charge for facilities in existence at the time a charge is imposed or charges for new facilities to be constructed in the future that are of benefit to the new customer. To maintain consistency with the City's terminology, this report refers to these capacity charges as connection fees. However, BWA recommends the City consider amending its municipal code and change the name to "Capacity Fee". Section 66013 uses the term connection charge to signify fees for the physical facilities necessary to make a water or sewer connection, including, but not limited to, meters, meter boxes, and pipelines from the structure or project to a water distribution line or sewer main, and that does not exceed the estimated reasonable cost of labor and materials for installation of those facilities.

Current Connection Fees

The City's current water connection fees were adopted in 1997 and last reviewed for update in 1999. The current water connection fee is \$7,635 per single family dwelling unit. Connection fees for commercial and industrial customers are based on meter size. The connection fee for a nonresidential ¾" meter is currently \$4,521. Connection fees for larger meters are calculated as multiples of the ¾" meter fee based on the relative capacity of each meter in comparison to that of a ¾" meter. Fees for meters 6-inches or larger are negotiated between the City and the customer.

Costs Related to New Development

The City incurs several categories of costs in connection with providing water facilities for new connections, including:

- Costs for projects that provide capacity for new development, identified in the City's water CIP,
- Debt service on the outstanding bonds and loans,
- Cost of the existing facilities, and
- Interest on the debt used to finance water capital project.

Findings

BWA has assessed each of the above components and has determined there have been no significant changes in projects or cost categories since the City last updated the connection fees in 1999 to warrant an adjustment to the current connection fee schedule. However, the City has not updated its connection fee in accordance with the City's Municipal Code since the fees were first adopted. Municipal Code Chapter 13.12.050C states that the water connection fees shall be increased annually by the change in the Engineering News Record Construction Cost Index (ENR-CCI) for San Francisco. BWA recommends the City consider updating the water connection fee to be current with escalated construction costs. Construction costs are continuously increasing and fee updates ensure the City is able to replace aging facilities and expand facilities to serve new customers without increasing rates for current ratepayers. Table 15 shows the escalated water connection fees based on the change.

Adjusting the Connection Fee will ensure appropriate funding for established projects that add capacity; however BWA recommends the City establish a nexus for a new connection buy-in that allows the recovery of funds already spent on projects that add capacity to the system.

The City should also consider changing the terminology to "Capacity" fee because the fees it collects as Connection Fees are not for the purposes of building the physical water connection, but rather are for a new connection to pay a one-time charge to buy into the system's capacity.

Table 15. Water Connection Fee: ENR-CCI Updated Calculation

Escalation Calculation			
<u>Year</u>	<u>December ENR-CCI</u>		
2011	10,204.79		
1999	6,816.70		
Escalation Ratio	1.497		
Water Connection Fee			
Residential	Current	Proposed Escalated	
Single Family Dwelling	\$7,635	\$11,400	
Multiple-Family Dwelling per unit	\$7,635	\$11,400	
Mobile Home per space	\$7,635	\$11,400	
Accessory Dwelling	\$3,818	\$5,700	
Commercial and Industrial			
5/8 - 3/4"	\$4,521	\$6,800	
1"	\$8,047	\$12,000	
1½"	\$18,084	\$27,100	
2"	\$32,144	\$48,100	
3"	\$72,336	\$108,300	
4"	\$128,577	\$192,500	
6"	subject to negotiation*	subject to negotiation*	
* Agreement to be approved by City Council			

CONCLUSION

Recommended Scenario: Water Rate Scenario #3

Going forward, the City’s water enterprise is facing a number of financial challenges that will require the City to raise its water rates over the next five years. Despite the City’s best efforts to control costs, operating expenses are increasing and capital projects are needed to update the water system to ensure the community’s health, safety, and the City’s financial integrity. To restore financial stability to the water enterprise, BWA recommends the City implement Scenario 3 which gradually phases in rate increases to meet all objectives while minimizing the impacts on ratepayers. The proposed rate increases for single family residential customers are shown on the following table. The full proposed rate schedule is shown on Table 13.

		Proposed Rate Increases for Single Family Residential Customers					
		Current 2011/12	2012/13	2013/14	Proposed		
		2014/15	2015/16	2016/17			
Average SFR Monthly Charge - 12 hcf/month		\$33.33	\$35.65	\$40.28	\$44.92	\$48.02	\$49.72
<i>\$ Increase</i>			\$2.32	\$4.63	\$4.64	\$3.10	\$1.70
Single Family Residential Rates							
Service Charge per meter	Single family	\$13.80	\$14.77	\$16.68	\$18.60	\$19.86	\$20.56
Volume Charge per hcf (2)	0 - 8 hcf	\$1.37	\$1.46	\$1.65	\$1.84	\$1.97	\$2.04
	8 - 30 hcf	\$2.15	\$2.30	\$2.60	\$2.90	\$3.10	\$3.21
	Over 30 hcf	\$2.30	\$2.46	\$2.78	\$3.10	\$3.31	\$3.43

The key drivers of future rate increases are summarized as follows.

Operating Deficit

With no rate increases since 2006, expenses have continued to increase annually. For the last three years, water expenses have exceeded revenues, resulting in an operating deficit. To cover the deficit, the City has relied on its reserves which are slowly being drawn down. Rate increases are needed to meet annual revenue requirements and to maintain a healthy level of reserves.

Capital Improvements/Aging Infrastructure

The City’s water system infrastructure includes many aging pipelines and other facilities that are reaching the end of their useful lives. A Water System Master Plan identifies approximately \$16.5 million (current \$) of water system capital needs through 2032. Approximately \$9.0 million (current \$) of these improvements are required to rehabilitate and replace aging infrastructure at the water treatment plant. The remaining \$7.5 million (current \$) of improvements are needed to update the distribution system. Rate increases are needed so that the

City can maintain infrastructure and continue to provide high-quality and reliable water service in future years.

Debt Covenants and Credit Rating

As discussed in the previous section, the water utility's credit rating has recently been downgraded because the City did not meet its debt service coverage requirements. Without rate increases, it is likely that the water utility will be further downgraded which could hinder the City's ability to issue debt if needed in the future. Rate increases are needed to ensure that the City is in compliance with debt covenants and to prevent further credit downgrades.

Other advantages the Enterprise would gain from these recommended increases are:

- The water enterprise would meet its mandated operating reserve target of 20% of revenues each year starting in fiscal year 2016/17;
- The water enterprise would be able to fund the projects outlined in its CIP without further borrowing;
- The water enterprise would continue to meet all debt service requirements;
- The water enterprise would be in a better financial position when Standard & Poor reevaluates its credit rating;
- The water enterprise would be able to fund its reserve funds at appropriate funding levels beginning in 2013/14:
 - Fund 592 (Equipment/Vehicle Replacement) \$70,000
 - Fund 593 (Filter Replacement) \$80,000
 - Fund 594 (System Replacement) \$240,000
 - Fund 596 (Major System Replacement) \$50,000

Eliminate Discounted Rate for Seniors Residents

Pursuant to Proposition 218 BWA recommends the City eliminate discounted rate for seniors and mobile home customers. The City may opt to continue a discount program for seniors based on age or could implement a discount based on low income needs; however any discount must be subsidized with another revenue source unrelated to water rates.

Other Recommendations

BWA recommends the first rate increase be implemented on January 1, 2013, the second proposed increase on July 1, 2013 and all other increases on the first day of each fiscal year (July 1).

Adhere by following this schedule of increases, the projections show that future increases after 2016/17 would be limited to annual cost of living increases each year (about 2.0%). However, BWA recommends that the City conduct another water rate study in five years to update operating and capital costs and to ensure that the water enterprise is meeting all its objectives.

In addition to the rate adjustments, BWA makes the additional recommendations:

- Redefine the Connection Fees as “Capacity Fees” to align name with the purpose of the charge;
- Act to establish a nexus for new connections to buy-into existing capacity;
- Adjusting the capacity fees for new water connections using ENR-CCI as permitted in the Municipal Code;

BWA takes as the basic rate design standard to be cost of service. BWA concludes the propose water rates are based on cost of service, follow generally accepted rate design criteria and adheres to the substantive requirements of Proposition 218. BWA believes it has designed rates that are fair to the City’s water customers and reflect the use and benefit of the water enterprise.

APPENDIX A: BUDGET DETAIL

Water Treatment Operations

Acct	Fund 090 Division 8205	Actual 2008-09	Actual 2009-10	Actual 2010-11	Amended 2011-12	Budget 2012-13
Revenues						
7411	Investment Earnings	233,930	74,655	22,360	75,000	80,000
7455	Rents & Concessions	148,020	149,125	3,025	3,000	3,000
7651	Residential Accounts	3,210,370	2,964,515	2,942,045	3,200,000	3,412,500
7653	Multi-Family Accounts	623,975	615,270	627,150	610,000	651,000
7654	Mobile Home Accounts	32,165	33,455	32,115	32,000	33,600
7657	Commercial Accounts	1,146,655	1,002,305	1,052,900	1,100,000	1,155,000
7658	Industrial Accounts	147,440	132,910	128,595	140,000	147,000
7660	Metered Municipal Sales	371,935	333,975	365,210	360,000	378,000
7664	Public Fire Protection	29,080	20,685	66,640	50,000	52,500
7665	Construction Hydrant Water	28,240	14,630	12,040	15,000	15,750
7666	Private Hydrants	4,540	4,445	4,545	4,500	4,725
7668	Valero Untreated Water	829,225	1,018,620	947,845	1,000,000	1,000,000
7670	Other Untreated Water	3,850	3,295	3,560	3,900	4,095
7678	Meter Sets	2,105	5,065	1,650	2,100	2,205
7689	Penalties	65,940	60,850	57,550	65,000	68,250
7698	Misc Service Charges	1,230	0	13,280	0	0
7710	Refund & Rebates	17,670	1,280	9,490	2,500	2,500
7910	Sale of Real/Personal Property	4,095	0	2,555	0	0
Revenue Total		\$ 6,900,465	6,435,080	6,292,555	6,663,000	7,010,125
Expenses						
8001	Regular Full Time Staff	1,082,475	1,093,725	1,045,925	1,195,250	1,256,175
8003	Temporary Part Time Staff	6,825	915	1,395	6,635	1,155
8004	Leave Allowance	29,865	44,950	9,200	18,395	19,770
8008	Overtime	57,640	52,495	60,700	60,000	60,000
8011	Shift Differential	8,115	7,150	7,320	7,040	7,040
8013	Acting Supervisor	405	1,510	1,980	900	900
8017	Call Back	1,075	2,545	825	2,500	2,500
8020	Standby	0	65	0	1,000	1,000
8025	Longevity	17,035	14,035	12,340	11,060	12,955
8026	Vacation Leave Reserve	5,125	11,220	9,435	10,000	10,000
Salary & Wages Total		\$ 1,210,735	1,228,610	1,149,120	1,312,780	1,371,495
8060	Health and Welfare		216,310	215,625	269,855	251,235
8078	Deferred Compensation	12,795	12,260	10,805	4,205	3,370
8080	PERS Retirement	244,780	247,990	247,270	241,660	306,395
8082	Uniform Allowance	2,100	1,615	1,600	1,800	2,000
8085	PARS	90	10	5	20	20
8086	FICA/Medicare	16,315	16,745	16,920	19,100	19,940
Benefits Total		\$ 506,225	494,930	492,225	536,640	582,960

Water Treatment Operations

Acct	Fund 090 Division 8205	Actual 2008-09	Actual 2009-10	Actual 2010-11	Amended 2011-12	Budget 2012-13
8100	Contract Services	42,765	40,330	51,540	79,950	92,400
8105	Uniform Contract	9,940	10,640	7,950	9,860	9,835
8106	Prof & Tech Services	14,425	55,325	49,445	158,860	133,150
8113	Education & Training	6,330	4,910	7,855	10,130	10,355
8114	Travel & Meals	3,980	3,640	1,600	5,700	4,800
8116	Memberships & Certifications	2,530	3,490	4,905	8,100	8,100
8117	Publications & Subscriptions	480	440	760	660	660
8122	Office Supplies	4,525	4,000	4,225	3,650	3,650
8124	Operations Supplies	8,385	9,005	9,460	10,000	10,000
8126	Safety Supplies	3,075	3,390	6,475	3,500	4,000
8134	Maintenance & Repairs	15,365	13,100	15,660	16,000	16,000
8152	Telephone & Cellphones	13,810	7,640	8,220	5,710	5,710
8155	Communication System	2,955	3,585	2,910	3,715	3,715
8170	Weed Abatement	17,285	15,500	23,000	14,500	15,000
8260	Attorney Fees	46,200	0	0	0	0
8538	Maintenance & Repair V & E	3,685	17,145	3,170	3,950	3,950
8725	Vehicle & Equipment Fuel	5,795	4,220	2,430	4,225	4,310
8750	Commercial Lab Testing	28,400	20,805	17,785	29,600	28,600
8751	Materials Disposal	46,030	32,695	45,995	38,150	44,150
8754	Instrument Calibration	11,305	9,970	7,995	9,150	10,950
8766	Maintenance Supplies	660	785	1,315	800	800
8770	Lab Supplies	30,500	25,100	22,745	30,000	32,000
8772	Chemicals	415,000	359,130	273,085	357,755	358,000
8777	Spare Parts	0	0	0	11,000	11,000
8779	Small Tools & Equipment	3,275	3,035	3,175	3,000	3,000
8792	Fittings & Hardware	5,630	6,115	6,355	0	0
8794	Pump Station Maintenance	11,145	12,985	7,965	13,000	14,000
8809	Street Repairs	0	0	0	60,000	0
8811	Plant Repairs & Maint.	35,230	33,410	41,080	29,000	29,000
8812	Emergency Repairs	22,870	10,305	1,305	18,000	18,000
8822	Water Conservation	26,110	49,225	86,235	36,000	36,000
8826	Plant Electricity	104,180	105,105	122,730	107,200	110,000
8828	P-2 Electricity	91,490	74,135	98,870	96,800	99,700
8829	P-1 Electricity	58,015	52,935	59,725	51,500	53,000
8830	Cordelia PS Elec	48,775	136,165	127,790	125,000	125,000
8831	Lake Herman PS Elec	8,220	2,595	1,270	3,000	3,100
8834	P-3 Electricity	154,515	135,785	122,625	118,800	122,300
8839	Water Purchases	707,635	676,415	501,460	653,100	655,100
8840	Regulatory Fees	17,085	75,545	30,245	38,405	38,625
8841	Property Taxes	2,300	2,375	2,380	2,435	2,490
8854	Cathodic Protection	1,350	1,355	1,445	2,000	2,000
	Services & Supplies Total	\$ 2,231,250	2,022,330	1,783,180	2,172,205	2,122,450
9000	Bond-Interest	286,290	265,795	241,560	218,475	193,640
9002 B	Bond-Principal	665,000	685,000	700,000	730,000	750,000
9020	SDWSRF Loan-Interest	266,145	254,745	243,065	231,115	218,865
9021	SDWSRF Loan-Principal	474,250	485,650	497,330	509,285	521,530

Water Treatment Operations

Acct	Fund 090 Division 8205	Actual 2008-09	Actual 2009-10	Actual 2010-11	Amended 2011-12	Budget 2012-13
9098	Bond Issue Costs	54,440	0	43,200	0	0
9099	Bond Discount	4,145	0	2,990	0	0
	Debt Service Total	\$ 1,750,270	1,691,190	1,728,145	1,688,875	1,684,035
9114	Durable Tools & Equip	12,795	1,840	17,095	13,265	14,100
9116	Office Furniture	1,240	1,180	400	1,625	1,625
9117	Office Equipment	3,290	7,010	4,260	5,150	4,000
9184 B	Upgrade Computer System	625	35,135	4,810	49,015	20,000
9198 B	Facility Upgrades	25,215	44,610	810	302,425	127,000
9842 B	Solano Water Auth Project	0	3,880	0	1,790	0
9849 B	Cross Connect Control Program	5,085	3,155	2,680	3,500	3,500
9852 B	Reservoir Maintenance	9,500	3,450	25,030	6,000	12,000
9854 B	Cathodic Protection RW Trans Lines	19,965	1,515	0	0	0
9862 B	RW Pipeline Survey	0	0	0	4,000	9,000
9608	Miscellaneous Improvements	28,245	23,920	0		25,000
9999	Interfund Transfers- General Fund	48,250	48,250	48,250	55,735	56,295
9999	Interfund Transfers-Filter Replace	40,000	75,000	75,000	0	80,000
9999	Interfund Transfers-Equip Replace	70,000	70,000	70,000	80,000	70,000
9999	Interfund Transfers- System Replace	200,000	150,000	50,000	70,000	180,000
9999	Interfund Transfers- Water Supply	212,625	0	0	180,000	0
9998	Equity transfer - Replacement Funds	0	0		0	0
	Capital Outlay Total	\$ 687,135	468,945	298,335	772,505	602,520
8995	Workers' Comp ISF	14,485	14,400	22,030	30,050	31,440
8993	Administrative Services ISF	313,690	473,225	659,555	442,785	444,715
8996	Equipment Services ISF	3,035	16,940	15,500	14,570	14,910
	Internsal Service Charge Total	331,210	504,565	697,085	487,405	491,065
	Expense Total	\$ 6,716,825	6,410,570	6,148,090	6,970,410	6,854,525

Water Field Operations

Acct	Fund 090 Division 8215	Actual 2008-09	Actual 2009-10	Actual 2010-11	Amended 2011-12	Budget 2012-13
Revenues						
7710	Refund & Rebates	460	17,695	(705)	0	0
	Revenue Total	\$ 460	17,695	(705)	0	0
Expenses						
8001	Regular Full Time Staff	412,095	414,900	422,940	419,760	428,040
8003	Temporary Part Time Staff	3,500	0	12,195	12,000	12,000
8004	Leave Allowance	5,720	5,815	1,780	3,150	4,295
8008	Overtime	21,035	14,545	13,380	15,300	15,300
8011	Shift Differential	0	0	0	0	0
8013	Acting Supervisor	85	0	210	440	440
8017	Call Back	35,075	42,405	21,930	24,500	24,500
8020	Standby	24,080	23,780	20,745	23,375	23,375
8025	Longevity	6,115	6,090	7,135	9,190	11,935
	Salary & Wages Total	\$ 507,705	507,535	500,315	507,715	519,885
8060	Health and Welfare		101,440	108,585	113,245	85,610
8078	Deferred Compensation	2,795	2,880	2,845	520	520
8080	PERS Retirement	91,480	93,545	99,490	84,300	104,960
8082	Uniform Allowance	885	745	905	720	720
8085	PARS	0	0	110	160	160
8086	FICA/Medicare	6,140	6,065	6,165	7,370	7,550
	Benefits Total	\$ 200,360	204,675	218,100	206,315	199,520
8100	Contract Services	9,545	4,335	4,860	9,850	10,005
8105	Uniform Contract	6,110	3,805	4,685	5,900	5,840
8106	Prof & Tech Services	380	550	0	1,000	1,000
8113	Education & Training	4,680	6,185	2,765	9,130	9,665
8114	Travel & Meals	4,400	3,060	1,570	2,100	2,100
8116	Memberships & Certifications	2,900	2,045	1,000	3,075	2,575
8117	Publications & Subscriptions	335	270	0	1,825	1,825
8122	Office Supplies	720	1,975	605	875	875
8124	Operations Supplies	485	250	550	925	925
8126	Safety Supplies	4,660	4,175	3,250	4,920	4,920
8134	Maintenance & Repairs	95	285	855	1,500	1,500
8155	Communication System	1,560	1,890	2,805	2,600	2,600
8537	Maint/Repair Hydrants		0	805	2,000	2,000
8538	Maintenance & Repair V & E	16,905	12,310	13,065	6,200	6,200
8725	Vehicle & Equipment Fuel	15,875	17,780	17,955	13,895	14,175
8751	Materials Disposal	9,020	1,995	1,755	4,860	7,500
8766	Maintenance Supplies	17,210	7,070	7,865	8,500	8,500
8777	Spare Parts	0	0	0	40,700	40,700
8779	Small Tools & Equipment	865	2,515	4,185	1,200	1,500
8782	Meters	2,380	11,350	16,135	21,000	21,000
8792	Fittings & Hardware	25,055	10,840	29,850	0	0

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Water Field Operations

Acct	Fund 090 Division 8215	Actual 2008-09	Actual 2009-10	Actual 2010-11	Amended 2011-12	Budget 2012-13
8809	Street Repairs	27,130	37,845	32,185	55,000	55,000
8812	Emergency Repairs	0	11,590	25,995	12,640	10,000
	Services & Supplies Total	\$ 150,310	142,120	172,740	209,695	210,405
9114	Durable Tools & Equip	14,500	5,560	31,885	9,255	1,200
9116	Office Furniture	70	0	0	0	0
9117	Office Equipment	0	545	1,205	1,000	1,270
9705	Corp Yard Improvements	2,630	510	190	2,445	0
9851 B	Water Line Replacement	318,305	16,775	35,725	399,530	0
9856 B	Service Line Replcmnt Project	65,220	86,855	73,000	77,000	75,000
	Capital Outlay Total	\$ 400,725	110,245	142,005	489,230	77,470
8995	Workers' Comp ISF	6,495	6,405	8,245	10,790	11,010
8997	Equipment Replacement				0	0
8996	Equipment Services ISF	67,000	43,565	39,860	37,460	38,335
	Internal Service Charges Total	\$ 73,495	49,970	48,105	48,250	49,345
	Expense Total	\$ 1,332,595	1,014,545	1,081,265	1,461,205	1,056,625
	Net Contribution / (Use)	\$ (1,332,135)	(996,850)	(1,081,970)	(1,461,205)	(1,056,625)

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Lake Herman Cottage

Acct	Fund 090 Division 8225	Actual 2008-09	Actual 2009-10	Actual 2010-11	Amended 2011-12	Budget 2012-13
Expenses						
8815	Lake Herman Cottage Repairs	0	30	500	500	500
8833	Lake Herman Dam/Cottage Utilities	5,345	5,390	4,240	5,200	5,370
	Services & Supplies Total	\$ 5,345	5,420	4,740	5,700	5,870
	Expense Total	\$ 5,345	5,420	4,740	5,700	5,870
	Net Contribution / (Use)	\$ (5,345)	(5,420)	(4,740)	(5,700)	(5,870)

APPENDIX B: CAPITAL IMPROVEMENT SCHEDULE

Water Supply Master Plan Capital Improvement Plan										
Project Descriptions	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-32	Total
WATER OPERATIONS (FUND 090)										
Water Treatment Plant										
1 WTP PLC Replacement	200,000	0	0	0	0	0	0	0	0	200,000
2 Chemical Feed Controller	0	690,000	0	0	0	0	0	0	0	690,000
3 Chemical Tank Farm Improvements	0	0	250,000	600,000	0	0	0	0	0	850,000
4 Magnetic Ion Exchange System (6 mgd)	0	0	0	0	800,000	2,710,000	0	0	0	3,510,000
5 Conversion from Chlorine Gas to Sodium Hypochlorite	0	0	300,000	0	0	0	0	0	0	300,000
6 Conversion to Polyorthophosphate	0	0	0	0	0	0	150,000	0	0	150,000
7 Sludge Lagoon Re-Lining	0	0	0	0	0	0	0	0	1,600,000	1,600,000
8 Replace Backwash Tank 1	0	0	0	0	0	0	0	0	425,000	425,000
9 <u>Recoating of Chlorine Contact Tank (interior & exterior)</u>	0	0	0	0	0	0	0	0	300,000	300,000
Subtotal Water Treatment Plant Projects	200,000	690,000	550,000	600,000	800,000	2,710,000	150,000	0	2,325,000	8,025,000
Water Distribution System										
1 8-inch Ductile Iron Pipe (DIP)* in Jefferson St	0	110,000	0	0	0	0	0	0	0	110,000
2 Lower Arsenal	504,000	0	0	0	0	0	0	0	0	504,000
3 New 12-inch DIP in Adams St	0	39,500	0	0	0	0	0	0	0	39,500
4 New 24-inch DIP in Park Road for Zone I	0	0	0	0	357,000	0	0	0	0	357,000
5 New 12-inch DIP in Military West	0	0	330,500	0	0	0	0	0	0	330,500
6 New 12-inch DIP to serve Pressure Zone 3-A	0	0	0	95,000	0	0	0	0	0	95,000
7 New 8-inch DIP to loop Drolette Wy with Corrigan Ct	0	0	0	17,000	0	0	0	0	0	17,000
8 RWTP CP Improvements	200,000	200,000	0	0	0	0	0	0	0	400,000
9 36 RWTL Improvements	200,000	0	0	0	0	0	0	0	0	200,000
10 Benicia-Vallejo Intertie	0	0	0	0	0	0	0	0	3,500,000	3,500,000
11 P2 Pump Station MCC Replacement	0	0	0	300,000	0	0	0	0	0	300,000
12 Recoating of R-2 Reservoir (interior & exterior)	0	0	0	0	0	0	0	0	300,000	300,000
13 Recoating of R-1 Reservoir (interior & exterior)	0	0	0	0	0	0	0	0	300,000	300,000
14 <u>New 36" Transmisison Main (WTP to East 2nd St)</u>	0	0	0	0	726,000	0	0	0	300,000	1,026,000
Subtotal Water Distribution System Projects	904,000	349,500	330,500	412,000	1,083,000	0	0	0	4,400,000	7,479,000
Total Water Operations CIP	1,104,000	1,039,500	880,500	1,012,000	1,883,000	2,710,000	150,000	0	6,725,000	15,504,000
WATER CONNECTION (FUND 045)										
1 New 12-inch DIP in Adams Street	0	39,500	0	0	0	0	0	0	0	39,500
2 New 12-inch DIP in Military West	0	0	330,500	0	0	0	0	0	0	330,500
3 New 12-inch DIP to serve Pressure Zone 3-A	0	0	0	95,000	0	0	0	0	0	95,000
4 <u>New 8-inch DIP to loop Drolette Way with Corrigan Ct</u>	0	0	0	17,000	0	0	0	0	0	17,000
Total Water Connection CIP	0	39,500	330,500	112,000	0	0	0	0	0	482,000
TOTAL WATER OPERATIONS & CONNECTION CIP	1,104,000	1,079,000	1,211,000	1,124,000	1,883,000	2,710,000	150,000	0	6,725,000	15,986,000
Source: Tables 8-1, 8-2, & 8-4 10-Year Capital Improvement Program from Draft Water CIP Updated 7/31/12. Costs include 20% contingency and 20% administrative factor.										
* DIP = Ductile Iron Pipe										

APPENDIX C: VEHICLE REPLACEMENT SCHEDULE

Required Vehicle Purchases							
Year	1	2	3	4			
Project Descriptions	2011-12	2012-13	2013-14	2014-15	2015-16	2016-31	Total
Water Treatment Plant Vehicles							
Maint. Trk 4WD 1.5 Ton Dsl. w/crane	\$0	\$0	\$0	\$45,000	\$0	\$0	\$45,000
Forklift 4 ton	0	0	0	0	0	25,000	25,000
Boat	0	0	0	0	0	2,000	2,000
Truck	0	0	0	16,000	0	0	16,000
Boat Trailer	0	0	0	0	0	500	500
Utility trailer	0	0	0	0	0	1,500	1,500
Escape 4WD	0	0	0	0	0	26,600	26,600
Electric Industrial Cart	0	0	0	0	0	10,350	10,350
Pickup Truck	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>20,000</u>	<u>20,000</u>
Total Water Treatment Plant Vehicles	0	0	0	61,000	0	85,950	146,950
Water Field Vehicles							
Truck (Maintenance Supervisor) [25%]	\$0			\$4,750		\$0	\$4,750
Dump Truck [50%]	0	42,500				0	42,500
Dechlorination Trailer	0				20,000	0	20,000
Backhoe [50%]						42,500	42,500
Light Tower	0	20,000				0	20,000
Truck (has an air compressor)	0			62,300		0	62,300
Concrete Trailer [33%]	0					5,000	5,000
Backhoe [35%]	0					39,200	39,200
Super Duty Truck	0			24,100		0	24,100
Dump Truck [50%]	0					47,840	47,840
Pickup Truck	0	0	0	0	0	20,000	20,000
Bobcat/Skip Loader [25%]	0	0	0	0	0	12,500	12,500
Trencher (a tractor) [25%]	0	0	0	3,000	0	0	3,000
Truck with engine-mounted air compressor	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>57,250</u>	<u>57,250</u>
Total Water Field Vehicles	0	62,500	0	94,150	20,000	224,290	400,940
Total Program Needs	\$ -	\$ 62,500	\$ -	\$ 155,150	\$ 20,000	\$ 310,240	\$ 547,890
Total Vehicle Purchases 5-Years					\$ 237,650		
Average Annual Vehicle Purchase 5-Years					\$ 47,500		
Average Annual Vehicle Depreciation					\$ 54,800		

APPENDIX D: DEBT SERVICE SCHEDULE

Existing Debt Service														
Debt Service	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
2002 Refinancing Bond-Interest	286,290	265,795	241,560	217,905	\$193,640	\$158,405	\$127,190	\$93,456	\$57,541	\$19,580	\$0	\$0	\$0	\$0
2002 Refinancing Bond-Principal	723,585	685,000	746,190	730,000	750,000	784,345	814,345	849,345	869,345	890,000	0	0	0	0
2004 SRF Loan-Interest	266,145	254,745	243,065	231,110	218,865	212,632	199,942	186,950	173,643	160,017	146,063	131,774	117,141	102,156
<u>2004 SRF Loan-Principal</u>	<u>474,250</u>	<u>485,650</u>	<u>497,330</u>	<u>509,285</u>	<u>521,530</u>	<u>527,760</u>	<u>540,449</u>	<u>553,443</u>	<u>566,750</u>	<u>580,376</u>	<u>594,330</u>	<u>608,619</u>	<u>623,252</u>	<u>638,237</u>
Total Debt Service	1,750,270	1,691,190	1,728,145	1,688,300	1,684,035	1,683,143	1,681,926	1,683,194	1,667,279	1,649,973	740,393	740,393	740,393	740,393

APPENDIX E: EXPENSE DETAIL

Expense Detail											
Budget Item	Budget	Escalation	Projected								
	2012/13	Factor	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Salaries & Benefits											
Salaries & Wages	\$1,891,380	1%	\$1,910,000	\$1,929,000	\$1,948,000	\$1,967,000	\$1,987,000	\$2,007,000	\$2,027,000	\$2,047,000	\$2,067,000
Benefits	782,480	4%	814,000	847,000	881,000	916,000	953,000	991,000	1,031,000	1,072,000	1,115,000
Total Salaries & Benefits	2,673,860		2,724,000	\$2,776,000	\$2,829,000	\$2,883,000	\$2,940,000	\$2,998,000	\$3,058,000	\$3,119,000	\$3,182,000
<i>Percent Change</i>			1.9%	1.9%	1.9%	1.9%	2.0%	2.0%	2.0%	2.0%	2.0%
Services & Supplies											
Chemicals	358,000	4%	372,000	387,000	402,000	418,000	435,000	452,000	470,000	489,000	509,000
Electricity	385,000	0%	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000
Electricity (Cordelia & Lake Herman)	128,100	6%	136,000	144,000	153,000	162,000	172,000	182,000	193,000	205,000	217,000
Water Purchases	655,100	5%	688,000	722,000	758,000	796,000	836,000	878,000	922,000	968,000	1,016,000
Lake Herman Repairs & Utilities	5,870	3%	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
<u>Other Services & Supplies</u>	<u>806,655</u>	<u>3%</u>	<u>831,000</u>	<u>856,000</u>	<u>882,000</u>	<u>908,000</u>	<u>935,000</u>	<u>963,000</u>	<u>992,000</u>	<u>1,022,000</u>	<u>1,053,000</u>
Total Services & Supplies	2,338,725		2,418,000	2,500,000	2,586,000	2,675,000	2,769,000	2,866,000	2,968,000	3,075,000	3,186,000
<i>Percent Change</i>			3.4%	3.4%	3.4%	3.4%	3.5%	3.5%	3.6%	3.6%	3.6%
Debt Service											
2002 Refinancing Bond-Interest	193,640	varies	158,405	127,190	93,456	57,541	19,580	0	0	0	0
2002 Refinancing Bond-Principal	750,000	varies	784,345	814,345	849,345	869,345	890,000	0	0	0	0
2004 SRF Loan-Interest	218,865	varies	212,632	199,942	186,950	173,643	160,017	146,063	131,774	117,141	102,156
<u>2004 SRF Loan-Principal</u>	<u>521,530</u>	<u>varies</u>	<u>527,760</u>	<u>540,449</u>	<u>553,443</u>	<u>566,750</u>	<u>580,376</u>	<u>594,330</u>	<u>608,619</u>	<u>623,252</u>	<u>638,237</u>
Total Debt Service	1,684,035		1,683,143	1,681,926	1,683,194	1,667,279	1,649,973	740,393	740,393	740,393	740,393
<i>Percent Change</i>			-0.1%	-0.1%	0.1%	-0.9%	-1.0%	-55.1%	0.0%	0.0%	0.0%
Capital Outlay											
Durable Tools & Equip	15,300	3%	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000	16,000
Office Furniture	1,625	3%	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Office Equipment	5,270	3%	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000
<u>Other Capital Outlay</u>	<u>271,500</u>	<u>3%</u>	<u>280,000</u>	<u>288,000</u>	<u>297,000</u>	<u>306,000</u>	<u>315,000</u>	<u>324,000</u>	<u>334,000</u>	<u>344,000</u>	<u>354,000</u>
Total Capital Outlay	293,695		303,000	311,000	320,000	329,000	338,000	347,000	357,000	367,000	377,000
<i>Percent Change</i>			3.2%	2.6%	2.9%	2.8%	2.7%	2.7%	2.9%	2.8%	2.7%
Interfund Transfers											
General Fund	56,295	3%	58,000	60,000	62,000	64,000	66,000	68,000	70,000	72,000	74,000
Equip/Veh Replace (Fund 592)	80,000	0%	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000
Filter Replace (Fund 593)	70,000	0%	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
System Replace (Fund 594)	180,000	20%	216,000	259,000	311,000	373,000	448,000	538,000	646,000	775,000	930,000
<u>Major Capital (Fund 596)</u>	<u>0</u>	<u>20%</u>	<u>50,000</u>	<u>60,000</u>	<u>72,000</u>	<u>86,000</u>	<u>103,000</u>	<u>124,000</u>	<u>149,000</u>	<u>179,000</u>	<u>215,000</u>
Total Interfund Transfers	386,295		474,000	529,000	595,000	673,000	767,000	880,000	1,015,000	1,176,000	1,369,000
<i>Percent Change</i>			22.7%	11.6%	12.5%	13.1%	14.0%	14.7%	15.3%	15.9%	16.4%
Internal Service Charges											
Workers' Comp ISF	42,450	3%	44,000	45,000	46,000	47,000	48,000	49,000	50,000	52,000	54,000
Administrative Services ISF	444,715	3%	458,000	472,000	486,000	501,000	516,000	531,000	547,000	563,000	580,000
<u>Equipment Services ISF</u>	<u>53,245</u>	<u>3%</u>	<u>55,000</u>	<u>57,000</u>	<u>59,000</u>	<u>61,000</u>	<u>63,000</u>	<u>65,000</u>	<u>67,000</u>	<u>69,000</u>	<u>71,000</u>
Total Internal Service Charges	540,410		557,000	574,000	591,000	609,000	627,000	645,000	664,000	684,000	705,000
<i>Percent Change</i>			3.1%	3.1%	3.0%	3.0%	3.0%	2.9%	2.9%	3.0%	3.1%
Total Expenses	7,917,020		8,159,143	8,371,926	8,604,194	8,836,279	9,090,973	8,476,393	8,802,393	9,161,393	9,559,393
<i>Percent Change</i>			3.1%	2.6%	2.8%	2.7%	2.9%	-6.8%	3.8%	4.1%	4.3%

Source: Water Rev Exp Actuals 11 12 as of 8.3.12

APPENDIX F: RECOMMENDED RATE SCENARIO CASH FLOW

Scenario #3 Cash Flow Projection											
	Budget 2011/12	Prop. 218 Rates					Extended Projection				
		2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Assumptions:											
Water Sales Rate Adjustment (1)		7.0%	12.9%	11.5%	6.8%	3.5%	4.0%	2.0%	0.0%	0.0%	0.0%
Interest Earnings Rate		1.0%	1.0%	1.0%	1.0%	1.0%	1.5%	1.5%	1.5%	1.5%	1.5%
Other Revenues (2)		3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Growth		0.0%	0.0%	0.5%	0.5%	1.0%	1.0%	1.0%	1.5%	1.5%	1.5%
Average Monthly SFR Water Bill (12 hcf)	\$33.33	\$35.65	\$40.28	\$44.92	\$48.02	\$49.72	\$51.70	\$52.73	\$52.73	\$52.73	\$52.73
Beginning Operating Fund Balance	\$4,204,682	\$2,430,367	\$1,801,000	\$1,094,597	\$1,159,647	\$1,775,078	\$2,463,439	\$2,512,646	\$2,662,972	\$4,599,856	\$6,225,740
REVENUES											
Water Sales Revenues	5,517,500	5,903,750	6,667,400	7,469,411	7,976,685	8,297,554	8,629,491	8,798,716	8,842,274	8,842,274	8,842,274
Additional Senior Revenue	0	230,000	519,340	579,064	618,440	640,086	665,689	679,003	679,003	679,003	679,003
Water Sales - Valero (2)	1,000,000	1,000,000	1,010,000	1,020,000	1,030,000	1,040,000	1,056,000	1,072,000	1,088,000	1,104,000	1,121,000
Other Revenue	70,500	73,750	76,000	78,000	80,000	82,000	84,000	87,000	90,000	93,000	96,000
Interest Income	75,000	80,000	18,000	11,000	12,000	18,000	37,000	38,000	40,000	69,000	93,000
Total Revenues	6,663,000	7,287,500	8,290,740	9,157,475	9,717,125	10,077,640	10,472,180	10,674,719	10,739,277	10,787,277	10,831,277
EXPENSES											
Operating Expenses											
Salaries & Benefits	2,563,450	2,673,860	2,724,000	2,776,000	2,829,000	2,883,000	2,940,000	2,998,000	3,058,000	3,119,000	3,182,000
Chemicals	357,755	358,000	372,000	387,000	402,000	418,000	435,000	452,000	470,000	489,000	509,000
Electricity	374,300	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000
Electricity (Cordelia & Lake Herman)	128,000	128,100	136,000	144,000	153,000	162,000	172,000	182,000	193,000	205,000	217,000
Water Purchases	653,100	655,100	688,000	722,000	758,000	796,000	836,000	878,000	922,000	968,000	1,016,000
Lake Herman Repairs & Utilities	5,700	5,870	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Other Services & Supplies	868,745	806,655	831,000	856,000	882,000	908,000	935,000	963,000	992,000	1,022,000	1,053,000
Subtotal Operating Expenses	4,951,050	5,012,585	5,142,000	5,276,000	5,415,000	5,558,000	5,709,000	5,864,000	6,026,000	6,194,000	6,368,000
Debt Service											
2002 Refunding Bond Debt Service	948,475	943,640	942,750	941,535	942,801	926,886	909,580	0	0	0	0
2004 SRF Loan Debt Service	740,400	740,395	740,393	740,391	740,393	740,393	740,393	740,393	740,393	740,393	740,393
Subtotal Debt Service	1,688,875	1,684,035	1,683,143	1,681,926	1,683,194	1,667,279	1,649,973	740,393	740,393	740,393	740,393
Capital Expenses											
Capital Outlay	876,000	293,695	303,000	311,000	320,000	329,000	338,000	347,000	357,000	367,000	377,000
Interfund Transfers											
General Fund	55,735	56,295	58,000	60,000	62,000	64,000	66,000	68,000	70,000	72,000	74,000
Equip/Vehicle Replace (Fund 592)	70,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000
Filter Replace (Fund 593)	80,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
System Replace (Fund 594)	180,000	180,000	216,000	259,000	311,000	373,000	448,000	538,000	646,000	775,000	930,000
Major Capital (Fund 596)	0	0	50,000	60,000	72,000	86,000	103,000	124,000	149,000	179,000	215,000
Subtotal Interfund Transfers	385,735	386,295	474,000	529,000	595,000	673,000	767,000	880,000	1,015,000	1,176,000	1,369,000
Internal Service Charges	535,655	540,410	557,000	574,000	591,000	609,000	627,000	645,000	664,000	684,000	705,000
Capital Improvement Projects (3)	0	0	838,000	720,500	497,500	553,000	1,332,000	2,048,000	0	0	0
Subtotal Non-Operating Expenses	1,797,390	1,220,400	2,172,000	2,134,500	2,003,500	2,164,000	3,064,000	3,920,000	2,036,000	2,227,000	2,451,000
Total Expenses	8,437,315	7,917,020	8,997,143	9,092,426	9,101,694	9,389,279	10,422,973	10,524,393	8,802,393	9,161,393	9,559,393
Net Income	(1,774,315)	(629,520)	(706,403)	65,049	615,431	688,361	49,207	150,326	1,936,884	1,625,884	1,271,884
Ending Fund Balance	2,430,367	1,800,847	1,094,597	1,159,647	1,775,078	2,463,439	2,512,646	2,662,972	4,599,856	6,225,740	7,497,625
Debt Service Coverage (min. 1.20x)											
Coverage Met	1.01 no	1.35 yes	1.87 yes	2.31 yes	2.56 yes	2.71 yes	2.89 yes	6.50 yes	6.37 yes	6.20 yes	6.03 yes
Min. Fund Reserve Target (20% of Rev.)											
Target Met	1,332,600 yes	1,457,500 yes	1,658,148 no	1,831,495 no	1,943,425 no	2,015,528 yes	2,094,436 yes	2,134,944 yes	2,147,855 yes	2,157,455 yes	2,166,255 yes

APPENDIX G: RECOMMENDED RATE SCENARIO REVENUE SCHEDULE

WATER REVENUE SCHEDULE												
		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
Base Water Sales Revenue		\$5,517,500	\$5,517,500	\$5,517,500	\$5,517,500	\$5,517,500	\$5,517,500	\$5,517,500	\$5,517,500	\$5,517,500	\$5,517,500	\$5,517,500
Increases	Months*	% Increase										
Jan 1, 2013	6	14.0%	\$386,250	\$772,500	\$772,500	\$772,500	\$772,500	\$772,500	\$772,500	\$772,500	\$772,500	\$772,500
Jan 1, 2014	6	12.0%		\$377,400	\$754,800	\$754,800	\$754,800	\$754,800	\$754,800	\$754,800	\$754,800	\$754,800
Jan 1, 2015	6	11.0%			\$387,450	\$774,900	\$774,900	\$774,900	\$774,900	\$774,900	\$774,900	\$774,900
Jan 1, 2016	6	3.0%				\$117,300	\$234,600	\$234,600	\$234,600	\$234,600	\$234,600	\$234,600
Jan 1, 2017	6	4.0%					\$161,100	\$322,200	\$322,200	\$322,200	\$322,200	\$322,200
Jan 1, 2018	6	4.0%						\$167,550	\$335,100	\$335,100	\$335,100	\$335,100
Jan 1, 2019	6	0.0%							\$0	\$0	\$0	\$0
Jan 1, 2020	6	0.0%								\$0	\$0	\$0
Jan 1, 2021	6	0.0%									\$0	\$0
Jan 1, 2022	6	0.0%										\$0
Total Revenue		\$5,517,500	\$5,903,750	\$6,667,400	\$7,432,250	\$7,937,000	\$8,215,400	\$8,544,050	\$8,711,600	\$8,711,600	\$8,711,600	\$8,711,600
Fiscal Year - % Increase			7.0%	12.9%	11.5%	6.8%	3.5%	4.0%	2.0%	0.0%	0.0%	0.0%

**APPENDIX H: DESCRIPTION OF CAPITAL IMPROVEMENT
PROJECTS (SECTIONS 5 AND 6 FROM THE 2012) WATER
SUPPLY MASTER PLAN EXCERPT**

SECTION 5
DISTRIBUTION SYSTEM EVALUATION

Section 5 includes the results of the evaluation and analysis of the water distribution system. Included is a summary of the treated water storage and pumping capacity evaluation, a description of development and calibration of the hydraulic model, a summary of the results from the hydraulic evaluation, and a discussion of the recommended projects to mitigate existing and future deficiencies in the distribution system. This section also includes a summary of the raw water transmission system and a discussion of Firm Capacity.

EXISTING AND PROJECTED MAXIMUM DAY DEMANDS

The storage and pumping analysis and the hydraulic evaluation utilizing the hydraulic model are based, in part, on existing and projected maximum day demands from each pressure zone. The total existing average day demands and projected water demands for the City, as presented in Section 2, are as follows:

- Existing Average Day Demand – 3.73 mgd
- Projected Average Day Demand – 4.02 mgd

The maximum day demand is estimated using a peaking factor of 1.5 applied to the average day demand. Therefore, the existing and projected maximum day demands are as follows:

- Existing Maximum Day Demand – 5.60 mgd
- Projected Maximum Day Demand – 6.03 mgd

Table 5-1 is a summary of the existing and projected buildout average day and maximum day demands separated by pressure zones.

TABLE 5-1
EXISTING AND BUILDOUT WATER DEMANDS BY PRESSURE ZONE

Pressure Zone	Existing Conditions		Buildout Conditions	
	Average Day Water Demand (mgd)	Maximum Day Water Demand (mgd)	Average Day Water Demand (mgd)	Maximum Day Water Demand (mgd)
Zone I	1.45	2.18	1.56	2.34
Zone II	0.48	0.72	0.52	0.78
Zone III	1.80	2.70	1.94	2.91
Totals	3.73	5.60	4.02	6.03

Table 5-1 includes projected average day and maximum day demands for one new development slated to occur at buildout (Seeno Property). The Seeno Property, located south and east of the water treatment plant north of East 2nd Street, will include approximately 535 acres of general commercial and limited industrial land uses. This future development is located at elevations that require separate pumping, piping, and storage facilities. For planning purposes, this master plan update assumes that the Seeno Property development will be served from Zone I, since this appears to be the most efficient and cost-effective alternative.

STORAGE CAPACITY ANALYSIS

Water storage capacity requirements were developed and evaluated for each existing and future pressure zone. Storage capacity requirements include:

- Operational storage
- Fire flow storage
- Emergency storage

Operational Storage

Operational storage volume is the amount of storage capacity in a system to absorb fluctuations in demand compared to supply. With operational storage, system pressures are improved and stabilized to better serve customers throughout the service area. In the absence of appropriate above-ground storage, the source of supply provides peak hour demands.

Operational storage capacity is assumed to be 25 percent of the maximum day demand in accordance with AWWA guidelines.

Fire Flow Storage

Fire flow storage volume is provided for firefighting purposes to allow gravity flow in the event the source flow is interrupted. Fire flow storage volumes vary and are normally based on the requirements of the local Fire Marshall and the Insurance Services Office (ISO) requirements. The Benicia Fire Department uses the Uniform Fire Code Appendix III (Table III-A) and NPFA Handbook, 19th Edition, Section 5, Table 5-2 to assess individual building fire flow requirements in conjunction with accepted industry practices. Table 5-2 is a summary of the minimum fire flow requirements confirmed by the Benicia Fire Department for the selected land use categories.

TABLE 5-2
FIRE FLOW REQUIREMENTS

Land Use Category	Fire Flow (gpm)	Duration (hrs)
Single Family Residential	1,500	2
Multiple Family Residential	2,500	2
Schools	2,500	2
Business and Small Commercial	3,500	3
Industrial and Large Commercial	3,500 – 5,000	4

SECTION 5

DISTRIBUTION SYSTEM EVALUATION

Application of these fire flow criteria varies within each pressure zone. As indicated in Table 5-2, fire flows range from 3,500 to 5,000 gpm for the industrial and large commercial land use classifications. A 5,000 gpm fire flow is required in the commercial/industrial area on the northeast side of Zone I and the area east of East 7th Street. All other commercial/industrial areas of Zone I are evaluated at a fire flow of 3,500 gpm. Zone II and Zone III have a maximum fire flow requirement of 2,500 gpm due to the schools and multi-family land uses within these pressure zones. Fire flow requirement within the residential areas of all zones is approximately 1,500 gpm.

Based on the discussion above and Table 5-2, the maximum fire flow requirements are:

- In Zone I: 5,000 gpm for 4 hours (1.3 million gallons)
- In Zone II: 2,500 gpm for 2 hours (0.3 million gallons)
- In Zone III: 2,500 gpm for 2 hours (0.3 million gallons)

Emergency Storage

Emergency storage is the storage volume available to meet demands during emergency situations such as pipeline failures, major trunk main failures, pump failures, electrical power outages, or natural disasters. The volume of water allocated for emergency uses is determined by the historical record of emergencies experienced and the amount of time which is expected to lapse before the emergency can be corrected. The amount of emergency storage included within a particular water distribution system is an owner option, based on an assessment of risk and the desired degree of system dependability. In California, emergency storage volumes vary by agency. It is not uncommon for emergency storage volumes to range from 25 percent of the average day demand to over 100 percent of maximum day demand. The lower emergency storage volume range is typical in systems with:

- Single pressure zones
- Adequate and reliable (including emergency power) water supply sources that could be utilized in an emergency
- Redundant pumping facilities when several pressure zones exist
- More than one transmission system source

If some, or all, of the criteria listed above do not apply, then it is appropriate to use the higher emergency storage volume range.

The City has storage capacity in each pressure zone. In addition, there is gravity flow into Zone I, one pump station (P-1 Pump Station) that can deliver water to Zone II, and two pump stations (P-2 Pump Station and P-3 Pump Station) that can deliver water to Zone III. Due to this pumping arrangement and storage capacity, it is recommended that emergency storage criteria be established at 50 percent of maximum day demand for each pressure zone.

Storage Requirements

Table 5-3 is a summary of the total storage requirements based on the existing demand by pressure zone. Table 5-4 is a summary of the total storage requirements based on the projected demand at buildout by pressure zone.

TABLE 5-3
EXISTING STORAGE REQUIREMENTS BY PRESSURE ZONE

Pressure Zone	Existing Max Day Demand (mgd)	Available Storage (MG)	Storage Requirements				Additional Storage (MG)
			Operational (MG)	Fire Flow (MG)	Emergency (MG)	Total (MG)	
Zone I	2.18	7.00	0.55	1.30	1.09	2.94	-4.07
Zone II	0.72	1.80	0.18	0.30	0.36	0.84	-0.96
Zone III	2.70	4.00	0.68	0.30	1.35	2.33	-1.68
Totals	5.60	12.80	1.40	1.90	2.80	6.10	-6.70

TABLE 5-4
BUILDOUT STORAGE REQUIREMENTS BY PRESSURE ZONE

Pressure Zone	Existing Max Day Demand (mgd)	Available Storage (MG)	Storage Requirements				Additional Storage (MG)
			Operational (MG)	Fire Flow (MG)	Emergency (MG)	Total (MG)	
Zone I	2.34	7.00	0.59	1.30	1.17	3.06	-3.95
Zone II	0.78	1.80	0.20	0.30	0.39	0.89	-0.92
Zone III	2.91	4.00	0.73	0.30	1.46	2.48	-1.52
Totals	6.03	12.80	1.51	1.90	3.02	6.42	-6.38

The storage requirements are compared to existing storage capacity in each pressure zone to determine deficiencies.

Each of the existing pressure zones has a surplus of storage capacity under existing demand conditions, and no additional storage capacity is necessary. However, this analysis is based on assuming the storage capacity of the R-1 Reservoir is used for operational, emergency, and fire flow conditions in Zone I. Due to the lower base elevation of this tank much of this storage capacity is more serviceable for Zone II than for Zone I. The R-1 Reservoir is located at a hydraulic grade line much lower than the Zone I reservoirs (clearwell and chlorine contact tank), and thus, it is not a necessary component in the operation of Zone I. However, the R-1 Reservoir does provide a fairly large amount of fire and emergency storage to Zone II and partially to Zone I.

If the R-1 Reservoir capacity (3.0 MG) is taken out of service, the analysis concludes that the existing storage is adequate. This conclusion is still valid at buildout conditions where the additional storage required remains negative. In other words, there is a surplus of storage.

At existing demands, Zone II has surplus storage of approximately 1.0 million gallons. Zone II is the smallest of the pressure zones and will not require the total storage volume allocated in the R-2 Reservoir. This additional capacity can be utilized for Zone I in an emergency; it also provides increased reliability and flexibility for pumping from Zone II to Zone III at the P-2 Pump Station.

Zones I, II, and III have a surplus of storage capacity even at buildout.

The future proposed development (Seeno Property) will require a separate pressure zone with specific pumping, piping, and storage facilities. The storage capacity for new developments should be reviewed and approved by the City at the time of development.

PUMPING CAPACITY ANALYSIS

Three pump stations deliver water to Zones II and III from Zone I. Each of the pumping stations was evaluated to determine if the existing capacity is sufficient to deliver maximum day demands to the upper pressure zones under existing and buildout demands.

Evaluation Criteria

Pump stations are normally sized to deliver maximum day demands to the pressure zone they serve. Peak hour demands are met by storage capacity in the pressure zone. Since all pressure zones in the City's water distribution system have adequate storage capacity, the pump stations should be sized to deliver maximum day demand. In the case of P-1 Pump Station, it must be sized to pump maximum day demand for Zone II as well as transfer a portion of the Zone III maximum day demand. Zone III maximum day demand must be delivered by a combination of the P-2 Pump Station (from Zone II) and the P-3 Pump Station P-3 (from Zone I).

Each pump station should consist of at least two duty pumps and one standby pump with the same capacity as the largest pump. The total capacity of the duty pumps is referred to as the firm capacity. Firm capacity should at least equal the maximum day demand.

Pumping Requirements

In order to evaluate the adequacy of pumping capacity, it is necessary to determine an operating scenario and perform the analysis, assuming a level of capacity provided by one pump station with the remainder provided by the other station. Two separate pumping scenarios were investigated: (1) Utilizing firm pumping capacity at the P-3 Pump Station (1,900 gpm); and (2) pumping to Zone III with P-3 Pump Station out of service. Analysis of these two scenarios should indicate if existing pumping capacity is sufficient for existing and buildout demands.

Pumping Scenario 1: P-3 Pump Station at Firm Capacity. Table 5-5 summarizes the pumping requirements by pressure zone for existing demands, utilizing the criteria presented above and with the P-3 Pump Station at firm capacity (1,900 gpm). Table 5-6 is a summary of the pumping requirements by pressure zone for buildout demands. Pumping requirements are compared to existing pumping capacity in each pressure zone to determine deficiencies.

SECTION 5
DISTRIBUTION SYSTEM EVALUATION

TABLE 5-5
EXISTING CONDITIONS PUMP STATION FLOW REQUIREMENTS – PUMPING SCENARIO 1

Pump Station	Zone Lift	Total Pumps		Pump Capacity (gpm)	Total Firm Capacity (gpm)	Maximum Day Demand (gpm)	Transfer To Upper Zones (gpm)	Total Capacity Required (gpm)	Additional Capacity Required (gpm)
		Duty	Standby						
P-1	Zone I to Zone II	2	1	2,200	4,400	500	0	500	-3,900
P-2	Zone II to Zone III	3	1	1,000	3,000	0	0	0	-3,000
P-3	Zone I to Zone III	2	1	950	1,900	1,900	0	1,900	0
Totals					9,300	2,400	0	2,400	-6,900

TABLE 5-6
BUILDOUT CONDITIONS PUMP STATION FLOW REQUIREMENTS – PUMPING SCENARIO 1

Pump Station	Zone Lift	Total Pumps		Pump Capacity (gpm)	Total Firm Capacity (gpm)	Maximum Day Demand (gpm)	Transfer To Upper Zones (gpm)	Total Capacity Required (gpm)	Additional Capacity Required (gpm)
		Duty	Standby						
P-1	Zone I to Zone II	2	1	2,200	4,400	542	120	662	-3,738
P-2	Zone II to Zone III	3	1	1,000	3,000	120	0	120	-2,880
P-3	Zone I to Zone III	2	1	950	1,900	1,900	0	1,900	0
Totals					9,300	2,562	120	2,682	-6,618

Pumping Scenario 2: P-3 Pump Station Out of Service. In this scenario, the P-3 Pump Station is assumed to be out of service, and all pumping to Zones II and III must be handled by the P-1 Pump Station and P-2 Pump Station. Although not a normally expected operating scenario, this analysis will indicate the ability of the system to respond to an emergency situation. Table 5-7 is a summary of the pumping requirement by pressure zone for existing demands under this pumping scenario. Table 5-8 is a summary of the pumping requirements by pressure zone for buildout demand with the P-3 Pump Station out of service.

SECTION 5
DISTRIBUTION SYSTEM EVALUATION

TABLE 5-7
EXISTING CONDITIONS PUMP STATION FLOW REQUIREMENTS – PUMP SCENARIO 2

Pump Station	Zone Lift	Total Pumps		Pump Capacity (gpm)	Total Firm Capacity (gpm)	Maximum Day Demand (gpm)	Transfer To Upper Zones (gpm)	Total Capacity Required (gpm)	Additional Capacity Required (gpm)
		Duty	Standby						
P-1	Zone I to Zone II	2	1	2,200	4,400	500	1,875	2,375	-2,025
	Zone II to Zone III	3	1	1,000	3,000	1,875	0	1,875	-1,125
P-3	Zone I to Zone III	0	1	950	0	0	0	0	0
Totals					7,400	2,375	1,875	4,250	-3,150

TABLE 5-8
BUILDOUT CONDITIONS PUMP STATION FLOW REQUIREMENTS – PUMP SCENARIO 2

Pump Station	Zone Lift	Total Pumps		Pump Capacity (gpm)	Total Firm Capacity (gpm)	Maximum Day Demand (gpm)	Transfer To Upper Zones (gpm)	Total Capacity Required (gpm)	Additional Capacity Required (gpm)
		Duty	Standby						
P-1	Zone I to Zone II	2	1	2,200	4,400	542	2,021	2,563	-1,837
	Zone II to Zone III	3	1	1,000	3,000	2,021	0	2,021	-979
P-3	Zone I to Zone III	0	1	950	0	0	0	0	0
Totals					7,400	2,563	2,021	4,584	-2,816

Evaluation Results

The results of the pumping capacity evaluation indicate that the existing pump stations have adequate firm capacity to provide maximum day demand conditions to each pressure zone, even under circumstances when the P-3 Pump Station is out of service.

A new pump station will most likely be required to convey water from Zone I to the future Seeno Property development. This new development will require separate pumping, storage, and piping facilities.

DEVELOPMENT OF HYDRAULIC NETWORK MODEL

The water distribution system hydraulic model was developed using WaterCAD, V8i, software prepared and distributed by Bentley. WaterCAD can perform steady-state and extended period simulations of hydraulic and water quality behavior in water distribution system networks.

The hydraulic network model of the existing water supply and distribution system was developed based on the City's water system base maps. Model input data that describe the physical characteristics of pipelines (length, diameter, and roughness) and junction nodes (elevations and nodal demand) were extracted from the base map or estimated from data provided by City staff.

Junction nodes define the end points of pipes and pipe segments and represent points of entry of water supply or discharges to meet water demands for a specific localized area. Analysis of the water system is accomplished by the model solving a series of hydraulic equations for pressure and flow. The result of modeling simulations is a numerical set of pressures and flows that simultaneously satisfy the equations for every pipeline and junction node in the network.

Modeling Criteria

Establishing computer modeling criteria is a key factor in model development, calibration and use of the hydraulic network model, as well as interpretation of the modeling results. Criteria used in developing the City's hydraulic model and the input data are described below:

- All pipes 8 inches in diameter and larger were included in the model, except in critical areas of the system where modeling 6-inch and 4-inch diameter pipes was necessary to complete a loop to provide accurate flow distribution.
- Pipe lengths and nominal diameters were obtained from the existing water system base maps developed and maintained by the City.
- Pipe roughness coefficient, Hazen-Williams "C" factor, was assigned based on pipe material and age.
- Pump station pipe configurations, pump performance curves, and motor nameplate information were acquired from "as-built" plans and documentation provided by City staff.
- Ground surface elevations were obtained from LIDAR data obtained from Solano County.
- Water demands are expressed in gallons per minute (gpm).

Skeletonization

The purpose of skeletonizing a water distribution system is to develop a model that accurately simulates the hydraulics of the pertinent pipelines delivering water throughout the system. Skeletonizing tends to reduce the complexity of the model which yields faster analyses, without compromising the water distribution system. The City's water distribution system model was skeletonized to a certain extent and if necessary can be expanded to meet the needs of the City in the future.

Roughness Coefficient

Pipe material and age were the criteria used to establish a roughness, "C" factor. In general, "C" factors ranged from 100 to 115 in older portions of the City. For the City's new developing area

in the northwest, "C" factors were assumed between 120 and 130. All new pipes, regardless of material, assumed a "C" factor of 130.

Assignment of Water Demands

Water demands were distributed throughout the network model using land use data provided by the City. The land use (unit) water demand factors are defined in Section 2 and correspond to each of the City's major land use designations. These land use designations include: single family, multi-family, commercial, industrial, parks, and open space.

Water demand worksheets were developed from the City's Land Use Zone Map and used to calculate the estimated existing and buildout water demands by land use designation. Water demands were then distributed throughout the system by assigning the calculated demands to junction nodes in the network model. As a general rule, assignments were made to as many nodes as possible. It was possible for a junction node to be assigned demand from one or more adjacent land use areas. There is no direct computer link between the water demand worksheets and the WaterCAD software at this moment. The software does have the capability to assign demand according to the land use designations (land use zone map) and the model can be updated to this method in the future. For purposes of this master plan update, the water demands were assigned to junction nodes manually.

Model Calibration

A model is considered calibrated for a set of operating conditions and water uses if it can predict flows and pressures with reasonable agreement. Calibration can be defined as a two-step procedure: (1) comparison of demand and pressures predicted by the model with observed demand and pressures for the known operating conditions, and (2) adjustment of the model input data to improve agreement between observed and model predicted values. Water demands, reservoir levels, and pump operating conditions are continually changing in the City's water system. Thus, to calibrate the model, it was necessary to obtain a "snapshot" of system demand and pressures at a single point in time along with specific operating conditions (i.e. reservoir levels and pump operation). The key to creating an accurate computer model lies within the data collection and observation periods.

The City's staff conducted a series of fire flow tests at the following locations within the City on February 27, 2012 between 11AM and 2PM.

- Location 1: Stone Road at Getty Court (industrial location, in Zone I)
- Location 2: Solano Drive at Willow Court (residential location, in Zone III)
- Location 3: 1300 Drolette Way (institutional location, in Zone II)
- Location 4: West K Street at Military West (downtown location, in Zone I)

At each of these locations, the hydrant was flushed via the 2-½ inch port and a 15 ft fire hose, through a HydroBlaster diffuser.

SECTION 5
DISTRIBUTION SYSTEM EVALUATION

The field results obtained for each location included:

- Fire hydrant elevation, ft
- Static pressure, psi
- Residual pressure, psi
- Pitot read, pressure in psi at flow in gpm

In addition to the individual field test results, the City provided system operational data at the time of the field tests:

- Reservoir elevations
- Pump station operation
- Total demand per Zone

To assess the model's ability to accurately represent the behavior of the existing system, pressures and flows predicted by the model were compared with the data collected in the field. Given the uncertainties involved in monitoring and duplicating conditions in the water system (including such things as actual demands, pipeline conditions, valve positions, and pump efficiency), it is assumed that the model predicted results (demand and pressure) should be within 10 percent of the field results. This 10 percent accuracy is an industry standard typically accepted for models used in master planning efforts. If the model is used for operational optimization, the modeling results should be within 5 percent of the field results.

Calibration Results

Table 5-9 is a comparison of the model results comparison with the field results. Although the accuracy at some locations approaches 10 percent, the overall results of the calibration runs indicate that the model simulates the City's water system with a high level of accuracy and correlates well with observed conditions.

TABLE 5-9
MODEL CALIBRATION RESULTS – FEBRUARY 27, 2012^a

Fire Flow Location	Zone	Land Use	Model Junction Node	Field Data			Model Data			% Difference	
				Static Pressure (psi)	Residual Pressure (psi)	Flow (gpm)	Static Pressure (psi)	Residual Pressure (psi)	Flow (gpm)	Static Pressure	Residual Pressure
Stone Rd at Getty Ct	I	Industrial	J17-03	73	70	863	69	68	863	5.48	2.86
Solano Dr at Willow Ct	III	Residential	JF3-06	115	105	1,119	106	102	1,119	7.83	2.86
1300 Drolette Way	II	Institutional	JC5-31	105	90	957	103	87	957	1.9	3.33
West K St at Military West	I	Downtown	JC3-04	90	70	957	82	65	957	8.89	7.14

^a Fire flow tests conducted February 27, 2012 between 11AM and 2 PM

SECTION 5
DISTRIBUTION SYSTEM EVALUATION

The results of the calibration effort for February 27, 2012 indicate that the model accurately represents system performance at that time. Most of the model runs to analyze the system will be conducted under maximum day or peak hour demand conditions. The calibrated model was run under existing average day demand conditions which is typical of the time the calibration results were observed. It is recommended that hydraulic models be calibrated using maximum day demand or peak hour conditions, when the system is under the most stress. With the availability of SCADA information, it is recommended that the model be calibrated in the future using fire flow tests conducted in the summer months.

For purposes of this master plan update, the calibrated model is acceptable and may be used in all subsequent evaluations of existing and buildout system operations.

DISTRIBUTION SYSTEM ANALYSIS

The calibrated hydraulic model was utilized to evaluate the performance of the water distribution system under existing demand conditions and buildout demand conditions. The model provides information on pressure, flow, head loss, velocity, and other hydraulic information. This information is then compared to evaluation criteria that represent the level of service for the City. System deficiencies are typically observed when the evaluation criterion is not met.

Evaluation Criteria

Table 5-10 is a summary of the evaluation criteria used for the analysis of the City's distribution system hydraulic model.

TABLE 5-10
DISTRIBUTION SYSTEM EVALUATION CRITERIA

Criteria	Value
Minimum pressure – average day demand	40 psi
Minimum pressure – maximum day demand	35 psi
Minimum pressure – peak hour demand	30 psi
Minimum residual pressure – fire flow	20 psi
Maximum pressure at service connection	125 psi (PRV required at 80 psi per UFC)
Maximum velocity	8 ft/sec (typical) 12 ft/sec (short durations)
Maximum head loss	10 ft per 1000 ft
Main sizing	Greater of maximum day plus fire flow or peak hour demand

Model Simulations - Existing Demand Conditions

The most common hydraulic modeling simulations that stress the system capacity are: maximum day demand, maximum day demand plus fire flow, and peak hour. The modeling results for these simulations are compared with the evaluation criteria presented in Table 5-10 to identify any potential system deficiencies. The evaluation does not address the adequacy of the minor distribution piping between the modeled network and the point of use.

For each of the simulations for existing conditions, it is assumed that the levels in the reservoirs are at the point just before the pump stations are ON. This condition represents the worst case scenario, when the reservoir is at the lowest level in the normal operation. In other words, the system is primarily fed via gravity with flow from the reservoirs.

To ensure all the pressure zones are evaluated properly, maximum day demand and fire flow simulations are carried out within each pressure zone. Below is a list of all the modeling simulations to evaluate the existing conditions:

- Simulation 1: Max Day Demand
- Simulation 2: Peak Hour Demand
- Simulation 3: Max Day Demand + Fire Flow at Arsenal Area (5,000 gpm) Zone I
- Simulation 4: Max Day Demand + Fire Flow at Benicia High School (2,500 gpm) Zone I
- Simulation 5: Max Day Demand + Fire Flow at City Hall (3,500 gpm) Zone I
- Simulation 6: Max Day Demand + Fire Flow at Industrial Way (5,000 gpm) Zone I
- Simulation 7: Max Day Demand + Fire Flow at Robert Semple Elementary School (2,500 gpm) Zone II
- Simulation 8: Max Day Demand + Fire Flow at 1459 Drolette Way (1,500 gpm) Zone II
- Simulation 9: Max Day Demand + Fire Flow at 822 Bantry Way (1,500 gpm) Zone III
- Simulation 10: Max Day Demand + Fire Flow at Henderson Elementary School (2,500 gpm) Zone III
- Simulation 11: Max Day Demand + Fire Flow at 570 Lori Dr. (2,500 gpm) Zone 3-A
- Simulation 12: Max Day Demand + Fire Flow at 949 Rose Dr. (1,500 gpm) Zone 3-B

Each of the model runs is described below. Deficiencies resulting from the model runs were corrected by recommending projects summarized later in this section. In some instances, corrections were made through an iterative process to produce a cost-effective solution to the deficiency.

Simulation 1 – Max Day Demand. This modeling simulation assesses the capabilities of the existing water distribution system during a hot summer day.

The model run predicts that residual pressures throughout the system are at or above 35 psi, with the exception of the following areas:

- The 12-inch Zone I water main on Park Road south of Camel Road
- The 12-inch Zone III water main on Belvedere Drive west of Rose Drive

The low residual pressures (less than 35 psi) in the Park Road area may be erroneous model results due to the uncertain connectivity between the existing 12-inch water main and the water mains south of I-780.

Recommendation: Confirm the connectivity of the water mains.

Another reason for the low residual pressures in this area is the high ground elevation at certain locations. The City should consider valving off the area north of I-780 and making it permanently part of Zone II.

The low residual pressures (less than 35 psi) in the Belvedere Drive area are due to the high ground elevations. There is a ground elevation change of approximately 40 to 50 feet from Rose Drive and Belvedere Drive to the intersection of Belvedere Drive and Regis Court. Upsizing the water mains will not have a beneficial impact.

Recommendation: Maintain the reservoir levels at or near the overflow elevation. Also, confirm the ground elevations using a GPS unit to ensure the model has correct input data.

Portions of the Zone III, particularly north of Rose Drive and along Southampton Road exhibit residual pressures during maximum day demand above 125 psi. These high residual pressures are a result of the reservoir elevation in comparison to the low ground elevations. Again, these high residual pressures are in the northeast area of Zone III and the south boundaries of Zone III. The City requirement to have all Zone III customers install individual pressure regulators at their shut-off valve ensures that users will experience system pressures within the acceptable range.

Simulation 2 – Peak Hour Demand. This modeling simulation assesses the ability of the existing water distribution system to deliver high water demands during a hot summer day in the afternoon or early evening. The simulation identifies pipelines with high velocities or head losses and areas of low pressure resulting from the increased head losses.

The modeling results indicate that on the whole, the distribution system will experience residual pressures, velocities, and head losses that are acceptable per the evaluation criteria noted in Table 5-10. The only exceptions for not meeting the minimum residual pressure are the same areas identified under Simulation 1.

Simulation 3 – Max Day + Fire Flow at Arsenal Area (5,000 gpm) Zone I. This simulation was selected to model the water system response in a critical emergency condition represented by a 5,000 gpm fire flow occurring in the arsenal area (end of Tyler Street) during a maximum day demand condition.

The modeling simulation confirms that the existing 12-inch water main on Park Road south of Camel Road will experience high head losses and residual pressures less than 20 psi under this condition. These results are not acceptable when compared to the evaluation criteria of Table 5-10. A new 18-inch pipeline is recommended on Park Road from the termination of the existing 24-inch transmission main extending south on Park Road, past Camel Road, across I-780, and connecting to the existing 14-inch in the Arsenal Area. By adding this recommended 18-inch

pipeline, the residual pressures, velocities, and head losses in the area meet the recommended criteria.

Furthermore, the existing 14-inch pipeline on Park Road west of Industrial Way to Bayshore Road is the only conduit for delivering water to the southern portion of Zone I. If this pipeline is out of service, the entire southern portion of Zone I will have to be supplied with water from the R-1 Reservoir which is not normally used to supply water to the Zone I. This deficiency can be mitigated by including a new 24-inch pipeline in Park Road from Industrial Way to Bayshore Road. This pipeline parallels the single pipeline in Park Road that connects the two portions of Zone I. This new pipeline is an extremely important project to increase the reliability of the distribution system and enhance its performance should the Park Road pipeline be damaged at any time.

In this area, it is evident that the existing 6-inch water main on Jefferson Street from Grant Street to Park Road is undersized. Model results illustrate that this section of existing 6-inch cast iron pipe on Jefferson Street should be replaced with 8-inch ductile iron pipe. In addition, the 6-inch pipeline is located inside the curb and not in the street as currently shown on the utility maps.

Finally, the existing water distribution system on Grant Street includes a dead-end 12-inch water main near Bayshore Road. The recommendation is to extend this existing water main and connect it to the existing water 8-inch water main on Bayshore Road to completely loop the distribution system in this area.

- **Recommendation 1:** Install a new 18-inch water main along Park Road from the northeast corner of the National Guard Armory to Oak Road and connect to the existing 14-inch water main in the Arsenal Area. This pipeline, a length of approximately 3,000 feet, will deliver water to the southern portion of Zone I.
- **Recommendation 2:** Install a new 24-inch transmission water main on Park Road from Industrial Way to Bayshore Road parallel to the existing 14-inch transmission main. This would be a reliability transmission main to ensure water can be delivered to the southern end of Zone I in case there is a break in the existing transmission main on Park Road.
- **Recommendation 3:** Replace approximately 950 feet of existing 6-inch cast iron pipe with 8-inch ductile iron pipe from Grant Street to Park Road on Jefferson Street. The existing pipe is in poor condition. New pipe will reduce maintenance costs.
- **Recommendation 4:** Construct approximately 500 feet of 12-inch ductile iron pipe on Grant Street from the terminus of the existing 12-inch pipeline to Bayshore Road, thus completing a loop in the area. This will provide better flow distribution and increase fire protection.

Simulation 4 - Max Day Demand+ Fire Flow at Benicia High School (2,500 gpm) Zone I.

This simulation was selected to model the water system response in a critical emergency condition represented by a 2,500 gpm fire flow occurring at the Benicia High School (existing 8-inch water main on Military West) during a maximum day demand condition.

SECTION 5
DISTRIBUTION SYSTEM EVALUATION

The results of this modeling simulation indicate residual pressures less than 20 psi at the fire node with a fire demand of 2,500 gpm. To mitigate this residual pressure deficiency, it is recommended to install a 12-inch pipeline in Military West between West 6th Street and Plaza de Oro. This new pipeline will ensure the residual pressures of 20 psi or greater and reduce head losses on the existing water mains on the west side of Zone I. This pipeline would extend a 12-inch pipeline that currently reduced to 8 inches at West 6th Street.

- **Recommendation 5:** Install a new 12-inch water main along Military West from West 6th Street to Plaza de Oro to extend an existing 12-inch that reduces to 8-inch at West 6th Street.

Simulation 5 - Max Day Demand + Fire Flow at City Hall (3,500 gpm) Zone I. This simulation was selected to model the water system response in a critical emergency condition represented by a 3,500 gpm fire occurring at City Hall during a maximum day demand condition.

This run indicates that residual pressures predicted at the fire node are acceptable. The model also concludes that the existing 10-inch water main on East 2nd Street south of Military East to L Street will exhibit velocities just above 8 ft/sec and head losses above 10 ft/1000 ft of pipeline. These results have a minor impact to the system and no recommendations for improvements are necessary at this time.

Simulation 6 - Max Day Demand + Fire Flow at Industrial Way (5,000 gpm) Zone I. This simulation was selected to model the water system response in a critical emergency condition represented by a 5,000 gpm fire occurring in the vicinity of Industrial Way and Lake Herman Road during a maximum day demand condition.

The results of this modeling simulation indicate that all hydraulic evaluation criteria were met.

Simulation 7 - Max Day Demand + Fire Flow at Robert Semple Elementary School (2,500 gpm) Zone II. This simulation was selected to model the water system response to a fire flow condition at the Semple Elementary School served by Zone II represented by a flow of 2,500 gpm at the intersection of East 3rd Street and S Street.

The modeling results for this simulation indicate residual pressures meeting the evaluation criteria. However, the existing 8-inch water mains on S Street and East 3rd Street may experience velocities above 8 ft/sec and high head losses above 10 ft/1000 ft of pipeline. These results are minor, of short duration, and have no impact on the system, thus no recommendations for improvements are necessary.

Simulation 8 - Max Day Demand + Fire Flow at 1459 Drolette Way (1,500 gpm) Zone II. This simulation was selected to model the water system response to a residential fire flow condition at 1459 Drolette Way in the most western end of the pressure Zone II.

The results of this modeling simulation indicate that the residual pressure at the fire node is approximately 18 to 19 psi. These low pressures are primarily due to the long dead-end condition of the existing 8-inch water main which extends approximately 1,100 ft from Cheryl Drive. A

simple solution that would mitigate the residual pressure deficiency in this area is to construct a new 8-inch water main connecting the existing dead-end water main on Drolette Way with the existing 8-inch water main on Corrigan Court. A preliminary analysis concludes that there may be an existing utility easement between 1457 Drolette Way and 1455 Drolette Way. It is assumed that this easement can be used to install a new 8-inch water main. This looping would ensure adequate residual pressures and lower velocities as well as minimizing head losses.

- **Recommendation 6:** Install a new 8-inch water main loop between the existing 8-inch water mains on Drolette Way and on Corrigan Court using the existing utility easement between 1457 and 1455 Drolette Way.

Simulation 9 - Max Day Demand + Fire Flow at 822 Bantry Way (1,500 gpm) Zone III. This simulation was selected to model the water system response in a critical emergency condition represented by a 1,500 gpm fire occurring in Zone III at the dead end of the existing 8-inch water main on Bantry Way during a maximum day demand condition.

The results of this run indicate that while the residual pressures are within the limits of the evaluation criteria, this existing 8-inch water main will experience high velocities (less than 10 ft/sec) and high head loss (greater than 10 ft/1000 ft) due to the long dead-end condition. These results are minor and have no impact on the system, thus no recommendations for improvements are necessary.

Simulation 10 - Max Day Demand + Fire Flow at Henderson Elementary School (2,500 gpm) Zone III. This simulation was selected to model the water system response to a critical fire flow of 2,500 gpm at the existing Henderson Elementary School on Hastings Drive as part of the service from Zone III.

The results of this modeling simulation indicate that all hydraulic evaluation criteria were met.

Simulation 11 - Max Day Demand + Fire Flow at 570 Lori Dr. (2,500 gpm) Zone 3-A. This simulation was selected to model the water system response in a critical emergency condition represented by a 2,500 gpm fire occurring in Zone 3-A near the Bridgeview Apartments at the intersection of Lori Drive and Sandy Way during a maximum day demand condition.

The results of this modeling simulation conclude that while adequate residual pressures are achievable at the fire junction node, the nodes further into the pressure zone (north end of Shirley Drive) will experience residual pressures less than 20 psi during this critical condition. It appears that this specific area has ground elevations that are at least 65 ft higher than the overall Zone 3-A area. This dramatic change in elevation can reduce the residual pressure as much as 30 psi.

Recommendation: Confirm the ground elevations in this area prior to defining improvements to mitigate the deficiency noted by the modeling results.

Furthermore, analysis of the existing distribution system in this area concludes that Zone 3-A has a single source of supply, the existing 8-inch water main crossing I-780 from Southampton Road to the intersection of West 7th Street and Lori Drive. This single source water main for Zone 3-A

will exhibit high head losses (as high as 120 ft/1000 ft) and high velocities (as high as 16 ft/sec) during this type of critical conditions (maximum day plus fire flow). In addition, a potential out-of-service condition on this existing 8-inch would require the City to service Zone 3-A manually by opening zone valves. For redundancy and operational continuity, it is recommended to install a new 12-inch water main on West 7th Street from Southampton Road to Lori Drive across I-780. This will improve the residual pressures in this system and reduce head losses.

- **Recommendation 7:** Install a new 12-inch water main on West 7th Street extending from Southampton Road to Lori Drive across I-780.

In this same general area, there is a deficiency in the ability to feed water to the western end of Zone II. In June 2010, a pipe break in Military West left over 300 homes and an elementary school completely out of water. For emergency purposes, installing a new pressure reducing valve (PRV) station on West 7th Street will allow the City to feed the western end of Zone II. This recommended PRV station will only be activated if there is a major break on the 12-inch water main between West 5th Street and West 7th Street along Military West. The PRV station would be located directly across the street from the existing Zone 3-A station and provide water through Carolina Drive, Anita Circle, and Cheryl Drive.

This PRV station is an emergency back-up recommendation, and will be slated for inclusion in a future CIP, tentatively scheduled for FY 2021-32 planning period.

- **Recommendation 7A:** Install a new PRV station to serve as emergency back-up for feeding water to the western end of Zone II.

An additional alternative to mitigating flow restrictions in western Zone II would be installation of a pipeline through the easement between Alto Loma and Raymond Drive. The City's utility maps show that the pipelines have blind flanges set for a future connection.

Simulation 12 - Max Day Demand + Fire Flow at 949 Rose Dr. (1,500 gpm) Zone 3-B. This simulation was selected to model the water system response during a fire flow condition of 1,500 gpm occurring in Zone 3-B near 949 Rose Drive.

The results of this modeling simulation indicate that all hydraulic evaluation criteria were met.

Buildout Hydraulic Model

The buildout conditions hydraulic model was developed by increasing demands in certain areas to account for development of existing undeveloped land and areas planned for future development. The majority of the future demand will come from infill projects within Zone I. Other major development, like the Seeno Property is assumed to include a new booster pump station, storage facilities, and pipelines from Zone I to provide adequate water service to the area. It is assumed that the new booster pump station for this new development will be sized to provide the necessary flow to meet all future demand conditions of this development. Therefore, for purposes of modeling the buildout system, demands of peak hour and maximum day plus fire flow were evaluated at the point where the booster pump station may be located.

SECTION 5

DISTRIBUTION SYSTEM EVALUATION

The simulations identified for the existing conditions were again executed for the future buildout demand condition. The future buildout demand model simulations conclude that the proposed improvements (recommendations) were still valid. No additional system improvements are necessary to meet the future buildout demands with the exception of separate pumping, piping, and storage facilities for the future Seeno Property development.

A final analysis of the buildout distribution system concludes that delivery of potable water to the distribution system relies on a key 30-inch water transmission main from the existing water treatment plant. This 30-inch water transmission main has been recently confirmed to be of asbestos cement pipe (ACP) material. A potential break in this existing 30-inch ACP transmission main would severely impact water service to the City's service area. A recommendation is to install a new 36-inch ductile iron pipe transmission main parallel to the existing transmission main to serve as a redundancy main. This new parallel 36-inch transmission main would extend from the water treatment plant to West Industrial Way (approximately 2,700 feet) and to serve Seeno's Business Park.

- **Recommendation 8:** New 36-inch redundant transmission water main (approximately 2,700 feet) from water treatment plant to West Industrial Way.

In addition, the City has considered entering into an agreement with the City of Vallejo to construct an emergency inter-tie connection between the City of Vallejo and the City of Benicia. The City of Vallejo has an existing 12-inch water main on Benicia Road just west of the City near Columbus Parkway. It has been conjectured that an inter-tie connection would extend from this 12-inch water main, along Columbus Parkway, across I-780 near Rose Drive, follow the service road and connect to the City of Benicia Zone I water distribution system near Military West and K Street. This emergency inter-tie connection would provide the City with a means to serve Zone I during a catastrophic emergency that may put the existing water treatment plant out of service for a substantial period.

- **Recommendation 9:** New 12-inch inter-tie connection from the City of Vallejo to the City of Benicia (approximately 8,200 feet) along Columbus Parkway and service road to Military West and K Street.

The City should further investigate the recommendation (see Buildout Hydraulic Model) for the construction of an emergency interconnection (inter-tie) with the City of Vallejo to receive treated water in an emergency. The two systems are located very close to each other on the west side of the Benicia. This inter-tie could consist of a pipeline connected to the existing water main on Benicia Road in the City of Vallejo near Columbus Parkway. A feasibility study should be completed first to confirm that the pressures at the proposed connection would match with the existing pressures in the City of Benicia's system. The study would consist of modeling analyses for the various pipeline alignments and potential conditions.

RAW WATER SUPPLY SYSTEM EVALUATION

The City has two sources of raw water that can be delivered to the water treatment plant through the raw water transmission system; see also Sections 3 & 4. Both the Cordelia Pump Station and

the North Bay Aqueduct (NBA) Pump Station can pump different sources of water to the raw water diversion structure at the Benicia Water Treatment Plant (WTP).

The NBA Pump Station conveys surface water from the Cordelia Forebay using three pumps with a total pumping capacity of 32.0 cfs (20.7 mgd). This pump station is owned and operated by the Department of Water Resources (DWR).

The Cordelia Pump Station conveys surface water from the Putah South Canal Terminal Reservoir using four pumps with a total pumping capacity of 28.5 cfs (18.4 mgd). The Cordelia Pump Station is owned and operated by the City.

The NBA receives Delta source water from Barker Slough Pumping Plant (BSPP) on Barker Slough. The Delta source water pumped by the BSPP flows into the Cordelia Forebay through the North Bay Aqueduct. This pump station (BSPP) has a rated design capacity of 162 cfs. The BSPP has nine pumps installed: two pumps are rated at 14 cfs and seven are rated at 28 cfs. A tenth pump rated at 28 cfs for Fairfield and Vacaville's 20 cfs peaking capacity has not been installed. Due to pumping discrepancies, the Solano County Water Agency (SCWA) and DWR have performed flow testing and hydraulic modeling to determine the actual pumping capacity. Based on their analyses, it was determined that the pipe pressures needed to be restricted by limiting pumping to six large and two small pumps. This results in a BSPP operational capacity of 130 cfs and provides Benicia 26.6 cfs of NBA capacity.

To provide for redundancy and account for electrical and mechanical breakdowns, it is recommended that "Firm Capacity" be utilized in raw water system master planning. Firm capacity is defined as the capacity available with the largest pump out of service. Because the operational capacity requires a large pump to be out of service to limit pipe pressures, the 26.6 cfs would be Benicia's Firm Capacity.

In addition to Firm Capacity impacts, the California Department of Fish and Game issued an incidental take permit in 2009 for Longfin Smelt for the NBA. The permit can restrict diversions in the NBA to 50 cfs from January 15 to March 30 in dry and critically dry years. If the limit is applied, Benicia's NBA flow allocation would be:

$$50 \text{ cfs} \times 20.4\% = 10.2 \text{ cfs}$$

These adjusted flow capacities are integral to ensuring reliable and optimal raw water deliveries in the future.

RAW WATER DELIVERY OPTIMIZATION

Delivery optimization is analyzed using two separate water supply conditions:

1. Normal Year Demand (2035) – Firm Capacity
2. Dry Year Demand (2035) – Longfin Smelt Pumping Restriction

In the following tables, the buildout demand is compared with both the Firm Capacity supply and a dry year supply with the Longfin Smelt Pumping Restriction. The purpose of the tables is to

SECTION 5
DISTRIBUTION SYSTEM EVALUATION

display how the future demands compare to the restricted delivery of supply water, thus determining if there is adequate supply.

Firm Capacity Delivery with Normal Year Demand (2035)

Table 5-11 is a summary of the buildout monthly demand compared to the City’s surface water flow allocation during a normal year. The water supply to the City of Benicia consists of raw water from the NBA and Solano Irrigation District (SID). These supplies are balanced to compensate for the total buildout demand in a Normal Year.

TABLE 5-11
NORMAL YEAR RAW WATER OPTIMIZATION (2035) – FIRM CAPACITY

Month	Demand ^a AF/month	Supply, AF/month		Total
		NBA	SID ^b	
January	597	497	100	597
February	597	497	100	597
March	716	566	150	716
April	955	805	150	955
May	1,195	1,095	100	1,195
June	1,313	1,213	100	1,313
July	1,433	1,333	100	1,433
August	1,433	1,333	100	1,433
September	1,313	1,213	100	1,313
October	1,075	775	300	1,075
November	716	416	300	716
December	597	497	100	597
Total	11,940	10,240	1,700	11,940

^a Normal year water demand (2035) as presented in the City of Benicia’s 2010 UWMP.

^b SID supply is not limited on a monthly basis, but it is restricted to an annual maximum of 2,000 AF

The Firm NBA Capacity for Benicia is 26.6 cfs or (1,580 AF/month). Based on the firm capacity and the analysis presented in Table 5-11, the City has adequate firm capacity in the NBA to meet its Normal Year water demand at the predicted 2035 buildout demand. The SID supply is utilized throughout the year to balance and meet the total demand.

Pumping Restricted Delivery with Dry Year Demand (2035)

Table 5-12 is a summary of the monthly demand compared to the City's surface water flow allocation during a dry year and Longfin Smelt Pumping Restriction. The water supply to the City consists of raw water from both the NBA and SID.

TABLE 5-12
DRY YEAR RAW WATER OPTIMIZATION (2035) – LONGFIN SMELT PUMPING RESTRICTION

Month	Demand ^a AF/month	Supply, AF/month		
		NBA	SID ^b	Total
January	597	397	200	597
February	597	397	200	597
March	716	516	200	716
April	955	755	200	955
May	1,195	1,095	100	1,195
June	1,313	1,213	100	1,313
July	1,433	1,333	100	1,433
August	1,433	1,333	100	1,433
September	1,313	1,213	100	1,313
October	1,075	775	300	1,075
November	716	416	300	716
December	597	497	100	597
Total	11,940	10,240	2,000	11,940

^a Dry year water demand (2035) as presented in the City of Benicia 2010 UWMP.

^b SID supply is not limited on a monthly basis, but it is restricted to an annual maximum of 2,000 AF

The NBA Capacity for Benicia during January 15 to March 30 is 10.2 cfs or (606 AF/month). Based on the capacity restriction and the analysis presented in Table 5-12, the City of Benicia has adequate capacity in the NBA to meet its Dry Year water demand during Longfin Smelt Restrictions.

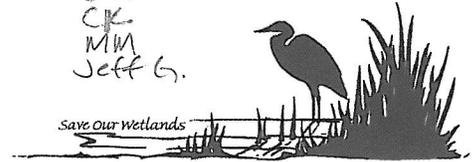
RAW WATER SUPPLY TRANSMISSION SYSTEM

The raw water supply transmission system from the Cordelia Forebay and/or the Terminal Reservoir is currently in good shape and is not in need of major improvements. The primary concerns are with the corrosion protection of the transmission pipeline and the reliance on a single 36-inch raw water transmission pipeline to supply raw water to the water treatment plant.

Law Office of Jack Silver

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scan + email to
Council
CM
CJ
MM
Jeff G.



Via Certified Mail - Return Receipt Requested

June 4, 2012

Gerald Gall, Superintendent
or Head of Operations
City of Benicia Wastewater Treatment Plant
614 E 5th St.
Benicia, CA 94510

Office of the City Council
City of Benicia
250 East L Street
Benicia, CA 94510

Re: Notice of Violations and Intent to File Suit Under the Clean Water Act

Dear Mr. Gall, Head of Operations and City Council:

The Clean Water Act ("CWA" or the "Act") § 505(b) requires that 60 days prior to the initiation of a civil action under CWA § 505(a), 33 U.S.C. § 1365(a), a citizen must give notice of the intent to sue to the alleged violator, the Environmental Protection Agency ("EPA") and the State in which the violations occur.

Northern California River Watch ("River Watch") hereby places the City of Benicia, hereinafter referred to as "the Discharger" on notice, that following the expiration of 60 days from the date of this NOTICE, River Watch intends to bring suit in the United States District Court against the Discharger for continuing violations of an effluent standard or limitation, permit condition or requirement, a Federal or State Order or Permit issued under CWA § 301(a), in particular, but not limited to CWA § 505(a)(1), 33 U.S.C. § 1365(a)(1), the Code of Federal Regulations, and the Regional Water Quality Control Board - San Francisco Bay Region, Region Water Quality Control Plan ("Basin Plan") as exemplified by violations of permit conditions or limitations in the Discharger's National Pollutant Discharge Elimination System ("NPDES") Permit.

INTRODUCTION

The CWA regulates the discharge of pollutants into navigable waters. The statute is structured in such a way that all discharge of pollutants is prohibited with the exception of enumerated statutory exceptions. One such exception authorizes a polluter, who has been issued a permit pursuant to CWA § 402, to discharge designated pollutants at certain levels subject to certain conditions. The effluent discharge standards or limitations specified in a NPDES permit define the scope of the authorized exception to the CWA § 301(a), 33 U.S.C. § 1311(a) prohibition, such that violation of a permit limit places a polluter in violation of the CWA. Private parties may bring citizens' suits pursuant to 33 U.S.C. § 1365 to enforce effluent standards or limitations, which are defined as including violations of 33 U.S.C. § 1311(a) and 33 U.S.C. § 1365(f)(1).

The CWA provides that authority to administer the NPDES permitting system in any given state or region can be delegated by the EPA to a state or to a regional regulatory agency, provided that the applicable state or regional regulatory scheme under which the local agency operates satisfies certain criteria. See 33 U.S.C. § 1342(b). In California, the EPA has granted authorization to a state regulatory apparatus comprised of the State Water Resources Control Board and several subsidiary regional water quality control boards to issue NPDES permits. The entity responsible for issuing NPDES permits and otherwise regulating discharges in the region at issue in this NOTICE is the Regional Water Quality Control Board, San Francisco Bay Region ("RWQCB").

The CWA requires that any Notice regarding an alleged violation of an effluent standard or limitation of an order with respect thereto, shall include sufficient information to permit the recipient to identify the following:

1. *The specific standard, limitation, or order alleged to have been violated.*

To comply with this requirement River Watch has identified in this NOTICE the NPDES Permit for the Benicia Wastewater Treatment Plant, and has specifically identified the applicable permit standard, limitation or condition being violated. A violation of the NPDES Permit is a violation of the CWA.

2. *The activity alleged to constitute a violation.*

Most often the NPDES Permit limitations being violated are self-explanatory and an examination of its language is sufficient to inform the Discharger, especially since the Discharger is responsible for complying with that Permit condition. In addition, River Watch has set forth narratives in this NOTICE describing with particularity the activities leading to violations and has incorporated by reference the Discharger's own records and other public documents in the Discharger's possession or otherwise available to the

Discharger regarding its NPDES Permit, compliance with that Permit and any other information designed to inform the Discharger or the public.

3. *The person or persons responsible for the alleged violation.*

The person or persons responsible for the alleged violations identified in this NOTICE are the City of Benicia as owner and operator of the Benicia Wastewater Treatment Plant, identified as the Discharger, and those of its employees responsible for compliance with the NPDES Permit.

4. *The location of the alleged violation*

The location or locations of the various violations are identified in the Discharger's NPDES Permit and also in records created and/or maintained by or for the Discharger which relate to the Benicia Wastewater Treatment Plant and related activities as further described in this NOTICE.

5. *The date or dates of violation or a reasonable range of dates during which the alleged activity occurred.*

River Watch has examined both RWQCB files and the Discharger's records for the period from June 1, 2007 through June 1, 2012. The range of dates covered by this NOTICE is from June 1, 2007 through June 1, 2012. River Watch will from time to time update this NOTICE to include all violations of the CWA by the Discharger which occur after the range of dates currently covered by this NOTICE. Some of the violations are continuous and therefore each day constitutes a violation.

6. *The full name, address, and telephone number of the person giving notice.*

The person giving notice is Law Office of Jack Silver on behalf of Northern California River Watch, referred to in this NOTICE as "River Watch." River Watch is a non-profit corporation dedicated to the protection and enhancement of the waters of the State of California including all rivers, creeks, streams, and groundwater in Northern California. River Watch is organized under the laws of the State of California and located at P.O. Box 817, Sebastopol, CA 95472. The full name, address, and telephone number of the Law Office of Jack Silver appears in the Contact Information section below.

THE DISCHARGER'S OPERATION

The Discharger owns and operates the City of Benicia Wastewater Treatment Plant (the "Plant"), a secondary wastewater treatment plant, and its collection system (collectively considered "The Facility"). The discharge of treated wastewater from the Facility is currently

regulated under Order No. R2-2008-0014, NPDES Permit No. CA 0038091. The prior NPDES Permit was Order No. R2-2001-096, NPDES Permit No. CA 0038091.

The Discharger provides sewerage service to a population of approximately 28,000 individuals through 26 lift stations and 148 miles of pipeline. The Facility has a current dry weather design treatment capacity of 4.5 MGD, a peak one hour wet weather secondary treatment capacity of 18 MGD, and a maximum short term hydraulic capacity of 24 MGD. The Facility provides secondary treatment of wastewater from domestic, commercial and industrial sources within the City of Benicia. The wastewater treatment process includes influent screening and grinding, grit removal basins, primary clarifiers, secondary treatment via two parallel activated sludge basins or three parallel trains of rotating biological contactors (RBCs), followed by secondary clarification, chlorination and dechlorination.

Treated wastewater is discharged from Discharge Point 001 through a submerged diffuser to the Carquinez Strait, a water of the United States. The diffuser is south of the Facility approximately 500 feet offshore and at a water depth of 10 feet.

The Discharger's ageing wastewater collection system has historically experienced high inflow and infiltration (I/I) during wet weather. The structural defects in the collection system which allow I/I into the sewer lines, result in sewage system surface overflows (SSO) and exfiltration. Overflows caused by blockages and I/I result in the discharge of raw sewage into gutters, canals, and storm drains which are connected to adjacent surface waters – all waters of the United States. Exfiltration is the subsurface release of raw sewage that travels subsurface to a surface water often via hydrologically connected ground waters. Exfiltration occurs on a continual basis and is evidenced by human markers. As recorded in California Integrated Water Quality System's ("CIWQS") Public SSO reports, the Discharger reported 74 SSOs between May of 2007 and April 2012, with a combined volume of 26,320 gallons. Benicia claims 13,276 gallons reached surface waters. On November 11, 2011 Benicia reported a volume of 2,250 gallons of untreated waste water from a city-owned water main at 125 East N Street, all 2,250 gallons of which reached the Carquinez Strait. (reported in CIWQS as "Carquinez Strait").

The Discharger has a history of non-compliance with the SSO reporting requirements of the Statewide General Requirements for Sanitary Sewer Systems, Waste Discharge Requirements ("WDR") Order No. 2006-0003-DWQ, governing the operation of sanitary sewer systems. The Discharger is a permittee under the Statewide WDR which requires that sewer system operators report SSOs to the CIWQS, including an estimate of the volume of any spill, the volume recovered and the volume which reached a surface water. The Discharger's field reports regularly underestimate the SSO start time as well as the response time. In some cases, records indicate crews arriving within minutes of a reported spill. These equivalencies are highly unlikely and result in an under estimation of the duration and volume of the spill. In reporting a 509 gallon spill from November 6, 2010, where the

estimated start, notification, and end time are the same (09:00:00), the reporter admits, “It is our assumption that an unknown amount of sewage did migrate into the surface waters due to the high tide intervals ... we entered an arbitrary number of 1 because this system does not allow an unknown of 0 to be entered.” Also, the Discharger’s SSO records generally do not indicate what method was used to estimate the total volume of the spill, which also calls into question the estimates of volume recovered and volume which reaches a surface water.

As noted above, underground leakages, i.e. exfiltration, caused by pipeline cracks and other structural defects result in discharges to adjacent surface waters via underground hydrological connections. Studies tracing human markers specific to the human digestive system in surface waters adjacent to defective sewer lines have verified the contamination of the adjacent waters with untreated sewage. River Watch alleges that such discharges are continuous wherever ageing, damaged, structurally defective sewer lines in the Discharger’s collection system are located adjacent to surface waters, such as Carquinez Strait. Surface waters and groundwater become contaminated with fecal coliform, exposing people to human pathogens. The Discharger’s chronic collection system failures pose a substantial threat to public health.

The discharges described herein constitute a nuisance, and are either: injurious to health; indecent or offensive to the senses; or, an obstruction to the free use of property; and, occur during, or as a result of, the transportation, disposal, or treatment of wastes.

The Discharger’s illegal discharge of untreated wastewater exceeding Basin Plan standards is a significant contribution to the degradation of the Carquinez Strait, Suisun Bay, and tributary waters, with adverse effects on beneficial uses of those waters. River Watch members residing or recreating in the area have a vital interest in bringing the Discharger’s operations at the Plant and Facility into compliance with the CWA.

REMEDIAL MEASURES REQUESTED

River Watch believes the following remedial measures are necessary to bring the Discharger into compliance with its NPDES permit and the Basin Plan, and to prioritize remedial measures to reflect the biological impacts of the Discharger’s ongoing non-compliance:

1. A reduction of collection system I/I through an aggressive collection system management, operation and maintenance (“CMOM”) program, with clear time lines for prioritized repairs. The CMOM program shall include:

- a. Completion of a Condition Assessment of sewer lines in the Discharger's collection system located within 200 feet of surface waters, including storm drainage channels and creeks,
 - b. The amendment of the Discharger's Sewer System Management Plan to specify that defective gravity sewer lines located within 200 feet of surface waters, including storm drainage channels and creeks, will be given a higher priority for repair and/or replacement than other sewer lines with comparable defects located more than 200 feet from surface waters;
 - c. Within two (2) years after completion of the Condition Assessment described in 1.a. above, the repair or replacement as needed of all sewer lines determined by the Condition Assessment to be significantly defective, defined as a reasonable likelihood to discharge untreated sewage to the nearby creek or drainage channel within five (5) years, using industry recognized Guidelines to assess severity of defects.
 - d. As an alternative to the requirement to repair all sewer lines determined to be significantly defective under section 1.c. above, the funding of human marker studies of all creeks within 200 feet of a significantly defective sewer line and creeks which are the receiving water into which a drainage channel within 200 feet of a significantly defective sewer line discharges. Where any such creek tests positive for a human marker such as caffeine, said creek will also be tested to determine whether the sewage contamination impairs the beneficial uses of said creek, based on the Basin Plan criteria for bacteria, bioaccumulation, dissolved oxygen and toxicity.
 - e. The studies described in this section shall be performed by water quality expert and private consultant Dr. Michael L. Johnson, former faculty member at the Center for Watershed Sciences at U.C. Davis, or by a water quality expert of comparable status and experience agreeable to both parties.
 - f. The provision of funding in the Discharger's Capitol Improvements Plan to CCTV all gravity sewer lines every ten (10) years, except for lines CCTV'd within the prior ten (10) years and lines constructed, replaced or repaired within the prior twenty (20) years.
2. A mandatory private sewer lateral inspection and repair program triggered by any of the following events:
 - a. Transfer of ownership of the property if no inspection/replacement of the sewer lateral occurred within twenty (20) years prior to the transfer;

- b. The occurrence of two (2) or more SSOs caused by the private sewer lateral within two (2) years;
 - c. A change of the use of the structure served (1) from residential to non-residential uses, (2) to a non-residential use that will result in a higher flow than the current non-residential use, and (3) to non-residential uses where the structure served has been vacant or unoccupied for more than three (3) years;
 - d. Upon replacement or repair of any part of the sewer lateral;
 - e. Upon issuance of a building permit with a valuation of \$25,000.00 or more;
 - f. Upon significant repair or replacement of the main sewer line to which the lateral is attached.
3. Compliance with monitoring and reporting requirements, especially regarding all overflows which reach storm drains or discharge directly to state waters, including a more detailed account of SSOs and remedial actions to verify and document SSO start times, durations, volumes, volumes recovered, volumes reaching surface waters and remedial actions.
4. Creation of a web site capacity to track information regarding SSOs. In the alternative, a link from the Discharger's web site to the CIWQS Public SSO Reports. Provision of notification to all customers and other members of the public of the existence of the web based program, including a commitment to respond to private parties submitting overflow reports.

VIOLATIONS

From June 1, 2007 through June 1, 2012, the Discharger has violated the requirements of its NPDES Permit, the Basin Plan and the Code of Federal Regulations as those requirements are referenced in the Discharger's NPDES Permit with respect to the Benicia Wastewater Treatment Plant. Said violations are evidenced and reported in the Discharger's Self Monitoring Reports, testing data compiled in compliance with the Permit or other orders of the RWQCB, and other documentation filed with the RWQCB or in the Discharger's possession, and as evidenced by unpermitted discharges due to failures in the Discharger's collection system. Furthermore, these violations are continuing. The violations, established in Self Monitoring Reports, raw data and records of the RWQCB, SWRCB's CIWQS SSO Reporting Program Database Records include but are not limited to the following categories in the NPDES Permit:

Discharge Prohibitions

<u>Violations</u>	<u>Description</u>
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1800

Collection system overflows caused by underground exfiltration – an event in which untreated sewage is discharged from the collection system prior to reaching the Plant. Underground discharges are alleged to have been continuous throughout the 5 year period from June 1, 2007 through June 1, 2012.

Order No. R2-2001-096, Discharge Prohibitions A.5: “Discharges of water, materials, or wastes other than storm water, which are not otherwise authorized by an NPDES permit, to a storm drain system or waters of the State are prohibited.”

Order No. R2-2008-0014, Discharge Prohibitions III.E: “(No sanitary sewer overflows to waters of the United States): Discharge Prohibition No. 15 from Table 4-1 of the Basin Plan and the Clean Water Act prohibit the discharge of wastewater to surface waters except as authorized under an NPDES permit. POTWs must achieve secondary treatment, at a minimum, and any more stringent limitations necessary to achieve water quality standards. [33 U.S.C. § 1311 (b)(1)(B and C)]. Therefore, a sanitary sewer overflow that results in the discharge of raw sewage, or sewage not meeting secondary treatment requirements is prohibited under the Clean Water Act and the Basin Plan.”

Evidence to support the allegation of underground discharge of raw sewage exists in the Discharger’s own mass balance data regarding the number of connections in the service area, estimates of average daily volume of wastewater per connection, influent flow volumes to the Plant reported in Self Monitoring Reports, video inspection of the collection system, and testing of waterways adjacent to sewer lines, creeks, and wetlands for human markers, nutrients, pathogens and other constituents indicating sewage contamination.

74

SSOs, as evidenced in the CIWQS Interactive Public SSO Reports, including the reports discussed above. Also, unrecorded surface overflows witnessed by local residents.

Order No. R2-2001-096, Discharge Prohibitions A.5: “Discharges of water, materials, or wastes other than storm water, which are not otherwise authorized by an NPDES permit, to a storm drain system or waters of the State are prohibited.”

Order No. R2-2008-0014, Discharge Prohibitions III.E: “(No sanitary sewer overflows to waters of the United States): Discharge Prohibition No. 15 from Table 4-1 of the Basin Plan and the Clean Water Act prohibit the discharge of wastewater to surface waters except as authorized under an NPDES permit. POTWs must achieve secondary treatment, at a minimum, and any more stringent limitations necessary to achieve water quality standards. [33 U.S.C. § 1311 (b)(1)(B and C)]. Therefore, a sanitary sewer overflow that results in the discharge of raw sewage, or sewage not meeting secondary treatment requirements is prohibited under the Clean Water Act and the Basin Plan.”

Monitoring Requirements

Violations	Description
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1800	Failure to monitor, report or adequately describe violations. The majority of these violations occur due to failure to report violations of Discharge Prohibitions A.5 of Order No. R2-2001-096, failure to report violations of Discharge Prohibitions III.E of Order No. R2-2010-0014, as well as failure to adequately describe reported violations of said provisions.
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CONTACT INFORMATION

River Watch has retained legal counsel with respect to the issues set forth in this NOTICE. All communications should be addressed to:

Jack Silver, Esquire
Law Offices of Jack Silver
P.O. Box 5469
Santa Rosa, CA 95402-5469
Tel. 707-528-8175
Fax. 707-528-8675

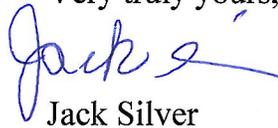
CONCLUSION

The violations as set forth in this NOTICE effect the health and enjoyment of members of River Watch who reside and recreate in the affected communities. Members of River Watch use the affected watershed for domestic water supply, agricultural water supply, recreation, sports, fishing, swimming, hiking, photography, nature walks and the like. Their health, use and enjoyment of this natural resource is specifically impaired by the Discharger’s violations of the CWA as set forth in this NOTICE.

River Watch believes this NOTICE sufficiently states grounds for filing suit. At the close of the 60-day notice period or shortly thereafter River Watch intends to file a citizen's suit under CWA § 505(a) against the Discharger for the violations alleged in this Notice.

During the 60-day notice period, however, River Watch is willing to discuss effective remedies for the violations referenced in this Notice. If the Discharger wishes to pursue such discussions in the absence of litigation, it is encouraged to initiate such discussions immediately so that the parties might be on track to resolving the issues raised in this NOTICE before the end of the notice period. River Watch will not delay the filing of a lawsuit if discussions have not commenced by the time the 60-day notice period ends.

Very truly yours,



Jack Silver

JS:lh

cc: Administrator
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Mail Code 3213A
Washington, D.C. 20460

Regional Administrator
U.S. Environmental Protection Agency Region 9
75 Hawthorne St.
San Francisco, CA 94105

Executive Director
State Water Resources Control Board
P.O. Box 100
Sacramento, California 95812-100

Heather McLaughlin
City Attorney
City of Benicia
250 East L Street
Benicia, CA 94510

MEMORANDUM

TO: Heather McLaughlin, City Attorney
City of Benicia
250 East "L" Street
Benicia, CA 94510

FILE NO: 12109.0002

FROM: Michael G. Colantuono, Esq.
Jon R. di Cristina, Esq.

DATE: September 14, 2012

RE: Voting and Protest Procedures for Fees and Assessments Under
Proposition 218

INTRODUCTION AND SUMMARY. As you asked, we write to describe the voting and protest procedures for fees and assessments under Proposition 218. In general, fees are subject to a majority protest (rather than an election) in which one protest may be counted per parcel. Assessments, however, are subject to an "assessment protest proceeding" conducted more like an election. In this proceeding, ballots are mailed to record property owners, and only ballots returned affect the outcome. We also include a brief description of voting requirements for special and general taxes, which require approval by registered voters.

FEEES. Every fee must survive a majority protest hearing at which the owners (or in some cases, tenants) of affected parcels may submit written protests. Each parcel is allowed one protest, submitted by an owner or tenant. Cal. Const. Art. XIII D, § 6, subd. (a); Gov. Code, § 53755(b). Silence amounts to consent, so a parcel for which no protest is cast weighs in favor of the proposed fee. To defeat a proposed fee, protests must be submitted with respect to 50% plus one of the affected parcels. Cal. Const., art. XIII D, § 6, subd. (a)(2). As majority participation in public affairs is rare, much less participation in writing in a 45-day period, majority protests are rare except in very small districts.

As to a fee for sewer, water, or refuse collection services, this opportunity for protest is all that is required. Other fees, however, must also be approved in an election among either (i) a majority of the affected parcel owners, apparently voting one vote per parcel or (ii) two-thirds of registered voters living in the affected area. Cal. Const., art. XIII D, § 6, subd. (c). Such elections have been commonly held for water quality and flood control fees but are otherwise rare.

ASSESSMENTS. To approve an assessment, the City must mail a ballot to the owner of each affected parcel. Cal. Const., art. XIII D, § 4, subd. (d); Government Code § 53753. Ballots returned by owners (and, in some cases, tenants) are counted at a public hearing, with ballots weighted according to each parcel's proportional financial obligation. The assessment fails if ballots opposed to it outweigh ballots in favor of it. Cal. Const., § 4(e).

Thus, fees are typically within an agency's power to approve as majority protests are rare, but assessments turn on the outcome of an election among those who will pay them.

SPECIAL AND GENERAL TAXES. To impose a special tax, the City must gain approval of two-thirds of the voters in the district in which the tax will apply (which is typically city-wide). Cal. Const., art. XIII C, § 2, subd. (d) (Proposition 218); Gov. Code, § 53722 (Proposition 62). There are no timing requirements for an election that includes a special tax.

General taxes must be approved by a simple majority of voters. A general tax must be considered at a regularly scheduled election in which City Council seats are contested unless the City Council declares by a unanimous vote of those present that a fiscal emergency justifies a special election. Cal. Const., art. XIII C, § 2, subd. (b) (Proposition 218); Gov. Code, § 53723 (Proposition 62).

Thank you for the opportunity to assist. If we can provide any further assistance, please do not hesitate to contact Michael at (530) 432-7359 or MColantuono@CLLAW.US or Jon at (530) 798-2991 or JdiCristina@CLLAW.US.

**NOTICE OF PUBLIC HEARING ON
PROPOSED INCREASES
TO WATER AND SEWER RATES**

DATE: December 4, 2012

TIME: 7:00 p.m.

PLACE: Council Chamber, City Hall, 250 East L Street, Benicia

After providing a 45-day public notice, the City Council of the City of Benicia will be considering a recommendation from City staff to adopt increases to the water and sewer rates. The City Council will hold a public hearing to consider this matter as part of the City Council meeting on Tuesday December 4, 2012 at the City Council Chamber, City Hall, 250 East L Street, Benicia. The hearing will start at 7:00 p.m. or later. The new rates, if adopted, will go into effect on or after January 1, 2013. Proposition 218 requires that property owners be given the right to protest increases in water and sewer rate charges. You are receiving this notice because you own property that is receiving City of Benicia water and sewer service.

BACKGROUND:

After well over a year of review by independent financial and technical experts, and after extensive public dialogue, the City of Benicia is recommending rate increases to ensure the health and safety of the community and to protect the City's financial health.

Our underground water and sewer infrastructure is old – including aging clay and asbestos cement pipes, and other deteriorating infrastructure that dates back to the 1930's. Benicia's plants have important monitoring equipment, pumps, and other infrastructure that cannot be easily repaired due to their age, and must be upgraded to:

- Ensure clean, safe drinking water for our residents and businesses
- Have a secure, adequate water supply in the event of an earthquake, fire, or catastrophe emergency
- Prevent sewage spills that present a health risk to the community, place the City at risk for regulatory fines and lawsuits, and pollute the Carquinez Strait

Rising waste disposal costs and evolving state and federal regulations also impact our aging water and sewer systems. Benicia must stay in compliance with all required mandates or face costly fines or environmental lawsuits.

The last time water and sewer rates were increased was 6 years ago. Only the most essential projects required to ensure continued safe service are included in the proposed rate increases.

WHAT IS THE CITY DOING TO CONTROL SPENDING:

Controlling labor and benefit costs: In 2010 and 2011, all City of Benicia employees, including those funded by the water and sewer enterprise funds took a combined reduction in total compensation of approximately 10%. These concessions assisted the City in addressing budget shortfalls in both fiscal years and achieving ongoing structural savings for both the General Fund and Enterprise Funds.

Reducing energy costs: Operating the Sewer and Water Treatment Plants are expensive. The City has used the Solar Project to install solar panels to offset the costs of operating pump stations and buildings to reduce energy costs for the water enterprise fund.

EXPLANATION OF RATE INCREASES:

If adopted, the proposed water and sewer increases will be implemented over the next five (5) years. The proposed water and sewer rates are presented in the tables on the following pages. The amount of both your water and sewer utility bill will depend on your customer class (residential rates are different from commercial rates, for example) and the amount of water you use.

The proposed increases will help the City provide reliable and safe water and sewer services. The City’s water and sewer divisions rely almost entirely on customer revenues to provide these services. No local, state, or federal taxes offset the cost of these services.

The proposed rate increases generate only the estimated revenue needed to cover actual costs of continued safe water and sewer service.

HOW TO PROTEST THE RATE INCREASE:

Please note that if you wish to protest the proposed rate increases you must follow the process outlined here. If you wish to oppose the proposed rate increases, you must submit a written protest to be considered, even if you plan to attend the public hearing. If written protests are submitted by a majority of the affected property owners (50% plus one), the proposed rate increases will not be imposed. Your written protest must be received (not postmarked) by the City Clerk prior to the close of the public hearing on December 4, 2012. Written protests may be filed by US Mail or hand-delivered to the City Clerk. **EMAIL PROTESTS WILL NOT BE ACCEPTED.** Written protests must contain (1) a description of the property, such as the Solano County Assessor’s Parcel Number (APN) or address; (2) the water/sewer account number; (3) the property owner(s) name; and (4) whether the protest is in opposition to the water rate increase, the sewer rate increase or both. The protest must also be signed by either the property owner of record or the water/sewer service customer of record. Only one protest for each property will be counted. In the event that a property owner and a customer both submit protests, the property owner’s protest will be counted. Property owners receiving this notice will find their APN on the mailing label for this notice. Please send or deliver your written protest to the City Clerk at City Hall, 250 East L Street, Benicia.

Hearing Process: Any interested person, including persons owning or residing at property served by the City’s water or sewer system, may present verbal or written comment to the City Council on the proposed rate increases. Although the City Council will consider all comments, State law provides that only the written protests of property owners or customers may be counted to determine whether a majority protest to the proposed increases exists. If, at the conclusion of the public hearing, a majority protest does not exist, the City Council will consider adoption of the proposed increases. Please note that the actual rates and charges adopted by the City Council may be less than, but not more than, the proposed rate increases identified in this Proposition 218 notice.

The proposed water and sewer rates for the next five (5) years are shown in the following tables:

Proposed Sewer Rates						
Fiscal Year	Current	Proposed				
	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>
Monthly Rate per EDU (1)	\$41.33	\$45.88	\$50.01	\$53.26	\$55.39	\$56.49
Recommended Change	0.0%	11.0%	9.0%	6.5%	4.0%	2.0%
Dollar Increase per month		\$4.55	\$4.13	\$3.25	\$2.13	\$1.11
(1) EDU = equivalent dwelling unit						

Proposed Water Rates							
		Current	Proposed Rates (per month)				
		2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
			7%	12.9%	11.5%	6.8%	3.5%
Residential Rates							
Service Charge per meter	Single family	\$13.80	\$14.77	\$16.68	\$18.60	\$19.86	\$20.56
	Multi- family unit	\$10.36	\$11.09	\$12.52	\$13.96	\$14.91	\$15.43
Volume Charge per hcf (2)	0 - 8 hcf	\$1.37	\$1.46	\$1.65	\$1.84	\$1.97	\$2.04
	8 - 30 hcf	\$2.15	\$2.30	\$2.60	\$2.90	\$3.10	\$3.21
	Over 30 hcf	\$2.30	\$2.46	\$2.78	\$3.10	\$3.31	\$3.43
Commercial / Industrial / Irrigation / Municipal Rates							
Service Charge per meter	5/8 - 3/4"	\$17.83	\$19.08	\$21.54	\$24.02	\$25.65	\$26.55
	1"	\$31.68	\$33.90	\$38.27	\$42.67	\$45.57	\$47.16
	1½"	\$71.25	\$76.24	\$86.07	\$95.97	\$102.50	\$106.09
	2"	\$126.64	\$135.50	\$152.98	\$170.57	\$182.17	\$188.55
	3"	\$284.90	\$304.85	\$344.18	\$383.76	\$409.86	\$424.21
	4"	\$506.48	\$541.93	\$611.84	\$682.20	\$728.59	\$754.09
	6"	\$1,139.56	\$1,219.32	\$1,376.61	\$1,534.92	\$1,639.29	\$1,696.67
Volume Charge per hcf	0 - 30 hcf	\$1.86	\$1.99	\$2.25	\$2.51	\$2.68	\$2.77
	Over 30 hcf	\$2.18	\$2.33	\$2.63	\$2.93	\$3.13	\$3.24
Automatic Sprinkler & Private Fire Hydrant Rates							
Flat Rate per meter	2"	\$9.37	\$10.03	\$11.32	\$12.62	\$13.48	\$13.95
	4"	\$16.40	\$17.55	\$19.81	\$22.09	\$23.59	\$24.42
	6"	\$23.21	\$24.84	\$28.04	\$31.26	\$33.39	\$34.56
	8"	\$30.42	\$32.55	\$36.75	\$40.98	\$43.77	\$45.30
	10"	\$37.39	\$40.01	\$45.17	\$50.36	\$53.78	\$55.66
	12"	\$44.40	\$47.51	\$53.64	\$59.81	\$63.88	\$66.12
Fire Hydrants	Double outlet & steame	\$11.71	\$12.53	\$14.15	\$15.78	\$16.85	\$17.44
	Single outlet & wharf	\$3.52	\$3.77	\$4.26	\$4.75	\$5.07	\$5.25
Untreated Water Rates							
Minimum Charge per meter	2"	\$23.38	\$25.02	\$28.25	\$31.50	\$33.64	\$34.82
	3"	\$46.75	\$50.03	\$56.48	\$62.98	\$67.26	\$69.61
	4"	\$70.10	\$75.00	\$84.68	\$94.42	\$100.84	\$104.37
	6"	\$140.17	\$149.98	\$169.33	\$188.80	\$201.64	\$208.70
Volume Charge per hcf	0 - 150 hcf	\$0.84	\$0.90	\$1.02	\$1.14	\$1.22	\$1.26
	Over 150 hcf	by agmt	by agmt	by agmt	by agmt	by agmt	by agmt
(1) Customers are billed on a bi-monthly basis. The rates above are per month.							
(2) hcf = one hundred cubic feet = 748 gallons							

FREQUENTLY ASKED QUESTIONS:

Q: Why should I care?

A: The quality, safety, and security of our local water supply and the proper maintenance of our sewer system is essential to our community's health, safety, and financial integrity. Our local water supply must be properly maintained and protected to ensure clean, safe drinking water and secure, adequate water capacity in the event of a major earthquake, fire, or catastrophic emergency. Our sewer system must be properly maintained in order to prevent sewage waste spills that present a health risk to residents and businesses and can damage the Carquinez Strait.

Q: What's the issue?

A: Our underground water and sewer infrastructure is old – our system includes aging clay pipes, asbestos cement pipes, and other deteriorating infrastructure that dates back to the early 1930's. If a major earthquake struck, we could be in jeopardy of losing access to our main water source. Additionally, our plants have infrastructure that cannot be easily repaired, due to age of materials, and must be upgraded to ensure safety.

Q: How does this affect health and safety?

We must treat and purify our water and sewer. If raw sewage spills onto land or into water, it can present a health risk to our community and damage the Strait. The City must also have a secure, adequate water supply, in the case of an emergency or fire.

Q: Why isn't there enough money?

A: Federal and State Water Quality standards and requirements have continued to become more stringent to protect public health. Benicia has no choice but to legally comply. Chemical costs to properly treat drinking water have risen substantially. Disposal of sludge and solids at the landfill has risen 4-5 times in cost over the last 5 years, as has the required regulatory safety testing of those byproducts. Benicia's rates are currently at or below the rates of other cities in our region and must be updated.

Q: Why now?

A: Our water and sewer reserve funds will be completely depleted by July 2014. Unless we act, the general fund used for other critical community services such as police protection will be impacted. Additionally, Standard and Poor's has already downgraded the City's credit rating specifically because the Water and Sewer Funds are not generating enough revenue. An independent auditor has informed the City that rate adjustments will be necessary to restore its credit rating.

Q: How does this impact businesses and economic development?

A: Access to reliable water is essential to many of Benicia's key businesses. One day without access to water could cause massive economic impact – similar to the impact of a power outage. Additionally, an adequate water source is necessary for the attraction of new businesses into Benicia's Industrial Park and other areas.

Q: What is the basis for your recommendations?

A: Only projects absolutely necessary for continued safe service have been included in the proposed rate adjustments, which are on average approximately \$2.50 per month for water and approximately \$4.50 per month for sewer, beginning in January (for a single family residence).

Q: Where do I learn more?

A: Visit www.ci.benicia.ca.us, call 707-746-4380 or email WaterSewerQuestions@ci.benicia.ca.us.