

TOWN OF DISCOVERY BAY
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**TOWN OF DISCOVERY BAY
COMMUNITY SERVICES DISTRICT**

WATER AND WASTEWATER RATE STUDY

**Fiscal Years
2011/12 – 2012/13**

June 2011

**Hornberger Engineering
Campbell, California**

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Findings and Recommendations

Findings

1. The Town of Discovery Bay CSD's rates for water and wastewater service have been in effect since July 1, 2010. The Town would receive revenues of approximately \$4,793,000 from user charges, vacant parcel fees and miscellaneous revenues in fiscal year 2011/12 under the current fee schedules.
2. In July 2008 the Town initiated billing residential customers based on water meter readings. In 2010, 1,880 residential customers in the first eight phases of this program were billed for water on the basis of metered usage.
3. The Town's projected 2011/12 budget for water and wastewater operating expenses is \$4,032,000. This amount has increased by 9.2% from 2010/11 primarily due increases in general repairs, power and staff costs. The projected increase in operating expenses for 2012/13 is 3.2%.
4. The Town has identified \$3,480,000 in total capital costs for proposed projects in fiscal years 2011/12 and 2012/13. This amount includes \$840,000 for the water system and \$2,640,000 for the wastewater system. These projects will be financed on pay-as-you-go basis.
5. The Town has created four Infrastructure Replacement Funds to properly maintain the existing water and wastewater systems. The total annual replacement funding is \$384,000 in 2011/12 and \$ 400,000 in 2012/13.
6. The total revenue required to fund operating expenses, capital projects and replacements for the water system in fiscal years 2011/12 and 2012/13 is \$4,966,000. The total projected revenue from user charges, vacant parcel fees and miscellaneous revenues for that period is \$3,432,000, leaving a deficiency of \$1,534,000. This will require annual water rate increases of 27.4% in 2011/12 and 27.8% in 2012/13.
7. The total revenue required to fund operating expenses, capital projects and replacements for the wastewater system in fiscal years 2011/12 and 2012/13 is \$7,492,000. The total projected revenue from user charges, vacant parcel fees and miscellaneous revenues for

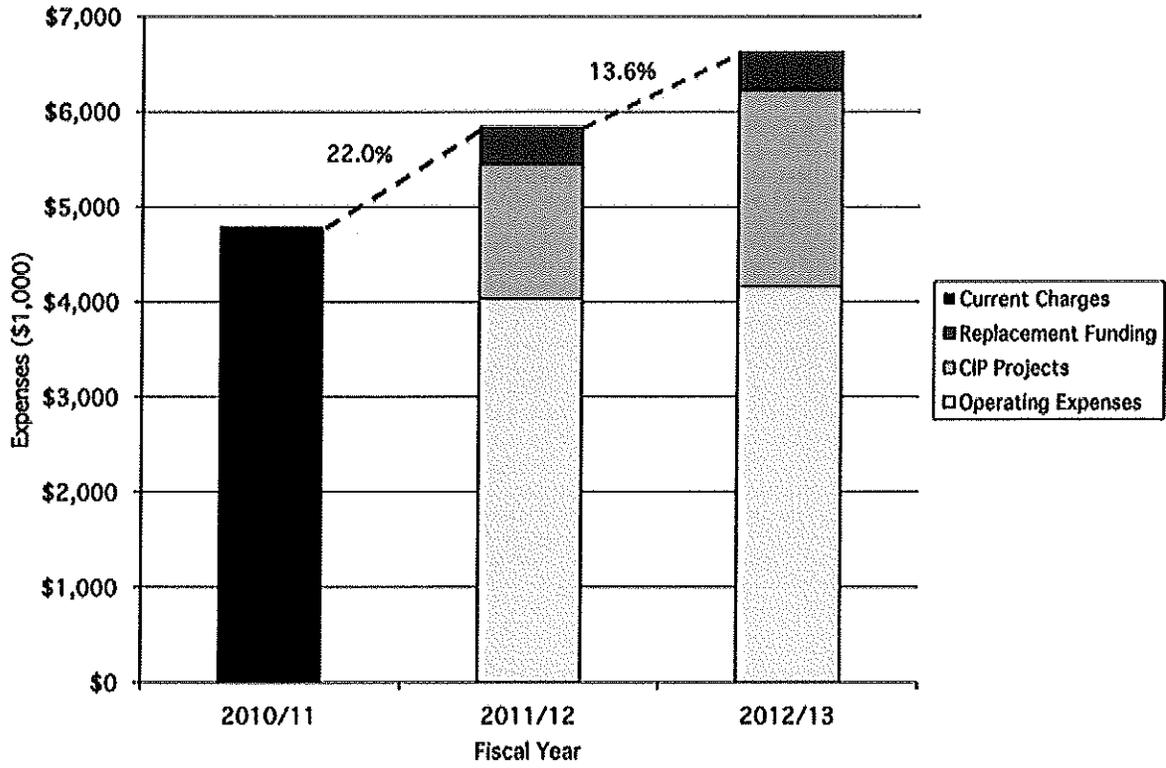
that period is \$6,152,000, leaving a deficiency of \$1,340,000. This will require annual wastewater rate increases of 18.9% in 2011/12 and 5.1% in 2012/13.

8. The overall rate increases required to fund operating expenses, capital projects and replacements of both systems are 22.0% in 2011/12 and 13.6% in 2012/13. The total revenue requirements are illustrated in Figure 1.

Recommendations

9. The Town should adopt the rate structures for its water and wastewater systems shown in Tables 1 and 2. These rates will be effective in fiscal years 2011/12 and 2012/13. They are proportional to the cost of providing service to the customers of both systems and fulfill the calculation requirements of Proposition 218. Additionally, the wastewater rates comply with the Revenue Program Guidelines issued by the California State Water Resources Control Board.
10. The Town should comply with the rate adoption provisions of Proposition 218. This requires a public hearing at which the Town Board of Directors will consider all protests against the rates. Notices of the public hearing must be mailed to all parcel owners at least 45 days in advance.
11. The water and wastewater rates should be reviewed on an annual basis and increased to provide funding for inflation, additional operating expenses, capital projects and replacements.

Figure 1
Total Revenue Requirements



**Table 1
Proposed Water Rates**

Residential Unmetered	Existing FY 2010/11		Proposed FY 2011/12		Proposed FY 2012/13	
	Monthly (\$/month/DU)	Yearly (\$/year/DU)	Monthly (\$/month/DU)	Yearly (\$/year/DU)	Monthly (\$/month/DU)	Yearly (\$/year/DU)
Parcel Size (Square Feet/DU)						
MF/Condos-No Irrigation (1)			\$15.52	\$186.24	\$20.32	\$243.84
Under 5,000	\$18.75	\$225.00	\$23.80	\$285.60	\$30.92	\$371.04
5,000 - 10,000	\$23.77	\$285.24	\$30.15	\$361.80	\$39.05	\$468.60
10,001 - 15,000	\$28.79	\$345.48	\$36.50	\$438.00	\$47.17	\$566.04
Over 15,000, Plus Each Additional 1,000	\$28.79 \$1.67	\$345.48 \$20.04	\$36.50 \$2.12	\$438.00 \$25.44	\$47.17 \$2.71	\$566.04 \$32.52
Residential Metered	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)
Account Charge: All	\$5.74		\$7.37		\$9.25	
Metered Usage Charge: All Usage		\$0.803		\$1.104		\$1.413
Nonresidential Metered	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)	Monthly (\$/month)	Use (\$/ccf)
Nonirrigation Account Charge:						
5/8" Inch Meter	\$5.49		\$7.07		\$8.95	
1 Inch Meter	\$5.74		\$7.37		\$9.25	
1 1/2 Inch Meter	\$5.98		\$7.66		\$9.56	
2 Inch Meter	\$6.66		\$8.48		\$10.41	
3 Inch Meter	\$11.61		\$14.46		\$16.63	
4 Inch Meter	\$13.45		\$16.68		\$18.93	
6 Inch Meter	\$17.73		\$21.86		\$24.30	
Irrigation Account Charge:						
5/8" Inch Meter	\$1.80		\$2.32		\$2.41	
1 Inch Meter	\$2.05		\$2.61		\$2.72	
1 1/2 Inch Meter	\$2.29		\$2.91		\$3.02	
2 Inch Meter	\$2.97		\$3.72		\$3.87	
3 Inch Meter	\$7.92		\$9.71		\$10.09	
4 Inch Meter	\$9.76		\$11.93		\$12.39	
6 Inch Meter	\$14.04		\$17.10		\$17.76	
Metered Usage Charge: All Usage		\$0.803		\$1.104		\$1.413

DU = Dwelling Unit
ccf = 100 cubic feet = 748 gallons
(1) Included with parcels under 5,000 square feet in 2010/11 rates.

**Table 2
Proposed Wastewater Rates**

Residential Unmetered	Existing FY 2010/11		Proposed FY 2011/12		Proposed FY 2012/13	
	Monthly (\$/month)	Yearly (\$/year)	Monthly (\$/month)	Yearly (\$/year)	Monthly (\$/month)	Yearly (\$/year)
Single Family - Each DU	\$44.38	\$532.56	\$53.02	\$636.24	\$55.78	\$669.36
Multiple Family/Condos - Each DU	\$33.29	\$399.48	\$39.76	\$477.12	\$41.83	\$501.96
Nonresidential Metered	Use (\$/ccf)		Use (\$/ccf)		Use (\$/ccf)	
Business/Government/Clubs	\$3.082		\$3.682		\$3.874	
Restaurants/Bars/Dining Facilities	\$9.048		\$10.783		\$11.344	
Schools	\$2.773		\$3.314		\$3.487	
Other Domestic Strength Users	\$3.082		\$3.682		\$3.874	

DU = Dwelling Unit
ccf = 100 cubic feet = 748 gallons

**Table 3
Total Residential Charges**

Type	Parcel Size (Square Feet)	Service	FY 2010/11	FY 2011/12		FY 2012/13	
			Yearly (\$/year)	Yearly (\$/year)	Increase (\$/year)	Yearly (\$/year)	Increase (\$/year)
Unmetered							
Single Family	Under 5,000	Water	\$225.00	\$285.60		\$371.04	
		Wastewater	\$532.56	\$636.24		\$669.36	
		Total	\$757.56	\$921.84	22%	\$1,040.40	13%
Single Family	5,000 - 10,000	Water	\$285.24	\$361.80		\$468.60	
		Wastewater	\$532.56	\$636.24		\$669.36	
		Total	\$817.80	\$998.04	22%	\$1,137.96	14%
Single Family	10,001 - 15,000	Water	\$345.48	\$438.00		\$566.04	
		Wastewater	\$532.56	\$636.24		\$669.36	
		Total	\$878.04	\$1,074.24	22%	\$1,235.40	15%
Multiple Family & Condominiums	Under 5,000	Water	\$225.00	\$285.60		\$371.04	
		Wastewater	\$399.48	\$477.12		\$501.96	
		Total	\$624.48	\$762.72	22%	\$873.00	14%
Multiple Family & Condominiums - No Irrigation	Under 5,000	Water	\$225.00	\$186.24		\$243.84	
		Wastewater	\$399.48	\$477.12		\$501.96	
		Total	\$624.48	\$663.36	6%	\$745.80	12%
Metered							
Single Family	18 ccf/month	Water	\$242.40	\$327.00		\$416.40	
		Wastewater	\$532.56	\$636.24		\$669.36	
		Total	\$774.96	\$963.24	24%	\$1,085.76	13%

Chapter 1 - Introduction

Purpose of Study

The Town of Discovery Bay CSD currently provides waster and wastewater services to 5,498 existing customers and 351 vacant lots within an unincorporated area of eastern Contra Costa County. It was formed as the Discovery Bay Community Services District on July 1, 1998 and assumed responsibility for those services upon the dissolution of County Sanitation District No. 19. The current name became effective on January 1, 2000.

The primary source of revenues for waster and wastewater services has been charges for both metered and unmetered customers that were adopted in July 2010. Vacant parcels are billed \$400 per year, which has not changed since 1998. Water billing methods for residential customers include a parcel size rate for unmetered customers and a uniform commodity rate for metered customers. Residential wastewater is billed on a classified dwelling unit flat rate basis. Nonresidential billings for both systems are based on metered use.

In 2008 the Town initiated a residential water meter program in response to California law requiring that all new homes be metered by January 2010. The remaining homes must be metered by 2024. Approximately 1,880 homes were billed on a metered basis in 2010/11.

The user charges must also comply with the provisions of Proposition 218, the "Right to Vote on Taxes Act." Article XIII D, Section 6, of this constitutional initiative sets forth the procedures for new or increased fees and charges. A fee rate calculation established that no property owner's fee is greater than the proportionate cost of the service attributable to the parcel. In addition, the wastewater rates comply with the Revenue Program Guidelines of the California State Water Resources Control Board.

The purpose of this study is to develop charges for the water and wastewater charges that recover the revenue requirements of both system for next two fiscal years, 2011/12 through 202/13. These requirements include operating expenses and funding for capital projects and replacements. A two-year rate model for the water and wastewater systems has been provided separately.

Town Facilities and Revenue Collection

The Town's water supply and distribution system includes five wells and approximately 30 miles of distribution lines. This system also includes two water treatment facilities. One treatment facility serves the customers in the original development and the second treatment facility serves the Discovery Bay West development and some adjacent customers.

The wastewater collection and treatment system includes a biological treatment facility, 13 lift stations and approximately 30 miles of lines. The treatment plant was expanded to serve the Discovery Bay West development.

Contra Costa County currently collects charges for unmetered customers and vacant parcels on the property tax bill. Revenues are deposited in an account held by the County with excess cash invested in a County pool. The Town maintains a secondary account at a local bank for small transactions. The Town bills metered customers directly for water and wastewater services. Residential customers are billed monthly and nonresidential customers are billed quarterly.

Chapter 2 - Customer Information

Parcels and Accounts

The total number of parcels and accounts in each classification for the water and wastewater systems are shown in Tables 4 and 5. These included the metered and unmetered residential customers, metered and unmetered nonresidential customers and vacant parcels. Unmetered and vacant parcels are billed on the tax roll. The Town bills metered customers directly. The totals in 2010/11 are shown with projections to the midpoint for each year in the study period. The residential water meter program includes 1,880 parcels in 2009/10. No additional homes will be metered during the study period. No growth in the customer base is projected for the study period.

Metered Residential Water Usage

The Town initiated the residential water meter program in April 2008. Customers in the Village 4, Lakes West, Lakes East, Lakeshore West, Lakeshore East, Village 1, Ravenswood and Centes areas are currently metered. Customers are provided with trial bills for three months before being billed on the basis of meter readings. Credits are provided at the initiation of metered billing for water charges that were previously billed on the tax roll in the current fiscal year.

The average metered usages for Phases 1-8 are shown in Table 6. The time frame is the 12-month period of April 2010 through March 2011, which excludes the trial periods for each phase. The data indicates that the average annual metered water use for residential customers varies from 15.0 ccf per month in Phase 1 to 20.3 ccf per month in Phase 7. A value of 18.0 ccf per month is used in this study to estimate the total water usage from metered customers.

Table 4
Total Parcels and Accounts – Water System

User Type	Classification	Fiscal Year		
		2009/10	2010/11	2011/12
	Residential Parcels			
Unmetered	Multiple Family/Condos - No Irrigation	174	174	174
	Under 5,000 Square Feet	137	137	137
	5,000 - 10,000 Square Feet	2,866	2,866	2,866
	10,001 - 15,000 Square Feet	307	307	307
	Over 15,000 Square Feet	28	28	28
	Additional 1,000 Square Feet	128	128	128
	Total Unmetered Parcels	3,512	3,512	3,512
Metered	Total Metered Parcels	1,880	1,880	1,880
Vacant Parcels	Empty Lots	59	59	59
	Vacant Lots/W&S Services	292	292	292
	Total Vacant Parcels	351	351	351
Total Residential		5,743	5,743	5,743
	Nonresidential Accounts			
Metered	Domestic	28	28	28
	Irrigation	67	67	67
Unmetered	LU/No meter	9	9	9
	Island on Lake	2	2	2
Total Nonresidential		106	106	106
Total Parcels and Accounts - Water System		5,849	5,849	5,849

Table 5

Total Parcels and Accounts – Wastewater System

User Type	Classification	Fiscal Year			
		2010/11	2011/12	2012/13	
Occupied	Residential Parcels				
	Single Family	5,167	5,167	5,167	
	Multiple Family/Condos	224	224	224	
	Total Occupied Parcels		5,391	5,391	5,391
Vacant Parcels	Empty Lots	59	59	59	
	Vacant Lots/W&S Services	292	292	292	
	Total Vacant Parcels		351	351	351
	Total Residential		5,742	5,742	5,742
Metered	Nonresidential Accounts				
	Businesses	18	18	18	
	Restaurants	8	8	8	
	Schools	2	2	2	
	Unmetered	Large Users	6	6	6
	Total Nonresidential		34	34	34
	Total Parcels and Accounts - Wastewater System		5,776	5,776	5,776

Table 6
Metered Residential Water Usage

Phase	Average Monthly Usage												Average Annual Usage (ccf/month)
	2010									2011			
	April (ccf)	May (ccf)	June (ccf)	July (ccf)	Aug. (ccf)	Sept. (ccf)	Oct. (ccf)	Nov. (ccf)	Dec. (ccf)	Jan. (ccf)	Feb. (ccf)	March (ccf)	
1 Village 4	11.9	17.7	17.5	23.4	23.1	23.8	14.7	11.5	8.7	8.4	8.5	9.1	15.0
2 Lakes West	21.1	19.7	23.5	27.9	27.6	25.7	17.0	19.3	11.5	10.5	10.2	12.1	18.8
3 Lakes East	13.8	22.1	25.7	27.6	27.4	26.3	19.6	13.9	10.5	10.2	10.0	10.7	18.2
4 Lakeshore West	16.5	18.5	25.9	28.0	28.1	26.4	17.7	13.5	9.6	9.2	9.0	9.4	17.6
5 Lakeshore East	13.1	21.9	25.5	29.7	27.9	28.2	18.2	13.4	10.2	9.1	9.3	9.8	18.1
6 Village 1	12.3	21.1	26.9	30.0	28.5	27.7	18.5	13.0	10.2	9.7	9.3	10.1	18.1
7 Ravenswood	16.6	24.2	30.5	32.7	38.4	30.9	18.6	13.4	8.9	8.7	9.9	10.1	20.3
8 Centex	11.2	20.2	24.2	27.2	25.4	24.9	17.3	12.1	10.3	10.3	9.9	10.0	16.9
Phases 1-8	14.6	20.8	25.5	28.6	28.3	26.8	17.9	13.9	10.2	9.7	9.6	10.3	18.0

Unmetered Residential Water Usage

Unmetered residential water usage is based on parcel size, divided into three tiers of 5,000 square foot increments. This method recognizes varying water use on small, medium and large parcels. An additional tier includes those multiple family and condo parcels that have no irrigation usage. The four-tier rate structure is shown in Table 7. Approximately 82% of unmetered parcels on the 2010/11 tax roll fall within the second tier. A parcel in this tier is established as one ERU (Equivalent Dwelling Unit) with a usage of 23 ccf per month, as calculated below. Usage by parcels in the first and third tiers is set at 75% and 125%, respectively, of one ERU. Parcels larger than 15,000 square feet are assigned usage of 0.083 ERUs per 1,000 square feet above that threshold. Starting in 2011/12, multiple family and condo parcels that have no irrigation are assigned usage equivalent to their wastewater discharge as shown in Table 12.

The total residential and unmetered nonresidential water ERUs for 2010 are shown in Table 8 and the calculation of water use per ERU shown in Table 9. This is based on the actual water production records for the year 2010. Metered residential and nonresidential usage in that year is deducted from total water production and divided by the total ERUs. The calculated value has been rounded to 23 ccf per month per ERU.

Table 7
Unmetered Residential Water Billing Method

Parcel Size (Square Feet)	Equivalent Residential Units (ERUs)	Water Use	
		ccf/month	gallons/day
Under 5,000	0.75	17.25	424
5,000 - 10,000	1.00	23.00	566
10,001 - 15,000	1.25	28.75	707
Each Additional 1,000	0.083	1.92	47
Multiple Family/Condos - No Irrigation	0.42	9.75	240

Table 8
2010 Water ERUs

Parcel Size (Square Feet)	Parcels	ERUs/ Parcel	Total ERUs
Residential			
Under 5,000	137	0.75	103
5,000 - 10,000	2,866	1.00	2,866
10,001 - 15,000	307	1.25	384
Over 15,000	28	1.25	35
Additional 1,000	128	0.083	11
MF/Condos - No Irrigation	174	0.42	73
Unmetered Nonresidential	13		37
Total ERUs			3,508

Table 9
Water Usage Calculation

Item	Water Use	Units
Total 2010 Water Production	1,199.00 1,602,941	MG/year ccf/year
Less: 2010 Nonresidential Metered Use	(199,771)	ccf/year
Less: 2010 Residential Metered Use	(424,914)	ccf/year
Unmetered Water Use	978,256	ccf/year
Water ERUs - Table 8	3,508	ERUs
Water Use per ERU	23.2	ccf/month
Assigned Use per ERU	23.0	ccf/month

Metered Nonresidential Water and Wastewater Usage

The projected water usage for metered nonresidential customers is based actual 2010 billings prepared by the Town staff. Wastewater usage is also assigned to strength classifications. Irrigation meters are only billed for water use. The projected nonresidential metered water and wastewater use for the study period is shown in Table 10.

**Table 10
Metered Nonresidential Water and Wastewater Usage**

Customer Group	Service Type	No. Meters	Projected Usage		Wastewater Strength Classification
			Water (ccf/yr)	Wastewater (ccf/yr)	
Sandy Cove Shopping Center	Domestic	4	1,039	1,039	Business Restaurant
	Domestic	4	3,010	3,010	
	Irrigation	1	2,679		
	Subtotals	9	6,728	4,049	
Lakeview Business Plaza	Domestic	1	2,882	2,882	Restaurant Business
	Irrigation	1	152	152	
	Subtotals	2	2,406	3,034	
Other Nonresidential	Domestic	14	24,053	13,568	Business School Restaurant
	Domestic	2	1,043	1,043	
	Domestic	3	2,872	2,832	
	Irrigation	65	159,635		
	Subtotals	84	187,603	17,443	
Total Metered Nonresidential	Domestic	18	25,244	14,759	Business Restaurant School
	Domestic	8	8,764	8,724	
	Domestic	2	1,043	1,043	
	Irrigation	67	164,720		
	Totals	95	199,771	24,526	

Total Water Usage

The total projected water usage for the study period is shown in Table 11. This is based on the parcels and accounts in Table 4, estimated metered residential usage of 18.0 ccf per month, the unmetered residential usage shown in Table 7 and the metered nonresidential usage in Table 10. No growth in the customer base is included in these projections.

**Table 11
Total Water Usage**

User Type	2011/12		2012/13	
	Accounts (No.)	Usage (ccf/yr.)	Accounts (No.)	Usage (ccf/yr.)
Residential				
Unmetered				
Under 5,000 SF	137	28,359	137	28,359
5,000 - 10,000 SF	2,866	791,016	2,866	791,016
10,001 - 15,000 SF	307	105,915	307	105,915
Over 15,000 SF	28	9,660	28	9,660
Additional 1,000 SF	128	2,949	128	2,949
MF/Condos - No Irrigation	174	20,358	174	20,358
Metered	1,880	406,080	1,880	406,080
Total Residential	5,392	1,364,337	5,392	1,364,337
Nonresidential				
Metered				
Domestic	28	35,051	28	35,051
Irrigation	67	164,720	67	164,720
Total Nonresidential	95	199,771	95	199,771
Total Water System (1)	5,487	1,564,108	5,487	1,564,108

(1) Excludes Vacant Lots

Unmetered Residential Wastewater Usage

Unmetered residential wastewater discharge is based on two classifications of dwelling units, single family and multiple family/condominiums. This method recognizes varying wastewater discharges between the smaller and larger dwelling units and is similar to the rate structures used by most agencies.

The two-classification wastewater rate structure is shown in Table 12. Approximately 96% of the parcels are in the single family classification. A parcel in this classification is established as one ERU with a wastewater discharge of 13 ccf per month, as calculated below. Discharge by multiple family/condominium parcels is set at 75% of one ERU, or 9.75 ccf per month.

The total residential and unmetered nonresidential water ERUs for 2013 are shown in Table 13 and the calculation of wastewater discharge per ERU shown in Table 14. This is based on the wastewater treatment plant influent records for the year 2010. Metered nonresidential usage in that year is deducted from total water production and divided by the total ERUs. The calculated value has been rounded to 13 ccf/month.

Table 12
Residential Wastewater Billing Method

Residential Classification	Equivalent Residential Units (ERUs)	Wastewater Discharge	
		ccf/month	gallons/day
Single Family	1.00	13.00	320
Multiple Family/Condos	0.75	9.75	240

Table 13
2010 Wastewater ERUs

Residential Classification	Residential Parcels	ERUs/ Parcel	Total ERUs
Single Family	5,167	1.00	5,167
Multiple Family/Condos	224	0.75	168
Unmetered Nonresidential	3		8
Total ERUs			5,343

Wastewater Strength

Wastewater service charges are based on both the volume of wastewater discharged and the pollutants in the wastewater. Pollutants are measured by two parameters, biochemical oxygen demand (BOD) and suspended solids (SS). BOD is a measure of the organic material in the discharge and SS is a measure of suspended material. Both of these are removed at the wastewater treatment plant. BOD and SS discharges are expressed in pounds, which are a function of concentration, milligrams per liter (mg/l), and the volume of wastewater discharged. Residential pollutant concentrations are based on influent sampling at the treatment plant. Nonresidential concentrations are based on standards published in the Revenue Program Guidelines issued by the State Water Resources Control Board. The assigned wastewater pollutant strengths are shown in Table 15.

Table 14

Wastewater Discharge Calculation

Item	Wastewater Discharge	Units
2010 Treatment Plant Influent	651.37	MG/year
Less: 2010 Nonresidential Metered Discharge	870,816 (24,526)	ccf/year ccf/year
Unmetered Wastewater Discharge	846,290	ccf/year
Wastewater ERUs - Table 13	5,343	ERUs
Wastewater Discharge per ERU	13.2	ccf/month
Assigned Discharge per ERU	13.0	ccf/month

Table 15

Wastewater Pollutant Strengths

User Classification	Pollutant Concentrations	
	BOD (mg/l)	Suspended Solids (mg/l)
Residential	175	200
Business/Government/Clubs	150	150
Restaurants/Bars/Dining Facilities	1,000	600
Schools	130	100
Other Domestic Strength Users	150	150

Total Wastewater Discharge

The total projected wastewater discharge for the study period is shown in Table 16. This is based on the parcels and accounts in Table 5, the metered nonresidential usage in Table 10 and the unmetered residential discharges shown in Table 12. No growth in the customer base is included in these projections.

Table 16
Total Wastewater Discharge

User Type	2011/12		2012/13	
	Accounts (No.)	Usage (ccf/yr.)	Accounts (No.)	Usage (ccf/yr.)
Residential				
Single Family	5,167	806,052	5,167	806,052
Multiple Family/Condos	224	26,208	224	26,208
Total Residential	5,391	832,260	5,391	832,260
Nonresidential				
Metered				
Businesses	18	14,759	18	14759
Restaurants	8	8,724	8	8724
Schools	2	1,043	2	1043
Total Nonresidential	28	24,526	28	24,526
Total Wastewater System (1)	5,419	856,786	5,419	856,786

(1) Excludes Vacant Lots

Revenues at Current Rates

The total revenues generated by the current water rates for the two-year study period are shown in Table 18. These revenues are based on the current water rates in Table 17, the parcels and accounts in Table 4 and water usage in Table 11. Vacant lots and unmetered nonresidential customers are currently billed at \$176 per year for water and \$226 per year for wastewater. The total estimated water revenues for the study period are \$3,396,000.

The total revenues generated by the current wastewater rates for the two-year study period are shown in Table 20. These revenues are based on the current wastewater rates in Table 19, the parcels and accounts in Table 5 and the wastewater discharge in Table 16. The total estimated wastewater revenues for the study period are \$6,097,000.

The total estimated revenues from the current rates for both systems are \$9,493,000 for fiscal years 2011/12 and 2012/13. These are summarized in Table 21.

Table 17
Current Water Rates

Residential Unmetered	FY 2010/11	
	Monthly (\$/month/DU)	Yearly (\$/year/DU)
Parcel Size (Square Feet/DU)		
Under 5,000 (1)	\$18.75	\$225.00
5,000 - 10,000	\$23.77	\$285.24
10,001 - 15,000	\$28.79	\$345.48
Over 15,000, Plus Each Additional 1,000	\$28.79 \$1.67	\$345.48 \$20.04
Residential Metered	Monthly (\$/month)	Use (\$/ccf)
Account Charge: All	\$5.74	
Metered Usage Charge: All Usage		\$0.803
Nonresidential Metered	Monthly (\$/month)	Use (\$/ccf)
Nonirrigation Account Charge:		
5/8" Inch Meter	\$5.49	
1 Inch Meter	\$5.74	
1 1/2 Inch Meter	\$5.98	
2 Inch Meter	\$6.66	
3 Inch Meter	\$11.61	
4 Inch Meter	\$13.45	
6 Inch Meter	\$17.73	
Irrigation Account Charge:		
5/8" Inch Meter	\$1.80	
1 Inch Meter	\$2.05	
1 1/2 Inch Meter	\$2.29	
2 Inch Meter	\$2.97	
3 Inch Meter	\$7.92	
4 Inch Meter	\$9.76	
6 Inch Meter	\$14.04	
Metered Usage Charge: All Usage		\$0.803

DU = Dwelling Unit
ccf = 100 cubic feet = 748 gallons
(1) Includes Multiple Family/Condos with No Irrigation

Table 18

Water System Revenues at Current Rates

User Type	Classification	Fiscal Year		Two-Year Totals	
		2011/12	2012/13		
Unmetered	Residential Parcels				
	Under 5,000 Square Feet (1)	\$69,975	\$69,975	\$139,950	
	5,000 - 10,000 Square Feet	\$817,498	\$817,498	\$1,634,996	
	10,001 - 15,000 Square Feet	\$106,062	\$106,062	\$212,124	
	Over 15,000 Square Feet	\$9,673	\$9,673	\$19,346	
	Additional 1,000 Square Feet	\$2,463	\$2,463	\$4,926	
	Total Unmetered Parcels	\$1,005,671	\$1,005,671	\$2,011,342	
Metered	Total Metered Parcels	\$463,328	\$463,328	\$926,656	
Vacant Parcels	Vacant Lots/W&S Services	\$51,392	\$51,392	\$102,784	
	Others	\$12,320	\$12,320	\$24,640	
	Total Vacant Parcels	\$63,712	\$63,712	\$127,424	
Total Residential		\$1,532,711	\$1,532,711	\$3,065,422	
Metered	Nonresidential Accounts				
	Domestic	\$30,915	\$30,915	\$61,830	
	Irrigation	\$134,541	\$134,541	\$269,082	
Total Nonresidential		\$165,456	\$165,456	\$330,912	
Total Water System Revenues		\$1,698,167	\$1,698,167	\$3,396,334	

(1) Includes Multiple Family/Condos with No Irrigation

**Table 19
Current Wastewater Rates**

Residential	FY 2010/11	
	Monthly (\$/month)	Yearly (\$/year)
Single Family - Each DU	\$44.38	\$532.56
Multiple Family/Condos - Each DU	\$33.29	\$399.48
Nonresidential Metered	Use (\$/ccf)	
Business/Government/Clubs	\$3.082	
Restaurants/Bars/Dining Facilities	\$9.048	
Schools	\$2.773	
Other Domestic Strength Users	\$3.082	

DU = Dwelling Unit
ccf = 100 cubic feet = 748 gallons

Table 20

Wastewater System Revenues at Current Rates

User Type	Classification	Fiscal Year		Two-Year Totals	
		2010/11	2011/12		
Unmetered	Residential Parcels				
	Single Family	\$2,751,811	\$2,751,811	\$5,503,622	
	Multiple Family/Condos	\$89,472	\$89,472	\$178,944	
	Total Unmetered Parcels	\$2,841,283	\$2,841,283	\$5,682,566	
Vacant Parcels	Vacant Lots/W&S Services		\$65,408	\$65,408	\$130,816
	Others		\$14,560	\$14,560	\$29,120
	Total Vacant Parcels		\$79,968	\$79,968	\$159,936
Total Residential		\$2,921,251	\$2,921,251	\$5,842,502	
	Nonresidential Accounts				
Metered	Total Nonresidential	\$127,312	\$127,312	\$254,624	
Total Wastewater System Revenues		\$3,048,563	\$3,048,563	\$6,097,126	

Table 21
Total Customer Revenues

System	Classification	Fiscal Year		Two-Year Totals
		2011/12	2012/13	
Water	Residential	\$1,532,711	\$1,532,711	\$3,065,422
	Nonresidential	\$165,456	\$165,456	\$330,912
	Total Water Revenue	\$1,698,167	\$1,698,167	\$3,396,334
Wastewater	Residential	\$2,921,251	\$2,921,251	\$5,842,502
	Nonresidential	\$127,312	\$127,312	\$254,624
	Total Wastewater Revenue	\$3,048,563	\$3,048,563	\$6,097,126
Both Systems	Residential	\$4,453,962	\$4,453,962	\$8,907,924
	Nonresidential	\$292,768	\$292,768	\$585,536
	Total Revenue	\$4,746,730	\$4,746,730	\$9,493,460

Chapter 3 - Operating Expenses

Introduction

Veolia Water (Veolia) provides operation, maintenance and management of the Town's water and wastewater systems. Veolia provides all operational services and a specified amount of preventive and corrective maintenance and repairs for a fixed monthly cost. Annual adjustments are made for inflation. Adjustments may also be made for additional staffing requirements. Additional maintenance and line repairs are performed by outside contractors.

The Town's 12 person staff includes the General Manager, three division managers and eight staff members. Staff salary costs and expenses associated with landscaping services provided by the Town are segregated from those for water and wastewater services. Legal assistance is provided by outside counsel. An independent firm provides engineering consulting services. Contra Costa County provides revenue collection, investment and accounting services.

Projected Total Operating Expenses

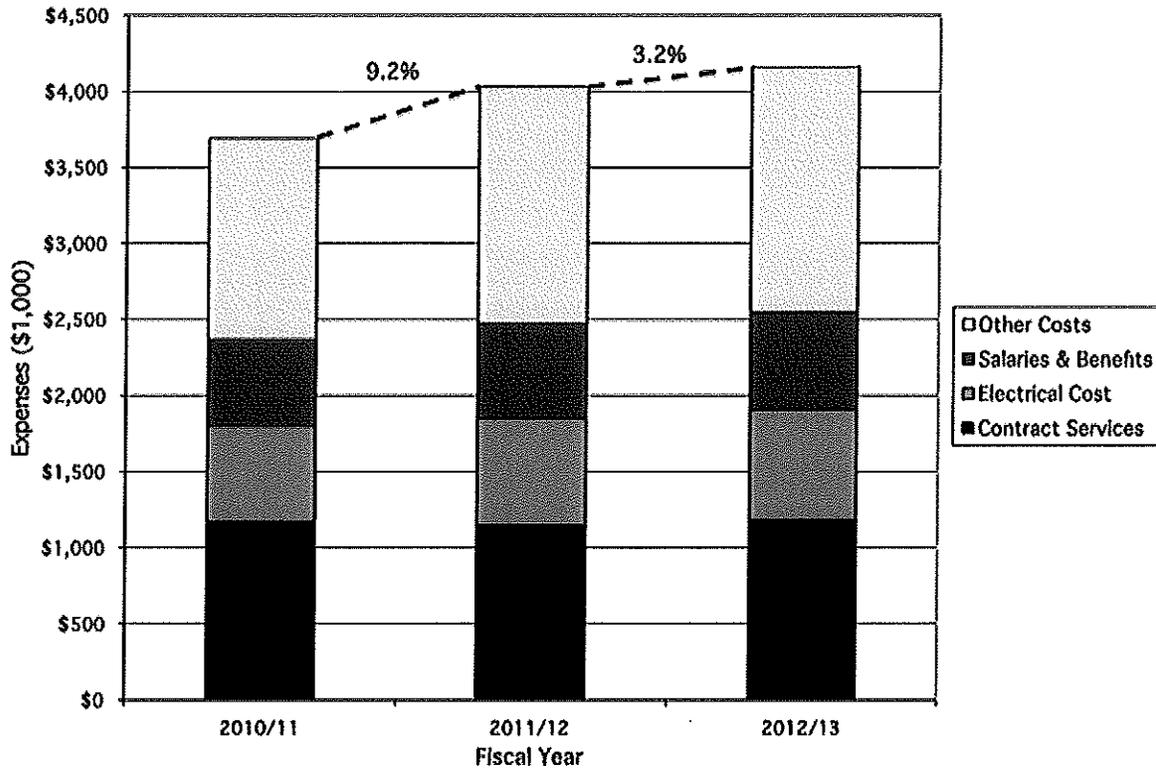
General repairs and pump repairs represent the most significant increase in the Town's operating expenses. The 2010/11 budget for these services is \$500,000. The projections for the study period are \$650,000 in 2011/12 and \$670,000 in 2012/13. These are based on actual expenditures required as the systems age. Other significant increases include \$80,000 for power costs and \$50,000 for Town staff costs.

The total projected operating expenses for the water and wastewater systems are shown in Table 22 and illustrated in Figure 2. These exclude landscaping costs in the budget, which are reimbursed. The operating expense increase in 2011/12 is \$341,000, or 9.2%. An additional 3.2% increase of \$130,000 is projected for 2011/12.

**Table 22
Projected Total Operating Expenses**

Account No.	Budget Item	2011/12	2012/13	Two-Year Totals
7000	Salary & Wages			
7001	Salary & Wages	\$531,551	\$547,498	\$1,079,049
7005	Overtime	\$5,000	\$5,150	\$10,150
7007	Auto Allowance	\$4,200	\$4,326	\$8,526
7010	Payroll Taxes	\$53,655	\$55,265	\$108,920
7011	Group Insurance (Partial EE Reimb.)	\$44,400	\$45,732	\$90,132
7021	Landscape Related Salary & Wages (Reimb.)	\$157,737	\$162,469	\$320,206
7022	Landscape Related Overtime (Reimb.)	\$3,000	\$3,090	\$6,090
7023	Landscape Related Payroll Taxes (Reimb.)	\$16,073	\$16,555	\$32,628
7024	Landscape Related Group Ins (Partial EE Reimb.)	\$23,600	\$24,308	\$47,908
7030	Worker's Comp	\$8,000	\$8,240	\$16,240
	Subtotal Salaries & Wages	\$847,216	\$872,632	\$1,719,848
7100	Board of Directors			
7010	Compensation	\$36,000	\$37,080	\$73,080
7102	Travel & Training	\$2,500	\$2,575	\$5,075
	Subtotal Board of Directors	\$38,500	\$39,655	\$78,155
7200	Contractual Services			
7205	Legal Services	\$80,000	\$82,400	\$162,400
7210	Consulting Services	\$210,000	\$216,300	\$426,300
7215	Water & Wastewater Services Contract	\$1,148,000	\$1,182,440	\$2,330,440
7220	Liability Insurance	\$50,000	\$51,500	\$101,500
7225	Accounting Financial Services	\$30,000	\$30,900	\$60,900
	Subtotal Contractual Services	\$1,518,000	\$1,563,540	\$3,081,540
7300	Operations & Maintenance			
7012	Preventive & Corrective Fund	\$107,000	\$110,210	\$217,210
7014	Outsource of Water Billing	\$15,000	\$15,450	\$30,450
7135	Electrical Cost (water)	\$335,000	\$345,050	\$680,050
7137	Electrical Cost (sewer)	\$370,000	\$381,100	\$751,100
7210	Public Communications & Noticing	\$5,000	\$5,150	\$10,150
7220	Election Expenses	\$0	\$10,000	\$10,000
7230	Rent - Public Meetings	\$500	\$515	\$1,015
7250	Memberships	\$17,500	\$18,025	\$35,525
7280	Permits	\$40,000	\$41,200	\$81,200
7285	NPDES NOV Fines (s)	\$25,000	\$25,000	\$50,000
7290	Travel & Training	\$3,000	\$3,090	\$6,090
7300	General Repairs - Water/Sewer	\$550,000	\$566,500	\$1,116,500
7305	General Repairs - Pumps	\$100,000	\$103,000	\$203,000
7310	NTR/SIP Testing - RWQCB	\$5,000	\$5,150	\$10,150
7320	Special Equipment	\$3,000	\$3,090	\$6,090
7330	Chemicals/Odor Supplies	\$100,000	\$103,000	\$203,000
7410	Copier Maintenance	\$4,500	\$4,635	\$9,135
7420	Postage	\$2,500	\$2,575	\$5,075
7430	Office Supplies	\$8,000	\$8,240	\$16,240
7510	Info Systems Maintenance	\$2,500	\$2,575	\$5,075
7520	Cellular Communications/Data	\$6,500	\$6,695	\$13,195
7550	Telephone	\$4,800	\$4,944	\$9,744
7630	Facility Maintenance/Landscape	\$15,000	\$15,450	\$30,450
7665	Office Buildings/Improvements	\$10,000	\$10,300	\$20,300
7670	Office Equipment/Software	\$30,000	\$30,900	\$60,900
7680	Office Furnishings	\$1,000	\$1,030	\$2,030
7685	Miscellaneous Small Tools	\$3,500	\$3,605	\$7,105
7690	Equipment Maintenance/Fuel	\$20,000	\$20,600	\$40,600
7925	Miscellaneous Bank Charges	\$500	\$515	\$1,015
7950	Miscellaneous Services & Supplies	\$2,500	\$2,575	\$5,075
7951	Miscellaneous Reimbursable	\$1,000	\$1,030	\$2,030
7952	Landscape Related Reimbursables	\$200,000	\$206,000	\$406,000
7970	Unrecoverable Charges	\$5,000	\$5,150	\$10,150
7990	G.F. Expenditures	\$24,000	\$24,720	\$48,720
	Subtotal Operations and Maintenance	\$2,017,300	\$2,087,969	\$4,104,369
7800	Inter-Governmental Charges			
7805	Revenue Collection	\$6,000	\$6,180	\$12,180
7810-0810	Investment Fee	\$200	\$206	\$406
7815-2315	Data Processing/Payroll Wire Transfer Fees	\$480	\$494	\$974
7820	Accounting (A/P, A/R, GL)	\$2,000	\$2,060	\$4,060
7825	Public Works - Permits	\$10,000	\$10,300	\$20,300
7850	Property Taxes	\$10,000	\$10,300	\$20,300
	Subtotal Inter-Governmental Charges	\$28,680	\$29,540	\$58,220
	Total Operations & Maintenance Budget	\$4,449,696	\$4,592,437	\$9,042,133
	Landscape & Other Deductions			
9015	EE Group Insurance Contributions	\$17,052	\$17,564	\$34,616
9251	Landscape Related Payroll Reimbursements	\$176,810	\$182,114	\$358,924
9252	Landscape Related Reimbursements	\$200,000	\$206,000	\$406,000
9253	Landscape Related Group Insurance (Partial EE Reimb.)	\$23,600	\$24,308	\$47,908
	Total Landscape & Other Deductions	\$417,462	\$429,986	\$847,448
	Total Water & Sewer Operations & Maintenance Budget	\$4,032,234	\$4,162,451	\$8,194,685

Figure 2
Projected Total Operating Expenses



Water and Wastewater Operating Expenses

In order to develop the revenue requirements for each system, total operating expenses are separated into water and wastewater components. Line items in the budget are assigned between the two systems, as discussed below.

The Town staff estimates that 20% of contracted consulting services and 40% of Veolia services are related to the water system. In addition, 60% of the general repairs to lines and 60% of the chemicals are also related to water. The balance of these costs is assigned to the wastewater system. Power costs are assigned directly to each system. Special testing and fines are assigned directly to wastewater. Water meter billing and maintenance are assigned directly to water. Staff salaries and benefits costs are assigned 40% to water and 60% to wastewater. The remaining operating expenses are assigned 40% to water and 60% to wastewater.

The projected 2011/12 and 2012/13 operating expenses for each system are shown in Table 23.

Table 23
Water and Wastewater Operating Expenses

Budget Item	Assignment		FY 2011/12		FY 2012/13	
	Water	Wastewater	Water	Wastewater	Water	Wastewater
Consulting Services	20%	80%	\$42,000	\$168,000	\$43,260	\$173,040
Water & WW Services Contract	40%	60%	\$459,200	\$688,800	\$472,976	\$709,464
Prev. & Corrective Fund	40%	60%	\$42,800	\$64,200	\$44,084	\$66,126
Electrical Cost - Water	100%		\$335,000	\$0	\$345,050	\$0
Electrical Cost - Wastewater		100%	\$0	\$370,000	\$0	\$381,100
General Repairs - Water/Sewer	60%	40%	\$330,000	\$220,000	\$339,900	\$226,600
General Repairs - Pumps	60%	40%	\$60,000	\$40,000	\$61,800	\$41,200
NTR/SIP Testing		100%	\$0	\$5,000	\$0	\$5,150
NPDES NOV Fines		100%	\$0	\$25,000	\$0	\$25,000
Chemicals/Odor Materials	60%	40%	\$60,000	\$40,000	\$61,800	\$41,200
Water Meter Billing Staff	100%		\$93,085	\$0	\$95,878	\$0
Water Meter Maintenance Staff	100%		\$62,649	\$0	\$64,528	\$0
Other Staff	40%	60%	\$189,608	\$284,412	\$195,296	\$292,945
Outsource of Water Billing	100%		\$15,000	\$0	\$15,450	\$0
Other Operating Expenses	40%	60%	\$174,992	\$262,488	\$184,242	\$276,362
Total Operating Expenses			\$1,864,334	\$2,167,900	\$1,924,264	\$2,238,187

Chapter 4 - Capital Improvement Program

Introduction

The capital improvement program for each system has been divided into two general classifications: (1) capital projects, and (2) infrastructure replacement funding. Examples of capital projects for the water system include the new filters and supply wells. Examples of capital projects for the wastewater system are the belt presses and the salinity project. Revenue from rates, capacity charges, capital contributions or other sources may fund these costs.

Replacement costs are those expenditures required to keep the water and wastewater systems in proper operating condition throughout their useful lives. Commencing in 2011/12, the Town has established four infrastructure replacement funds for these costs. Replacement items typically include pumps, motors, electrical controls, mobile equipment, main replacement and small projects. Replacement costs are considered to be part of operation and maintenance expenses and are funded by revenue from rates.

Water System Capital Projects

The Town staff has developed a two-year capital improvement program for the water system. The total project costs in 2011/12 are \$144,000 plus \$16,000 of miscellaneous projects allocated to the water system. The total project costs in 2112/13 are \$680,000. These projects will be funded on a pay as you go basis in revenue from rates. The Water Meter Program is not included as customers reimburse the Town directly for meter installation. The water system capital projects are shown in Table 24.

Wastewater System Capital Projects

The Town staff has developed a two-year capital improvement program for the wastewater system. The total project costs in 2011/12 are \$1,235,655 plus \$24,000 of miscellaneous projects allocated to the water system. The total project costs in 2112/13 are \$1,380,000. These projects will be funded on a pay as you go basis in revenue from rates. The wastewater system capital projects are shown in Table 25.

Table 24

Water System Capital Projects

Account Number	Project	Fiscal Year		Two-Year Totals
		2011/12	2012/13	
0910-011	Security Door Locks (12)	\$8,000		\$8,000
0910-012	Ladder Vandal Guard	\$10,000		\$10,000
1011-013	Rehab Wells	\$30,000	\$30,000	\$60,000
1011-015	Water Meter Trailer	\$20,000		\$20,000
1112-006	New supply well to Willow Lake WTP	\$40,000	\$575,000	\$615,000
1112-008	Install water well transducers & wellhead survey	\$36,000		\$36,000
	Miscellaneous Water projects (TBD)		\$75,000	\$75,000
1011-018	Portable Message Units - 40% (1)	\$12,000		\$12,000
1112-007	Fuel Tank - Regular Fuel - 40% (1)	\$4,000		\$4,000
	Total Water System Capital Projects	\$160,000	\$680,000	\$840,000

(1) Miscellaneous Capital Improvement Program project allocation to Water System

Table 25
Wastewater System Capital Projects

Account Number	Project	Fiscal Year		Two-Year Totals
		2011/12	2012/13	
0910-001	Carport for Equipment	\$110,000		\$110,000
0910-004	Manhole Rehabilitation Project	\$15,000	\$15,000	\$30,000
0910-005	Landscape @ Plant #1	\$7,000		\$7,000
0910-007	UV System	\$23,665		\$23,665
0910-008	Salinity Project	\$70,000		\$70,000
1011-002	Upgrade/Replace SCADA PLC's (Multi-Year)	\$25,000	\$25,000	\$50,000
1011-003	Biosolids Pumps (2) wet well	\$20,000		\$20,000
1011-004	Re-Activate Pump Station W	\$20,000	\$358,000	\$378,000
1011-005	Bypass Valve Lift Sta "S"	\$10,000		\$10,000
1011-006	Metal Cover for UV Area	\$25,000		\$25,000
1011-008	Paving for Biosolids Containment Area	\$15,000		\$15,000
1011-010	Road Crossing Ramps	\$15,000		\$15,000
1112-001	Trailer Trash-Pump	\$20,000		\$20,000
1112-002	Raise Manholes	\$20,000		\$20,000
1112-003	Two New Solar Dryers and 2 Belt Presses	\$800,000	\$800,000	\$1,600,000
1112-009	Collection System Pump Station Improvements	\$40,000	\$50,000	\$90,000
	Portable Mixer in Influent Pump Station (if needed)		\$5,000	\$5,000
	Influent Pump Station Modifications, Upgrade		\$90,000	\$90,000
	Emergency Storage Facilities (Plant 1 Lagoon)		\$27,000	\$27,000
	Revise UV Disinfection Weirs		\$10,000	\$10,000
1011-018	Portable Message Units - 60% (1)	\$18,000		\$18,000
1112-007	Fuel Tank - Regular Fuel - 60% (1)	\$6,000		\$6,000
	Total Wastewater System Capital Projects	\$1,259,665	\$1,380,000	\$2,639,665

(1) Miscellaneous Capital Improvement Program project allocation to Wastewater System

Infrastructure Replacement Funds

The Town has established four separate funds for infrastructure replacement, starting in 2011/12. The total funding to be generated from water and wastewater rates is \$384,000 in 2011/12 and \$400,000 in 2012/13. A list of these funds and their allocation to the two utilities is shown in Table 26.

Table 26
Infrastructure Replacement Funds

Account Number	Replacement Fund	Assignment		2011/12			2012/13		
		Water	Wastewater	Total	Water	Wastewater	Total	Water	Wastewater
R1112-008	Sewer Facilities		100%	\$150,000	\$0	\$150,000	\$150,000	\$0	\$150,000
R1112-009	Pumps/Motors	60%	40%	\$40,000	\$24,000	\$16,000	\$100,000	\$60,000	\$40,000
R1011-010	Water Facilities	100%		\$94,000	\$94,000	\$0	\$100,000	\$100,000	\$0
R1112-011	Facilities & Vehicles	40%	60%	\$100,000	\$40,000	\$60,000	\$50,000	\$20,000	\$30,000
	Totals Funds			\$384,000	\$158,000	\$226,000	\$400,000	\$180,000	\$220,000

Chapter 5 - Total Revenue Requirements

Total Revenues and Revenue Requirements

Projected revenues from the current 2010/11 rates are developed in Chapter 2. Operating expenses and capital improvement program costs are developed in Chapters 3 and 4. The total revenues and revenue requirements for the individual water and wastewater systems are shown in Table 27. There is a \$1,570,000,000 funding deficit at the current rates for the water system and a \$1,395,000 funding deficit for the wastewater system over the two-year study period.

Table 27
Water and Wastewater Revenues and Revenue Requirements

Item	Table No.	Fiscal Year		Two-Year Totals
		2011/12	2012/13	
Water System Revenues				
Revenue from Current Rates	18	\$1,698,167	\$1,698,167	\$3,396,334
Revenue Requirements				
Operating Expenses	23	\$1,864,344	\$1,924,264	\$3,788,608
Capital Projects	24	\$160,000	\$680,000	\$840,000
Replacement Funding	26	\$158,000	\$180,000	\$338,000
Total Revenue Requirements		\$2,182,344	\$2,784,264	\$4,966,608
Revenues less Requirements		(\$484,177)	(\$1,086,097)	(\$1,570,274)
Wastewater System Revenues				
Revenue from Current Rates	20	\$3,048,563	\$3,048,563	\$6,097,126
Operating Expenses	23	\$2,167,900	\$2,238,187	\$4,406,087
Capital Projects	25	\$1,259,665	\$1,380,000	\$2,639,665
Replacement Funding	26	\$226,000	\$220,000	\$446,000
Total Revenue Requirements		\$3,653,565	\$3,838,187	\$7,491,752
Revenues less Requirements		(\$605,002)	(\$789,624)	(\$1,394,626)

Revenue Required from Rates

An additional adjustment is made to the total revenue requirements for each system in order to develop the revenues to be recovered from rates in the study period. This includes interest income and other miscellaneous revenues. These other revenues total \$46,000 per year and are allocated 40% to the water system and 60% to the wastewater system. The total revenues required from rates

for each system are shown in Table 28. The water and wastewater rates required to generate these revenues are developed in the Chapter 6.

Table 28
Revenue Required from Rates

Item	Table No.	Fiscal Year		Two-Year Totals
		2011/12	2012/13	
Water System				
Total Revenue Requirements	27	\$2,182,344	\$2,784,264	\$4,966,608
Less: Miscellaneous Revenues		(\$18,400)	(\$18,400)	(\$36,800)
Total Revenue from Rates		\$2,163,944	\$2,765,864	\$4,929,808
Wastewater System				
Total Revenue Requirements	27	\$3,653,565	\$3,838,187	\$7,491,752
Less: Miscellaneous Revenues		(\$27,600)	(\$27,600)	(\$55,200)
Total Revenue from Rates		\$3,625,965	\$3,810,587	\$7,436,552

Total Cash Flow

The projected cash flow from July 2011 through June 2013 is shown in Table 29. This is presented on a semiannual basis to recognize the tax roll revenue lag at the beginning of each fiscal year. The Town receives revenues from the tax roll billings for unmetered water and wastewater customers just prior to the middle of the current fiscal year. Revenues from metered residential water customers are received monthly. Revenues from metered nonresidential water and wastewater customers are received quarterly. The cash flow in Table 29 is based on the receipt of tax roll funds at the end of December and equal semiannual operating expenses and capital improvement expenses. A minimum cash balance of \$2,407,000 occurs in December 2012.

Table 29

Total Cash Flow at Proposed Rates

Item	Fiscal Year			
	2011/12		2012/13	
	July-Dec.	Jan.-June	July-Dec.	Jan.-June
Beginning Balance (1)	\$5,269,560	\$2,736,055	\$5,269,560	\$2,407,460
Source of Funds:				
Revenue From Water Rates	\$322,326	\$1,841,609	\$385,030	\$2,380,835
Revenue From Wastewater Rates	\$39,119	\$3,586,846	\$41,096	\$3,769,491
Miscellaneous Revenues	\$23,000	\$23,000	\$23,000	\$23,000
Total Source of Funds	\$384,445	\$5,451,455	\$449,126	\$6,173,326
Use of Funds:				
Operating Expenses	\$2,016,117	\$2,016,117	\$2,081,226	\$2,081,226
Water CIP	\$159,000	\$159,000	\$430,000	\$430,000
Wastewater CIP	\$742,833	\$742,833	\$800,000	\$800,000
Total Use of Funds	\$2,917,950	\$2,917,950	\$3,311,226	\$3,311,226
Ending Balance (1)	\$2,736,055	\$5,269,560	\$2,407,460	\$5,269,560

(1) Includes \$3,000,000 held for reserves.

Chapter 6 - Water and Wastewater Rates

Water Unit Costs

In order to calculate unit costs, the components of the water revenue requirements are initially classified as variable or fixed costs. Variable costs are expenses that change with the volume of water provided to customers and include power and chemicals. Fixed costs are expenses that do not vary with water usage and include all the remaining items. In this study, 100% of the operating costs for power and chemicals and 25% of the Veolia operations costs are classified as variable. All of the remaining operating expenses, addition and improvement funding and replacement costs are classified as fixed. In addition, public fire protection costs are assumed to be 20% of total fixed costs. This is based on the American Water Works Association Water Rates Manual M1. All costs are reduced for prorated vacant parcel revenue and miscellaneous revenues.

Unit fixed costs are calculated by dividing the total fixed costs, excluding fire protection, by the total annual usage from all parcels shown in Table 11. Unit costs for fire protection are calculated by dividing those costs by the total number of accounts, excluding irrigation accounts. This process allocates fire protection costs equally to all customers. Unit variable costs are calculated by dividing the total variable costs by the total annual usage from all parcels.

Unit costs for water meter billing are calculated by dividing those costs by the total number of metered customers shown in Table 11. Since 36% of the current customers are metered, the total costs for billing have reduced accordingly. These costs will be phased in as additional meters are installed.

The unit costs for meter maintenance are developed on the basis of meter equivalents. Typical meter equivalents are published in AWWA Manual M1 and recognize the relative difference in costs incurred with various size water meters. Residential meters in the Town are 1 inch and nonresidential meters currently vary from 5/8 inch to 4 inches. The number of water meters and meter equivalents for the study period are shown in Table 30. Similar to billing costs, meter maintenance costs are reduced and will be phased in as additional meters are installed.

The calculated unit costs for the water system in 2011/12 and 2012/13 are shown in Tables 31 and 32.

Table 30
Meters and Meter Equivalents

Meter Size	5/8 inch	1 inch	1 1/2 inch	2 inch	3 inch	4 inch	6 inch	Totals
Meter Equivalent	1.0	1.4	1.8	2.9	11.0	14.0	21.0	
Residential Meters		1,880						1,880
Nonresidential Meters	1	26	22	34	5	7	0	95
Total Meters	1	1,906	22	34	5	7	0	1,975
Meter Equivalentents	1	2,668	40	99	55	98	0	2,961

Table 31
2011/12 Water Unit Costs

Item	Table No.	FY 2011/12					
		Total	Fixed	Fire	Variable	Billing	Meter Maint.
Operating Expenses:	23						
Veolia Water		\$459,200	\$275,520	\$68,880	\$114,800		
Electrical & Chemicals		\$395,000			\$395,000		
Meter Billing and Postage (2)		\$38,911				\$38,911	
Meter Maintenance (2)		\$27,288					\$27,288
Other Operating Expenses		\$943,935	\$755,148	\$188,787			
Total Operating Expenses		\$1,864,334	\$1,030,668	\$257,667	\$509,800	\$38,911	\$27,288
Capital Projects	24	\$160,000	\$128,000	\$32,000			
Replacement Funding	26	\$158,000	\$126,400	\$31,600			
Total Revenue Requirement		\$2,182,334	\$1,285,068	\$321,267	\$509,800	\$38,911	\$27,288
Adjustments:							
Miscellaneous Revenues	28	(\$18,400)	(\$10,835)	(\$2,709)	(\$4,298)	(\$328)	(\$230)
Vacant Parcel Revenue	18	(\$63,712)	(\$37,517)	(\$9,379)	(\$14,883)	(\$1,136)	(\$797)
Net Revenue Requirement		\$2,100,222	\$1,236,716	\$309,179	\$490,618	\$37,447	\$26,261
Total Usage	11/30		1,564,108 ccf/year	5,420 accounts	1,564,108 ccf/year	1,975 meters	2,961 meter equiv.
Unit Costs		\$1.1044 \$/ccf (1)	\$0.7907 \$/ccf	\$4.7537 \$/month	\$0.3137 \$/ccf	\$1.5800 \$/month	\$0.7391 \$/month/ meter equiv.

- (1) Total Fixed and Variable Unit Costs.
(2) 36% of total. Balance In Other Operating Expenses.

Table 32

2012/13 Water Unit Costs

Item	Table No.	FY 2012/13					
		Total	Fixed	Fire	Variable	Billing	Meter Maint.
Operating Expenses:	23						
Veolia Water		\$472,976	\$283,786	\$70,946	\$118,244		
Electrical & Chemicals		\$406,850			\$406,850		
Meter Billing and Postage (2)		\$40,078				\$40,078	
Meter Maintenance (2)		\$28,106					\$28,106
Other Operating Expenses		\$976,254	\$781,003	\$195,251			
Total Operating Expenses		\$1,924,264	\$1,064,789	\$266,197	\$525,094	\$40,078	\$28,106
Capital Projects	24	\$680,000	\$544,000	\$136,000			
Replacement Funding	26	\$180,000	\$144,000	\$36,000			
Total Revenue Requirement		\$2,784,264	\$1,752,789	\$438,197	\$525,094	\$40,078	\$28,106
Adjustments:							
Miscellaneous Revenues	28	(\$18,400)	(\$11,583)	(\$2,896)	(\$3,470)	(\$265)	(\$186)
Vacant Parcel Revenue	18	(\$63,712)	(\$40,109)	(\$10,027)	(\$12,016)	(\$917)	(\$643)
Net Revenue Requirement		\$2,702,152	\$1,701,097	\$425,274	\$509,608	\$38,896	\$27,277
Total Usage	11/30		1,564,108 ccf/year	5,420 accounts	1,564,108 ccf/year	1,975 meters	2,961 meter equiv.
Unit Costs		\$1.4134 \$/ccf (1)	\$1.0876 \$/ccf	\$6.5387 \$/month	\$0.3258 \$/ccf	\$1.6412 \$/month	\$0.7677 \$/month/ meter equiv.

(1) Total Fixed and Variable Unit Costs.

(2) 36% of total. Balance In Other Operating Expenses.

Water Rates

The water use assigned to each unmetered residential parcel size in Table 7 and the unit costs in Tables 31 and 32 are used to develop the proposed rates for those parcels. These include the fixed, variable and fire protection unit costs. Unmetered parcels do not pay for metered billing and meter maintenance. The proposed unmetered water rates are shown in Tables 33 and 34.

**Table 33
Proposed 2011/12 Unmetered Residential Water Rates**

Residential Parcel Size (Square Feet)	Monthly Use (ccf/month)	FY 2011/12			
		Fixed & Variable \$1.1044/ccf	Fire Protection \$4.7537/month	Total Monthly (\$/month)	Total Yearly (\$/year)
MF/Condos-No Irrigation	9.75	\$10.77	\$4.75	\$15.52	\$186.24
Under 5,000	17.25	\$19.05	\$4.75	\$23.80	\$285.60
5,000 - 10,000	23.00	\$25.40	\$4.75	\$30.15	\$361.80
10,001 - 15,000	28.75	\$31.75	\$4.75	\$36.50	\$438.00
Each Additional 1,000	1.92	\$2.12		\$2.12	\$25.44

**Table 34
Proposed 2012/13 Unmetered Residential Water Rates**

Residential Parcel Size (Square Feet)	Monthly Use (ccf/month)	FY 2012/13			
		Fixed & Variable \$1.4134/ccf	Fire Protection \$6.5387/month	Total Monthly (\$/month)	Total Yearly (\$/year)
MF/Condos - No Irrigation	9.75	\$13.78	\$6.54	\$20.32	\$243.84
Under 5,000	17.25	\$24.38	\$6.54	\$30.92	\$371.04
5,000 - 10,000	23.00	\$32.51	\$6.54	\$39.05	\$468.60
10,001 - 15,000	28.75	\$40.64	\$6.54	\$47.17	\$566.04
Each Additional 1,000	1.92	\$2.71		\$2.71	\$32.52

Water rates for metered customers include all the unit costs shown in Tables 31 and 32. Both metered and unmetered water rates include the same fixed, variable costs and fire protection unit costs. In addition, metered rates include billing and meter maintenance unit costs. An exception is that irrigation accounts are excluded from paying fire protection costs. The residential and nonresidential water rates are based on the same units and meet the requirement that they be proportional to the cost of service attributable to each parcel. Calculations of the proposed water rates are shown in Tables 35 and 36.

**Table 35
Proposed 2011/12 Metered Water Rates**

Meter Size	Meter Equivalent (ME)	FY 2011/12				
		Meter Billing (\$1,5800/month)	Meter Maintenance (\$0.7391/ME/mo.)	Total Irrigation (\$/month)	Fire Protection (\$4.7537/month)	Total Nonirrigation (\$/month)
Account Charge:						
5/8 inch	1.0	\$1.58	\$0.74	\$2.32	\$4.75	\$7.07
1 inch	1.4	\$1.58	\$1.03	\$2.61	\$4.75	\$7.37
1 1/2 inch	1.8	\$1.58	\$1.33	\$2.91	\$4.75	\$7.66
2 inch	2.9	\$1.58	\$2.14	\$3.72	\$4.75	\$8.48
3 inch	11.0	\$1.58	\$8.13	\$9.71	\$4.75	\$14.46
4 inch	14.0	\$1.58	\$10.35	\$11.93	\$4.75	\$16.68
6 inch	21.0	\$1.58	\$15.52	\$17.10	\$4.75	\$21.86
Metered Usage Charge:		\$1.104/ccf				

**Table 36
Proposed 2012/13 Metered Water Rates**

Meter Size	Meter Equivalent (ME)	FY 2012/13				
		Meter Billing (\$1.6412/month)	Meter Maintenance (\$0.7677/ME/mo.)	Total Irrigation (\$/month)	Fire Protection (\$6.5387/month)	Total Nonirrigation (\$/month)
Account Charge:						
5/8 inch	1.0	\$1.64	\$0.77	\$2.41	\$6.54	\$8.95
1 inch	1.4	\$1.64	\$1.07	\$2.72	\$6.54	\$9.25
1 1/2 inch	1.8	\$1.64	\$1.38	\$3.02	\$6.54	\$9.56
2 inch	2.9	\$1.64	\$2.23	\$3.87	\$6.54	\$10.41
3 inch	11.0	\$1.64	\$8.45	\$10.09	\$6.54	\$16.63
4 inch	14.0	\$1.64	\$10.75	\$12.39	\$6.54	\$18.93
6 inch	21.0	\$1.64	\$16.12	\$17.76	\$6.54	\$24.30
Metered Usage Charge:		\$1.413/ccf				

Wastewater Unit Costs

The components of the wastewater revenue requirements are initially classified as fixed or variable costs using the same classification methodology as the water system. In addition, the costs are allocated to the parameters of flow, BOD and suspended solids. Typically in a wastewater system, 75% of the total revenue requirement is related to the treatment function and 25% is related to the collection function. The treatment function costs are allocated equally to flow, BOD and suspended solids. Collection function costs are allocated to entirely to flow. This results in an overall allocation of 50% to flow, 25% to BOD and 25% to suspended solids. All costs are adjusted by prorated vacant parcel revenue, interest income and funds used for rate stabilization.

Unit costs are calculated by dividing the fixed and variable costs for each parameter by the total annual discharge of that parameter from all parcels. For example, the fixed costs allocated to BOD are divided by the total pounds of BOD discharged by all customers. This results in a unit cost expressed as dollars per pound of BOD. Unit variable costs for each parameter are calculated in a similar manner. The calculated unit costs for the study period are shown in Tables 37 and 38.

Table 37
2011/12 Wastewater Unit Costs

Item	Table No.	Total	Fixed Costs				Variable Costs			
			Total	Flow	BOD	\$\$	Total	Flow	BOD	\$\$
Operating Expenses:	23									
Veolia Water		\$688,800	\$516,600	\$258,300	\$129,150	\$129,150	\$172,200	\$86,100	\$43,050	\$43,050
Electrical Cost		\$370,000					\$370,000	\$185,000	\$92,500	\$92,500
Chemicals/Odor Materials		\$40,000					\$40,000	\$20,000	\$10,000	\$10,000
Other Operating Expenses		\$1,069,100	\$1,069,100	\$534,550	\$267,275	\$267,275				
Total Operating Expenses		\$2,167,900	\$1,585,700	\$792,850	\$396,425	\$396,425	\$582,200	\$291,100	\$145,550	\$145,550
Capital Projects	25	\$1,259,665	\$1,259,665	\$629,833	\$314,916	\$314,916				
Replacement Funding	26	\$226,000	\$226,000	\$113,000	\$56,500	\$56,500				
Total Revenue Requirement		\$3,653,565	\$3,071,365	\$1,535,683	\$767,841	\$767,841	\$582,200	\$291,100	\$145,550	\$145,550
Adjustments:										
Miscellaneous Revenues	28	(\$27,600)	(\$23,202)	(\$11,601)	(\$5,800)	(\$5,800)	(\$4,398)	(\$2,199)	(\$1,100)	(\$1,100)
Vacant Parcel Revenue	20	(\$79,968)	(\$67,225)	(\$33,613)	(\$16,806)	(\$16,806)	(\$12,743)	(\$6,371)	(\$3,186)	(\$3,186)
Net Revenue Requirement		\$3,545,997	\$2,980,938	\$1,490,469	\$745,235	\$745,235	\$565,059	\$282,529	\$141,265	\$141,265
Total Discharge	16			856,786 ccf/year	977,663 lbs/year	1,085,496 lbs/year		856,786 ccf/year	977,663 lbs/year	1,085,496 lbs/year
Unit Costs				\$1.73960 \$/ccf	\$0.76226 \$/lb	\$0.68654 \$/lb		\$0.32975 \$/ccf	\$0.14449 \$/lb	\$0.13014 \$/lb
Total Fixed and Variable Unit Costs				\$2.06936 \$/ccf	\$0.90675 \$/lb	\$0.81668 \$/lb				

Table 38
2012/13 Wastewater Unit Costs

Item	Table No.	Total	Fixed Costs				Variable Costs			
			Total	Flow	BOD	\$\$	Total	Flow	BOD	\$\$
Operating Expenses:	23									
Veolia Water		\$709,464	\$532,098	\$266,049	\$133,025	\$133,025	\$177,366	\$88,683	\$44,342	\$44,342
Electrical Cost		\$381,100					\$381,100	\$190,550	\$95,275	\$95,275
Chemicals/Odor Materials		\$41,200					\$41,200	\$20,600	\$10,300	\$10,300
Other Operating Expenses		\$1,106,423	\$1,106,423	\$553,212	\$276,606	\$276,606				
Total Operating Expenses		\$2,238,187	\$1,638,521	\$819,261	\$409,630	\$409,630	\$599,666	\$299,833	\$149,917	\$149,917
Capital Projects	25	\$1,380,000	\$1,380,000	\$690,000	\$345,000	\$345,000				
Replacement Funding	26	\$220,000	\$220,000	\$110,000	\$55,000	\$55,000				
Total Revenue Requirement		\$3,838,187	\$3,238,521	\$1,619,261	\$809,630	\$809,630	\$599,666	\$299,833	\$149,917	\$149,917
Adjustments:										
Miscellaneous Revenues	28	(\$27,600)	(\$23,288)	(\$11,644)	(\$5,822)	(\$5,822)	(\$4,312)	(\$2,156)	(\$1,078)	(\$1,078)
Vacant Parcel Revenue	20	(\$79,968)	(\$67,474)	(\$33,737)	(\$16,869)	(\$16,869)	(\$12,494)	(\$6,247)	(\$3,123)	(\$3,123)
Net Revenue Requirement		\$3,730,619	\$3,147,759	\$1,573,880	\$786,940	\$786,940	\$582,860	\$291,430	\$145,715	\$145,715
Total Discharge	16			856,786 ccf/year	977,663 lbs/year	1,085,496 lbs/year		856,786 ccf/year	977,663 lbs/year	1,085,496 lbs/year
Unit Costs				\$1.83696 \$/ccf	\$0.80492 \$/lb	\$0.72496 \$/lb		\$0.34014 \$/ccf	\$0.14904 \$/lb	\$0.13424 \$/lb
Total Fixed and Variable Unit Costs				\$2.17710 \$/ccf	\$0.95396 \$/lb	\$0.85920 \$/lb				

Wastewater Rates

The discharges assigned to each residential classification in Table 12, the pollutant strengths in Table 15 and the total unit costs in Tables 37 and 38 are used to develop the proposed residential and nonresidential wastewater rates. Total discharge rates, in terms of dollars per hundred cubic feet, are based on both the volume of wastewater and the quantities of pollutants in the wastewater. They are the sum of the following three items: (1) the unit flow cost, (2) the pounds of BOD in each hundred cubic feet multiplied by the BOD unit cost per pound, and (3) the pounds of suspended solids in each hundred cubic feet multiplied by the suspended solids unit cost per pound. The charges for residential customers are equivalent to the assigned monthly discharge multiplied by the total residential discharge rate. The charges for nonresidential customers are equivalent to the metered use multiplied by the total discharge rate for each specific classification.

The residential and nonresidential wastewater rates are based on the same unit costs and meet the requirement that they be proportional to the cost of service attributable to each customer. Calculations of the proposed wastewater rates for the study period are shown in Tables 39 and 40.

**Table 39
Proposed 2011/12 Wastewater Rates**

Classification	Monthly Discharge (ccf/month)	Strength		Unit Costs					Total Discharge (\$/ccf)	Total Monthly (\$/month)
		BOD (mg/l)	SS (mg/l)	Flow (\$/ccf)	BOD @ \$0.90675/lb (lbs/ccf)	SS @ \$0.81668/lb (lbs/ccf)	SS @ \$0.81668/lb (\$/ccf)			
Residential										
Single Family	13.00	175	200	\$2.069	1.09	\$0.990	1.25	\$1.019	\$4.078	\$53.02
Multiple Family/Condos	9.75	175	200	\$2.069	1.09	\$0.990	1.25	\$1.019	\$4.078	\$39.76
Nonresidential										
	Metered									
Business/Gov./Clubs		150	150	\$2.069	0.94	\$0.848	0.94	\$0.764	\$3.682	
Restaurants/Bars/Dining		1,000	600	\$2.069	6.24	\$5.657	3.74	\$3.057	\$10.783	
Schools		130	100	\$2.069	0.81	\$0.735	0.62	\$0.509	\$3.314	
Other Domestic Strength		150	150	\$2.069	0.94	\$0.848	0.94	\$0.764	\$3.682	

**Table 40
Proposed 2012/13 Wastewater Rates**

Classification	Monthly Discharge (ccf/month)	Strength		Unit Costs					Total Discharge (\$/ccf)	Total Monthly (\$/month)
		BOD (mg/l)	SS (mg/l)	Flow (\$/ccf)	BOD @ \$0.95396/lb (lbs/ccf)	SS @ \$0.85920/lb (\$/ccf)	SS @ \$0.85920/lb (lbs/ccf)	SS @ \$0.85920/lb (\$/ccf)		
Residential										
Single Family	13.00	175	200	\$2.177	1.09	\$1.041	1.25	\$1.072	\$4.291	\$55.78
Multiple Family/Condos	9.75	175	200	\$2.177	1.09	\$1.041	1.25	\$1.072	\$4.291	\$41.83
Nonresidential										
Metered										
Business/Gov./Clubs		150	150	\$2.177	0.94	\$0.893	0.94	\$0.804	\$3.874	
Restaurants/Bars/Dining		1,000	600	\$2.177	6.24	\$5.951	3.74	\$3.216	\$11.344	
Schools		130	100	\$2.177	0.81	\$0.774	0.62	\$0.536	\$3.487	
Other Domestic Strength		150	150	\$2.177	0.94	\$0.893	0.94	\$0.804	\$3.874	

Proposed Rates Increases

A comparison of the existing and proposed rates for residential customers is shown in Table 41. This comparison is based on the proposed water rates shown in Tables 33 through 36 and the proposed wastewater rates shown in Tables 39 and 40. Charges for nonresidential customers will vary with actual metered usage and classification. The current fee for vacant parcels will be retained. The overall rate increases for the two-year study period are shown in Table 42.

**Table 41
Proposed Residential Rate Increases**

Type	Parcel Size (Square Feet)	Service	FY 2010/11	FY 2011/12		FY 2012/13	
			Yearly (\$/year)	Yearly (\$/year)	Increase (\$/year)	Yearly (\$/year)	Increase (\$/year)
Unmetered							
Single Family	Under 5,000	Water	\$225.00	\$285.60		\$371.04	
		Wastewater	\$532.56	\$636.24		\$669.36	
		Total	\$757.56	\$921.84	22%	\$1,040.40	13%
Single Family	5,000 - 10,000	Water	\$285.24	\$361.80		\$468.60	
		Wastewater	\$532.56	\$636.24		\$669.36	
		Total	\$817.80	\$998.04	22%	\$1,137.96	14%
Single Family	10,001 - 15,000	Water	\$345.48	\$438.00		\$566.04	
		Wastewater	\$532.56	\$636.24		\$669.36	
		Total	\$878.04	\$1,074.24	22%	\$1,235.40	15%
Multiple Family & Condominiums	Under 5,000	Water	\$225.00	\$285.60		\$371.04	
		Wastewater	\$399.48	\$477.12		\$501.96	
		Total	\$624.48	\$762.72	22%	\$873.00	14%
Multiple Family & Condominiums - No Irrigation	Under 5,000	Water	\$225.00	\$186.24		\$243.84	
		Wastewater	\$399.48	\$477.12		\$501.96	
		Total	\$624.48	\$663.36	6%	\$745.80	12%
Metered							
Single Family	18 ccf/month	Water	\$242.40	\$327.00		\$416.40	
		Wastewater	\$532.56	\$636.24		\$669.36	
		Total	\$774.96	\$963.24	24%	\$1,085.76	13%

**Table 42
Proposed Overall Rate Increases**

Item	Fiscal Year		
	2010/11	2011/12	2012/13
Water System			
Residential	\$1,468,999	\$1,873,290	\$2,412,701
Nonresidential	\$165,456	\$226,932	\$289,451
Vacant Parcels	\$63,712	\$63,712	\$63,712
Total Revenues	\$1,698,167	\$2,163,934	\$2,765,864
Rate Increase		27.4%	27.8%
Wastewater System			
Residential	\$2,841,283	\$3,394,128	\$3,570,843
Nonresidential	\$127,312	\$151,869	\$159,776
Vacant Parcels	\$79,968	\$79,968	\$79,968
Total Revenues	\$3,048,563	\$3,625,965	\$3,810,587
Rate Increase		18.9%	5.1%
Both Systems			
Total Revenues	\$4,746,730	\$5,789,899	\$6,576,451
Rate Increase		22.0%	13.6%