

**CITY OF FORT BRAGG  
WATER AND WASTEWATER RATE ANALYSIS**

***FINAL REPORT***

*JULY 15, 2008*



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**ATTACHMENT 1**

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## EXECUTIVE SUMMARY

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This study of water and wastewater rates was conducted for the City of Fort Bragg to determine revenue requirements, costs of services, appropriate, fair and equitable rates and rate structures, and to maintain the water and wastewater utilities on a financially sound and stable basis over the next ten fiscal years. The study was conducted using historical and projected data on operating and non-operating expenses, debt service, and capital expenditures.

The City retained MuniFinancial to prepare a water and wastewater rate analysis that will include new water and wastewater rate schedules that meet current and near-term projected system revenue requirements. For purposes of determining annual revenue requirements as a basis to set future water and wastewater rates, we used a projection period of ten years, spanning fiscal years 2008/2009 through 2017/2018 (the study period).

### Water Rate Assumptions

This section presents the assumptions used in the water rate analysis.

1. The adopted budget for fiscal year ending June 30, 2008 was used as the base year.
2. Capital projects are operations-related and will be funded on a “pay-as-you-go” basis as well as by a proposed Infrastructure Bank Loan at 3.6% interest with a 30 year term. The approximate loan amount is \$2,190,000.
3. Construction costs were escalated annually by a factor of 4.04%, based on the average annual percentage change between 2003 and 2007 in the Engineering News Record Construction Cost Index.
4. Desired Operating Reserve Fund Balances are set at 90 days of O&M expenses (25%).
5. The beginning operating fund balance for fiscal year 2008/2009 is estimated at \$358,577.
6. The annual customer growth rate for the system as a whole is assumed to be one-half percent (0.5%) throughout the study period.
7. An inflation factor of three percent (3%) was used to project future operating expenses.
8. The Water utility is currently paying debt service on a \$2,267,363 Department of Water Resources Loan as well as a \$4,295,000 bond issue for the Water Enterprise 2003 Certificates of Participation.

## **Water Rate Findings**

This section presents the findings of the water rate analysis.

1. The water utility's current financial condition is not viable since revenues have not kept up with rising costs, such as facility repair and maintenance, labor, and materials.
2. Due to increasing expenses, the current revenues are insufficient to finance the utility's operations and repairs.
3. Existing rates will not adequately fund system replacement and major capital project needs.
4. Existing rates will not adequately fund recommended reserve fund balances.

## **Water Rate Recommendations**

Based on the findings of this water rate analysis, we recommend that the City adopt the following items:

1. The proposed water rate structure (see Table E1 on page 7). The rate structure adequately provides for ongoing costs and debt service and allows for funding of reserves for unscheduled expenses (see Chart E2 on page 8).
2. A policy of targeting an operating fund balance of 90 days of annual operations and maintenance expenses to ensure that funds are available for emergency purposes and to mitigate future rate shocks.
3. A policy of setting aside funds annually in a CIP reserve account to provide for future system repairs and replacement.

## **Wastewater Rate Assumptions**

This section presents the assumptions used in the wastewater rate analysis.

1. The adopted budget for fiscal year ending June 30, 2008 was used as the base year.
2. Capital projects are operations-related and will be funded on a “pay-as-you-go” basis as well as by two proposed bond issues.
3. Construction costs were escalated annually by a factor of 4.04%, based on the average annual percentage change between 2003 and 2007 in the Engineering News Record Construction Cost Index.
4. Desired Operating Reserve Fund Balances are set at 90 days of O&M expenses (25%).
5. The beginning operating fund balance for fiscal year 2008/2009 is estimated at (\$262,359).
6. The annual customer growth rate for the system as a whole is assumed to be one-half percent (0.5%) throughout the study period.
7. An inflation factor of three percent (3%) was used to project future operating and personnel expenses.
8. The Wastewater utility is currently paying debt service on a \$525,000 bond issuance as well as on interfund loans from Water O&M and the RDA Project Fund.

## **Wastewater Rate Findings**

This section presents the findings of the wastewater rate analysis.

1. The wastewater utility’s current financial condition is not viable since revenues have not kept up with rising costs, such as facility repair and maintenance, labor, and materials.
2. Due to increasing expenses, the current revenues are insufficient to finance the utility’s operations and repairs.
3. Existing rates will not adequately fund system replacement and major capital project needs.
4. Existing rates will not adequately fund recommended reserve fund balances.

## **Wastewater Rate Recommendations**

Based on the findings of this wastewater rate analysis, we recommend that the City adopt the following items:

1. The proposed wastewater rate structure (see Table E2 on page 10). The rate structure adequately provides for ongoing costs and debt service and allows for funding of reserves for unscheduled expenses (see Chart E4 on page 11).
2. A policy of targeting an operating fund balance of 90 days of annual operations and maintenance expenses to ensure that funds are available for emergency purposes and to mitigate future rate shocks.
3. A policy of setting aside funds annually in a CIP reserve account to provide for future system repairs and replacement.

## **Suggested Financial Policies**

As part of our recommendations, we suggest the City consider and review potential implementation of the following financial policies related to the management and planning of the water and wastewater utilities. The objectives of setting financial policies would be to 1) guide City Council and management policy decisions that have significant fiscal impact; 2) set forth operating principles that minimize the cost of utility operations and financial risk; 3) maintain appropriate financial capacity for present and future needs; and, 4) promote sound financial management by providing accurate and timely information on each utility's financial condition. Listed below are the suggested policy items:

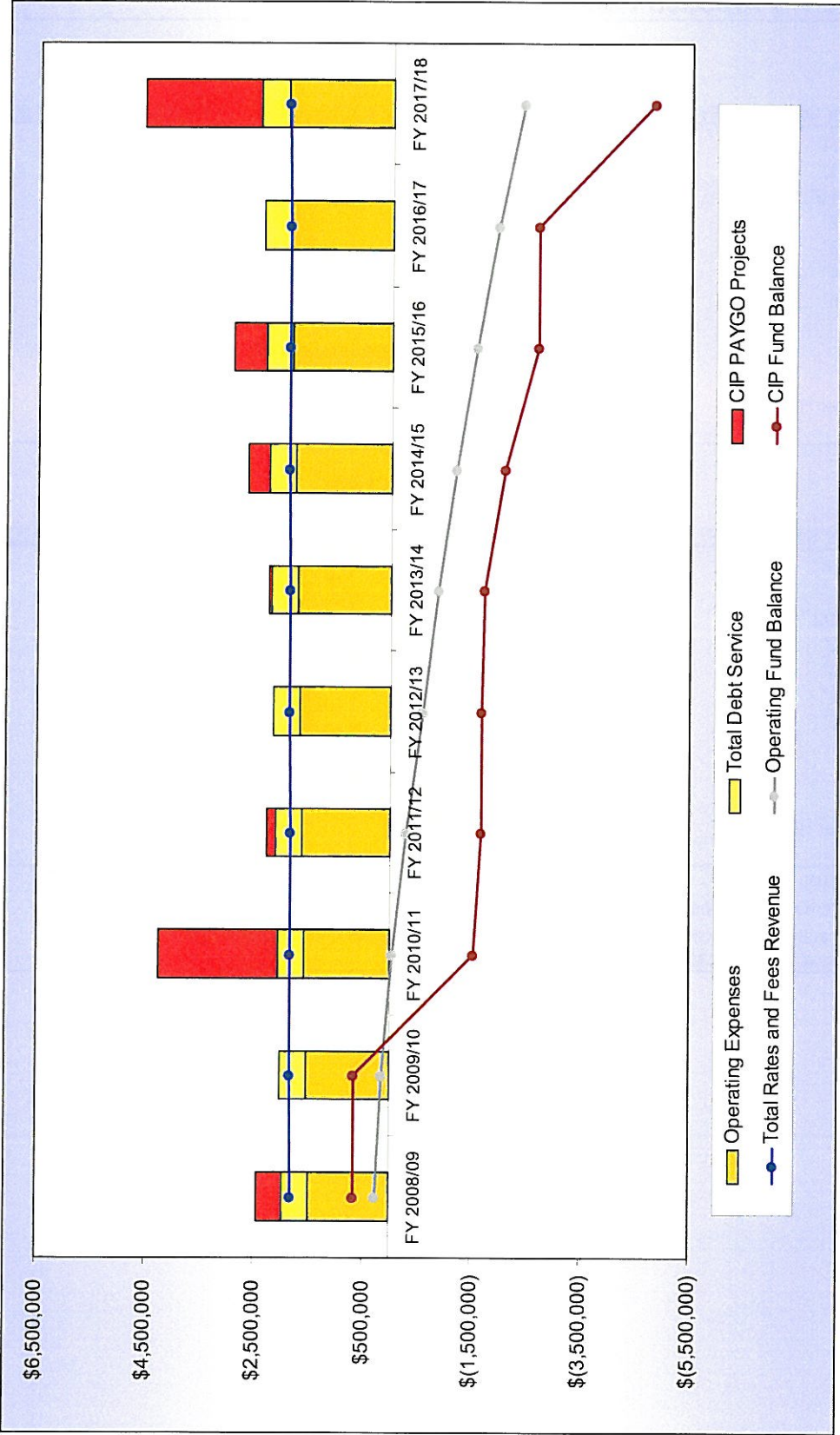
1. Utility rates shall be reviewed annually and adjusted, if necessary, to reflect operational and capital cost increases, maintain bond covenant instructions and minimize future potential for large rate increases.
2. Utility rate studies shall be conducted on a regular basis, e.g. every five years, to ensure the financial viability of each utility and to ensure cost of service principles are met.
3. Rates should be consistent with Proposition 218 property-related fee cost of service principles and established using generally accepted rate setting methodologies including a revenue requirements analysis, cost of service analysis and rate design analysis.
4. Fund balances in each utility enterprise fund shall be maintained at levels established through rate studies to meet operational, capital and contingency needs. At the time of this rate study, the policies for reserve level funding are as follows:
  - ♦ Operating Reserve Balance equal to ninety (90) days of annual operating expenditures.

- ♦ Replacement Reserve Balance should be based on the annual depreciation expense of each utility's infrastructure. The City should annually monitor the financial status of each Utility to determine if an accrual of a Repair and Replacement Reserve is possible.

Excess fund balances shall be used to off-set future rate increases, fund approved capital projects, and/or meet unexpected or emergency cost demands of each utility.



**Chart E1: Projections Using Current Water Rates**



**Table E1: Proposed Water Rate Schedule**

<u>Monthly Meter Charge<sup>1</sup></u>						
Meter Size	FY 2008/2009	FY 2009/2010	FY 2010/2011	FY 2011/2012	FY 2012/2013	
3/4"	\$ 19.97	\$ 21.77	\$ 22.64	\$ 23.55	\$ 24.49	
1"	27.96	30.48	31.70	32.97	34.28	
1 1/2"	35.95	39.19	40.76	42.39	44.08	
2"	57.92	63.14	65.66	68.29	71.02	
3"	219.71	239.48	249.06	259.02	269.38	
4"	279.63	304.79	316.98	329.66	342.85	
6"	419.44	457.19	475.48	494.49	514.27	
<u>Consumption Rates per HCF (Hundred Cubic Feet)<sup>2</sup></u>						
Charge per HCF	\$ 3.65	\$ 3.98	\$ 4.14	\$ 4.30	\$ 4.48	

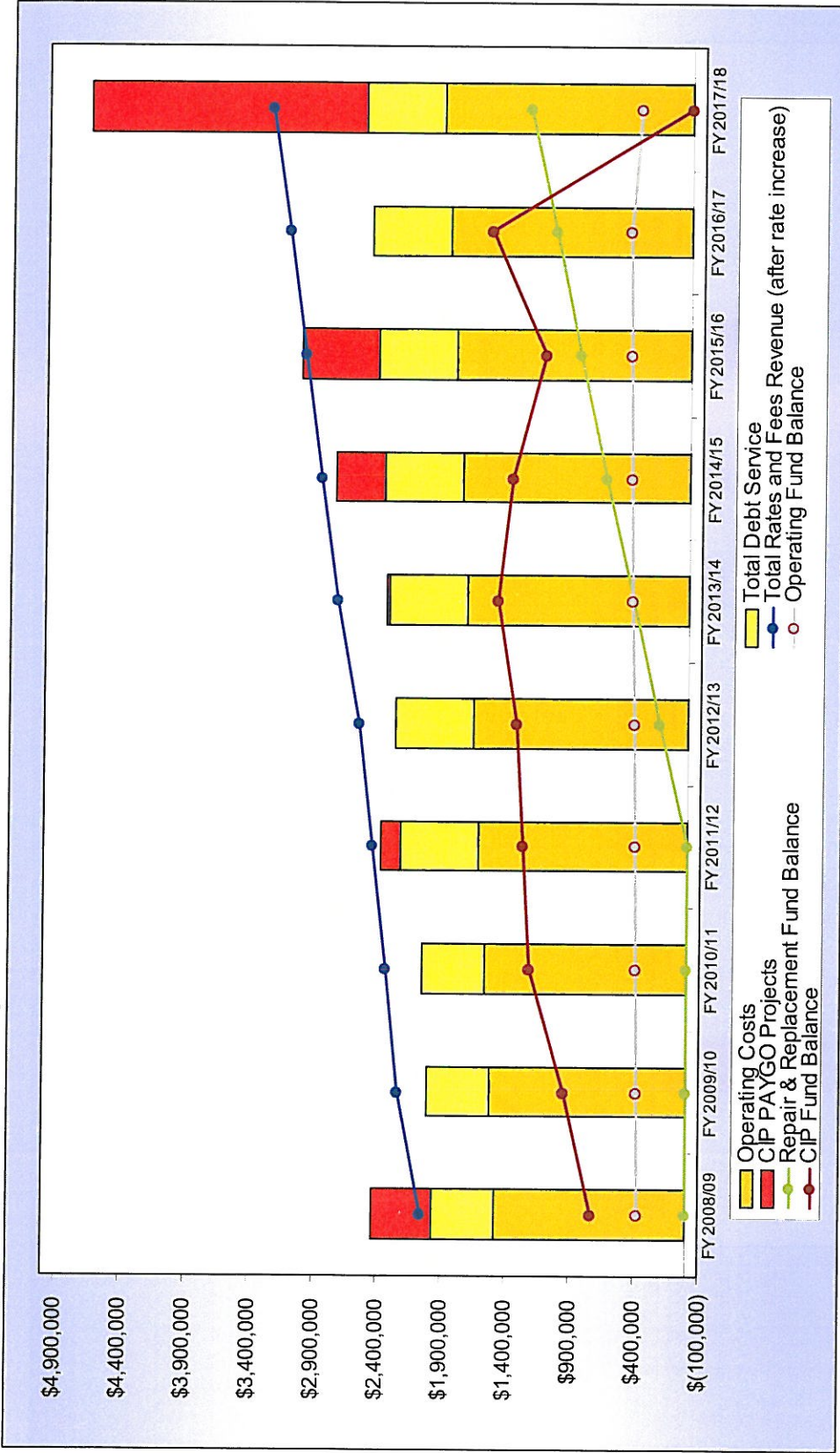
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<u>Monthly Meter Charge<sup>1</sup></u>						
Meter Size	FY 2013/2014	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018	
3/4"	\$ 25.47	\$ 26.49	\$ 27.55	\$ 28.65	\$ 29.79	
1"	35.66	37.08	38.57	40.11	41.71	
1 1/2"	45.84	47.68	49.58	51.57	53.63	
2"	73.86	76.81	79.89	83.08	86.41	
3"	280.16	291.36	303.02	315.14	327.74	
4"	356.56	370.83	385.66	401.09	417.13	
6"	534.85	556.24	578.49	601.63	625.69	
<u>Consumption Rates per HCF (Hundred Cubic Feet)<sup>2</sup></u>						
Charge per HCF	\$ 4.66	\$ 4.84	\$ 5.04	\$ 5.24	\$ 5.45	

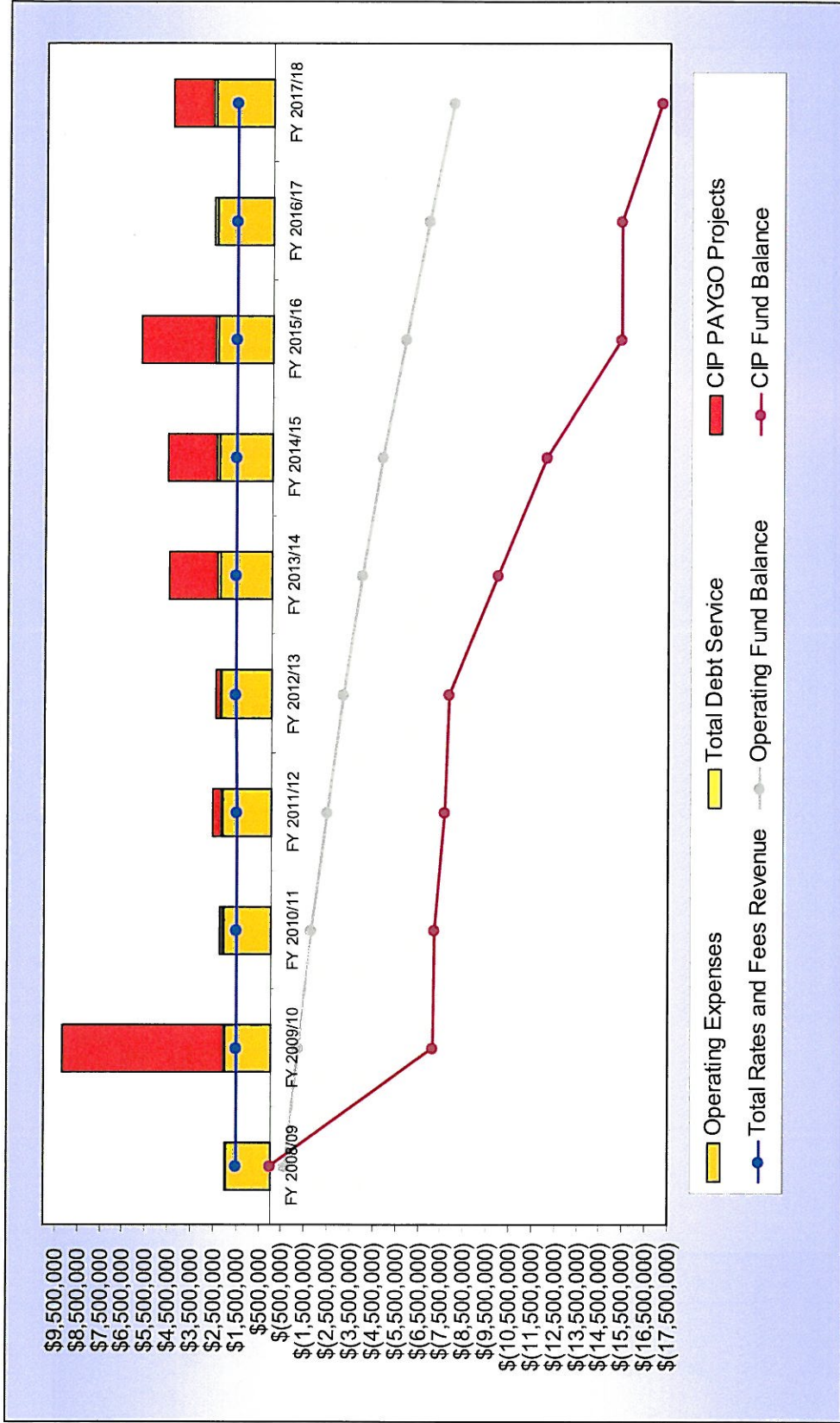
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Billing Notes:  
<sup>1</sup> The Meter Charge will be billed monthly.  
<sup>2</sup> The Consumption Charge will be billed monthly. The rates are per hundred cubic feet of water usage.  
 Source: City of Fort Bragg; MuniFinancial.

**Chart E2: Projections Using Proposed Water Rates**



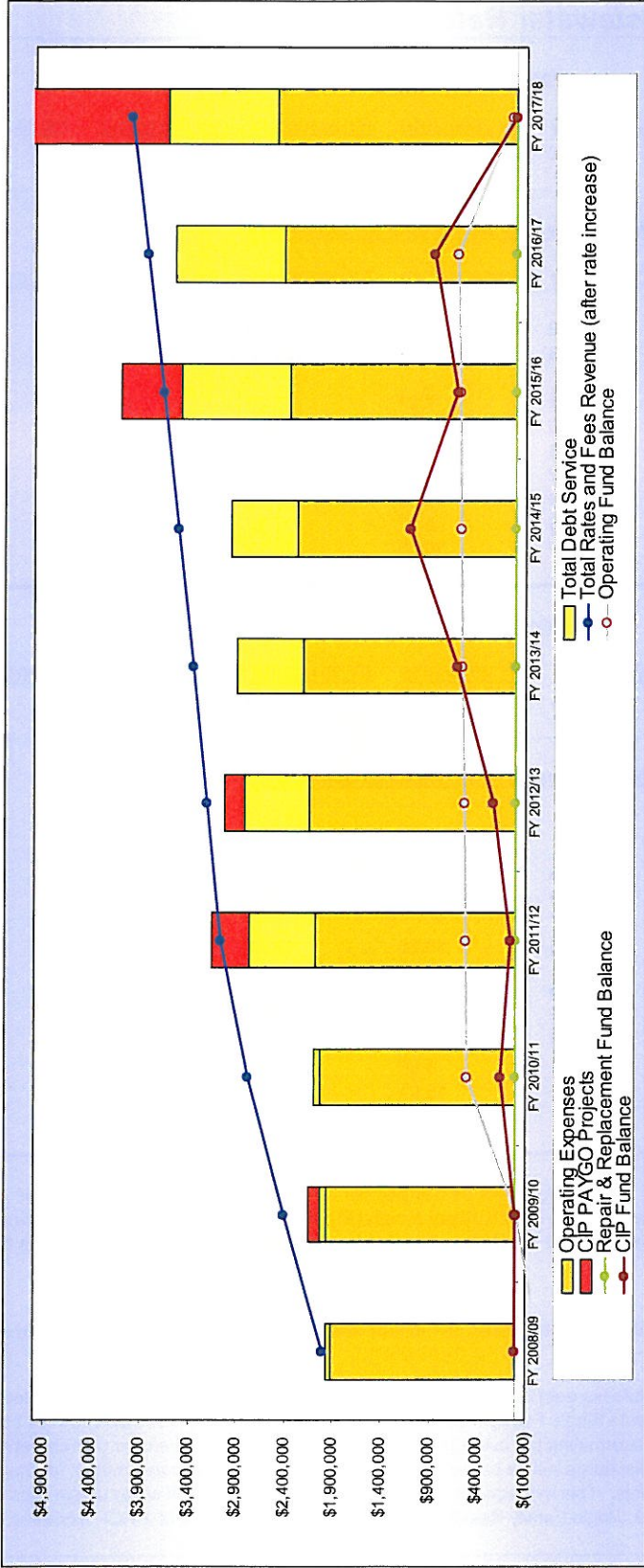
**Chart E3: Projections Using Current Wastewater Rates**



**Table E2: Proposed Wastewater Rate Schedule**

<u>Monthly Base Charge</u> <sup>1</sup>					
Charge Per Unit	FY 2008/2009	FY 2009/2010	FY 2010/2011	FY 2011/2012	FY 2012/2013
	\$ 14.50	\$ 17.40	\$ 20.01	\$ 22.02	\$ 22.90
<u>Discharge Rates per HCF (Hundred Cubic Feet)</u> <sup>2</sup>					
Customer Class	FY 2008/2009	FY 2009/2010	FY 2010/2011	FY 2011/2012	FY 2012/2013
<b>Residential</b>					
Single Family Residential <sup>3</sup>	\$ 4.13	\$ 4.96	\$ 5.70	\$ 6.27	\$ 6.53
Mobile Home	4.13	4.96	5.70	6.27	6.53
<b>Commercial</b>					
Multi Commercial	6.01	7.21	8.29	9.12	9.49
Very Low Strength	3.30	3.95	4.55	5.00	5.20
Low Strength	3.53	4.23	4.87	5.35	5.57
Medium Low Strength	3.92	4.70	5.41	5.95	6.18
Domestic Strength	4.13	4.96	5.70	6.27	6.53
Medium Strength	5.18	6.22	7.15	7.86	8.18
High Strength	8.79	10.55	12.13	13.34	13.87
<u>Monthly Base Charge</u> <sup>1</sup>					
Charge Per Unit	FY 2013/2014	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018
	\$ 23.81	\$ 24.76	\$ 25.76	\$ 26.79	\$ 27.86
<u>Discharge Rates per HCF (Hundred Cubic Feet)</u> <sup>2</sup>					
Customer Class	FY 2013/2014	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018
<b>Residential</b>					
Single Family Residential	\$ 6.79	\$ 7.06	\$ 7.34	\$ 7.63	\$ 7.94
Mobile Home	6.79	7.06	7.34	7.63	7.94
<b>Commercial</b>					
Multi Commercial	9.86	10.26	10.67	11.10	11.54
Very Low Strength	5.41	5.63	5.85	6.09	6.33
Low Strength	5.79	6.02	6.26	6.51	6.77
Medium Low Strength	6.43	6.69	6.96	7.24	7.52
Domestic Strength	6.79	7.06	7.34	7.63	7.94
Medium Strength	8.51	8.85	9.20	9.57	9.95
High Strength	14.43	15.01	15.61	16.23	16.88
<b>Billing Notes:</b>					
<p><sup>1</sup> The Base Charge will be billed monthly. Each account will be charged per dwelling and/or commercial unit. For example, a duplex would be charged a base charge of \$29.00 per month (\$14.50 X 2 Units). A commercial building with six units would be charged \$87.00 per month (14.50 X 6 Units). The number of units per account is based on the City of Fort Bragg's records.</p> <p><sup>2</sup> The Discharge Rate will be billed monthly and will be based on monthly water consumption for all but Single Family Residential (see footnote 3).</p> <p><sup>3</sup> Single Family Residential (including Mobile Homes) discharge rates will be calculated by multiplying the estimated sewer discharge for each account by the applicable Single Family Residential rate. The estimated sewer discharge will be calculated annually for each account by determining the average monthly water usage from November through February. For new accounts, the estimated sewer discharge will be based on the average monthly water consumption for the prior year for all single family residential accounts. This average will be utilized for new accounts until water usage from November to February is established. For Single Family Residential a minimum billing amount of 2 HCF (Hundred Cubic Feet) will apply.</p>					

**Chart E4: Projections Using Proposed Wastewater Rates**



## **INTRODUCTION – WATER & WASTEWATER STUDY**

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This report documents the results of the water and wastewater rate studies conducted for the City of Fort Bragg by MuniFinancial. The primary purpose of this study is to develop rate structures that will adequately fund the annual operations and capital needs of each utility.

These rate studies incorporate utility revenues, operating expenses, debt service, and capital expenditures data provided by the City. The objective of each rate study is to develop rate schedules for the both utilities during the ten-year study period. The projected rate schedules are designed to produce revenues for both utilities to pay administrative, operations, maintenance, capital improvement, and debt service expenditures, in addition to maintaining fund balances at reasonable levels and for the water utility within guidelines endorsed by the American Water Works Association (AWWA).

The results of the rate study are derived from projected financial analyses of both utilities based upon the budgeted revenues and expenses of fiscal year ending June 30, 2008 (the base year). A ten-year projection of operating results to determine future revenue requirements was developed for the both utilities for the fiscal years ending June 30, 2009 through 2018 (the study period).

## Current Rates

The City's current water rate structure is as listed below:

**Table 1: Current Water Rates**

DESCRIPTION	IN OR OUT OF CITY	METER SIZE IN INCHES	MINIMUM BI-MONTHLY SERVICE FEE	CHARGE PER 100 CUBIC FEET
METERED SERVICE	IN	0.75	\$ 30.13	\$ 3.15
METERED SERVICE	IN	1.00	\$ 50.32	\$ 3.15
METERED SERVICE	IN	1.50	\$ 100.33	\$ 3.15
METERED SERVICE	IN	2.00	\$ 160.59	\$ 3.15
METERED SERVICE	IN	3.00	\$ 301.30	\$ 3.15
METERED SERVICE	IN	4.00	\$ 502.27	\$ 3.15
METERED SERVICE	IN	6.00	\$ 1,004.23	\$ 3.15
METERED SERVICE	OUT	0.75	\$ 60.26	\$ 6.30
METERED SERVICE	OUT	1.00	\$ 100.64	\$ 6.30
METERED SERVICE	OUT	1.50	\$ 200.66	\$ 6.30
METERED SERVICE	OUT	2.00	\$ 321.18	\$ 6.30
METERED SERVICE	OUT	3.00	\$ 602.60	\$ 6.30
METERED SERVICE	OUT	4.00	\$ 1,000.54	\$ 6.30
METERED SERVICE	OUT	6.00	\$ 2,008.46	\$ 6.30
SCHOOL FIELD (100%)	IN	2.00	\$ 160.59	\$ 3.15
SCHOOL FIELD (50%)	IN	2.00	\$ 80.30	\$ 1.58
WATER HAUL (CHARGE PER 1,000 GALLONS)				\$ 60.26

Source: City of Fort Bragg

## Current and Projected Customers

Table 2 shows the current number of water customer accounts by meter size as well as the total number of meter equivalents based on the equivalent meter factors illustrated in the table. Equivalent meter factors represent the burden each user group places upon the water utility as measured by an equivalent meter index. This index should reflect the level of service to each customer group based on their potential commodity demand (the index used in the study was obtained from the AWWA Manual M1 meter equivalents table). Table 3 depicts the projected water consumption for each fiscal year in the study period.



**Table 2: Current and Projected Number of Equivalent Meters**

Meter Size	Meters 2007		Equivalent Ratio		Equivalent Meters 2007		Equivalent Meters				
	Meters 2007	Equivalent Ratio	Meters 2007	Equivalent Ratio	Meters 2007	Equivalent Meters	FY 2008/2009	FY 2009/2010	FY 2010/2011	FY 2011/2012	
3/4"	2,421	1.00	2,421	1.00	2,421	2,433	2,445	2,457	2,469		
1"	92	1.40	129	1.40	130	131	131	131	132		
1 1/2"	66	1.80	119	1.80	119	119	120	120	121		
2"	54	2.90	156	2.90	156	156	157	158	159		
3"	8	11.00	83	11.00	83	83	83	84	84		
4"	4	14.00	56	14.00	56	56	57	57	57		
<b>Total</b>	<b>2,644</b>		<b>2,963</b>		<b>2,977</b>	<b>2,992</b>	<b>3,007</b>	<b>3,022</b>			
<b>Meter Size</b>		<b>FY 2012/2013</b>	<b>FY 2013/2014</b>	<b>FY 2014/2015</b>	<b>FY 2015/2016</b>	<b>FY 2016/2017</b>	<b>FY 2017/2018</b>				
3/4"		2,482	2,494	2,507	2,519	2,532	2,544				
1"		133	133	134	135	135	136				
1 1/2"		121	122	123	123	124	125				
2"		160	160	161	162	163	164				
3"		85	85	85	86	86	87				
4"		57	58	58	58	59	59				
<b>Total</b>		<b>3,037</b>	<b>3,053</b>	<b>3,068</b>	<b>3,083</b>	<b>3,099</b>	<b>3,114</b>				

Note: Assumes a growth rate of 0.5%. Meters 2007 is calculated as the average number of meters during each billing period in 2007.  
Source: City of Fort Bragg; MuniFinancial.

**Table 3: Projected Annual Water Consumption (HCF)**

	<b>FY 2003/04</b>	<b>FY 2004/05</b>	<b>FY 2005/06</b>	<b>FY 2006/07</b>	<b>Average</b>
Historical Consumption	357,160	331,016	335,690	329,668	338,384
Projected Annual Consumption	<b>FY 2008/2009</b> 340,075	<b>FY 2009/2010</b> 341,776	<b>FY 2010/2011</b> 343,485	<b>FY 2011/2012</b> 345,202	<b>FY 2012/2013</b> 346,928
Projected Annual Consumption	<b>FY 2013/2014</b> 348,663	<b>FY 2014/2015</b> 350,406	<b>FY 2015/2016</b> 352,158	<b>FY 2016/2017</b> 353,919	<b>FY 2017/2018</b> 355,688

Note: Assumes a consumption growth rate of 0.5%.

Source: City of Fort Bragg; MuniFinancial.

## **ANNUAL REVENUE REQUIREMENTS**

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As in most cities, the City of Fort Bragg water utility is operated on an enterprise basis with expenses and revenues accounted for separately from the City's general and other funds. The City's water enterprise fund must receive sufficient total revenue to ensure proper operation and maintenance of the department as well as preserve the financial integrity of the utility and the fund. Adequacy of water revenues can be measured by comparing the water system's revenue requirements to be met to the water rates it charges to its customers.

### **Approaches to Determining Revenue Requirements**

In order to develop adequate revenues from a system of water rates, the annual revenue requirements of the water utility must be determined. There are two commonly accepted bases for determining annual revenue requirements in order to develop a financially sound water rate structure. These approaches are the "cash needs" approach and the "utility" approach. Both approaches are endorsed by the AWWA.

The "cash needs" basis is typically used by municipally-owned water utilities when establishing rates for their customers. Under this approach, the basic revenue-requirement components include:

- ♦ Operating and maintenance (O&M) expenses
- ♦ Debt service costs (principal and interest on water utility-related debt instruments)
- ♦ Capital expenditures funded directly from current revenues or accruals on a pay-as-you-go basis
- ♦ Other elements such as interdepartmental expenses (cost allocation), in-lieu taxes, and interest earnings (considered as a credit to the expenses)

The "utility" basis for determining annual revenue requirements is typically used by regulated investor-owned utilities and regulated municipal utilities. Items normally included in annual revenue requirements based on this approach include:

- ♦ Operating and maintenance (O&M) expenses
- ♦ In-lieu taxes
- ♦ Depreciation expense
- ♦ Fair rate of return on the rate base

To determine the revenue requirements for the City's water utility we have used the "cash" basis.

## **Current and Future Revenue Requirements**

The annual revenue requirements are derived from maintenance and operations costs, debt service expenses, and projected capital expense items. Interest earnings, fines and forfeitures, and other miscellaneous income may offset some of these expenses, but the majority of the costs should be recovered via customer rates and charges.

The City prepares an annual budget for the water system that itemizes all the expenditures for each fiscal year. These expenses include personnel costs, maintenance and operations, equipment repair and replacement, and Capital Improvement Program (CIP) costs. For the study we also established three new reserves and added line items within the budget analysis to account for the collection of funds in these reserve accounts. The three reserve funds are as follows:

1. A Repair & Replacement Reserve - to account for repair and replacement of system components due to wear and tear. The reserve amount is determined based on the depreciation of the Water system. In order to minimize rate increases, accrual does not begin until FY 2012/2013.
2. A CIP Reserve - to set aside funds for the replacement of major systems in the City's facilities.
3. An Operating Reserve - to ensure that funds are available for emergency purposes and to mitigate rate shocks.

The Water system activities included in our analysis were gathered from the City's adopted budgets for fiscal year 06/07 and fiscal year 07/08 as well as from information provided by the City.

## **Historical Revenues and Expenses**

Base year income and expense data for the Water system were estimated for fiscal year 2008/2009 by using the Water system budgets for fiscal years 2003/04 through 2007/08 as well as using a mid year update provided by the City for FY 2006/07 and FY 2007/08. The historic financial results of the Water system are shown in Table 4.

**Table 4: Historic Financial Results**

	2003/04 Actual	2004/05 Actual	2005/06 Actual	2006/07 Actual	2007/08 Projected
<b>REVENUES</b>					
<b>Charges for Services</b>					
Water Sales - In City	\$ 1,408,671	\$ 1,334,065	\$ 1,393,228	\$ 1,487,141	\$ 1,633,625
Water Sales - Outside City	147,871	153,717	131,204	126,471	135,000
Utility Penalties	17,940	20,771	21,179	23,586	24,000
Permit Inspection Fee	250	700	500	400	100
Turn Off Fee	3,440	7,190	7,800	8,680	7,000
Maintenance Reimbursement	-	-	1,697	1,493	-
<b>Total Charges for Services</b>	<b>1,578,172</b>	<b>1,516,443</b>	<b>1,555,608</b>	<b>1,647,771</b>	<b>1,799,725</b>
<b>Use of Money and Property</b>					
Investment Interest Earned	12,937	14,534	87,892	80,000	50,000
C.O.P. Investment Interest	6,122	382	-	-	-
<b>Total Use of Money and Property</b>	<b>19,059</b>	<b>14,916</b>	<b>87,892</b>	<b>80,000</b>	<b>50,000</b>
<b>Intergovernmental</b>					
State Disaster Reimbursement	44,975	-	-	-	-
<b>Total Intergovernmental</b>	<b>44,975</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Miscellaneous Revenue</b>					
Miscellaneous	968	4,804	889	1,000	-
Transfer In From Other Funds	1,687,119	404,088	342,396	235,000	50,400
Insurance Refunds	-	(48,322)	4,030	-	-
<b>Total Miscellaneous Revenue</b>	<b>1,688,087</b>	<b>360,570</b>	<b>347,315</b>	<b>236,000</b>	<b>50,400</b>
<b>TOTAL REVENUES</b>	<b>\$ 3,330,293</b>	<b>\$ 1,891,929</b>	<b>\$ 1,990,815</b>	<b>\$ 1,963,771</b>	<b>\$ 1,900,125</b>
<b>EXPENDITURE SUMMARY</b>					
<b>Operations and Maintenance</b>					
Salaries and Wages	42,381	46,951	35,505	61,100	64,965
Employee Benefits	14,150	17,699	18,906	21,939	26,895
Purchased Services	200,463	250,210	401,533	486,016	273,040
Supplies and Materials	58,220	78,066	68,648	89,850	94,100
Other Expenditures	374,522	84,887	50,678	156,615	75,813
Salary Benefit Allocation	497,567	608,627	613,473	707,802	899,494
<b>Total O&amp;M</b>	<b>1,187,303</b>	<b>1,086,440</b>	<b>1,188,743</b>	<b>1,523,322</b>	<b>1,434,307</b>
<b>Other Expenditures</b>					
Transfers Out to Other Funds	-	-	-	-	-
Existing Debt Service	372,557	112,725	421,441	431,360	495,668
Capital Expenditures	290,141	242,224	126,371	115,280	350,438
Reserve Payments	-	-	-	-	-
<b>Total Other Expenditures</b>	<b>662,698</b>	<b>354,949</b>	<b>547,812</b>	<b>546,640</b>	<b>846,106</b>
<b>TOTAL EXPENDITURES</b>	<b>\$ 1,850,001</b>	<b>\$ 1,441,389</b>	<b>\$ 1,736,555</b>	<b>\$ 2,069,962</b>	<b>\$ 2,280,413</b>
<b>REVENUES LESS EXPENDITURES</b>	<b>\$ 1,480,292</b>	<b>\$ 450,540</b>	<b>\$ 254,260</b>	<b>\$ (106,191)</b>	<b>\$ (380,288)</b>

Source: City of Fort Bragg.

## Future Revenue Requirements

An evaluation of future revenue requirements should focus on four specific areas. These areas are increases in operating expenses, capital improvement costs, requirements for debt service, and the maintenance of reserves. The following sections discuss the impact of these four factors on the water utility revenue requirements.

### Operating Expense Projections

For the purpose of determining annual revenue requirements as a basis to set future Water rates, we used a projection period of ten years. During this period (FY 2008/2009 through FY 2017/2018), costs are assumed to increase due to inflationary pressures. The study assumes a customer growth rate of one-half percent (0.5%), an expenditure growth rate of three percent (3%), and a personnel cost growth rate of three percent (3%) to project the future costs of the system.

### **Capital Improvement Costs**

The City maintains an inventory of Capital Improvement Projects (CIP) for the funding of annual capital projects. The values used in this analysis are based on cost estimates provided by the City. Construction costs were escalated annually by a factor of 4.04%, based on the average annual percentage change between 2003 and 2007 in the Engineering News Record Construction Cost Index.

Table 5 presents the operations CIP over the ten-year planning period of this study (note that it is assumed that all CIP costs are operations-related, i.e. not driven by growth, and will be funded on a “pay-as-you-go” basis as well as with an Infrastructure Bank loan).



### **Debt Service**

The Water utility currently is making payments in the amount of \$116,275 per year for a \$2,267,363 Department of Water Resources loan. The Water utility is also making payments of approximately \$370,000 per year for the Water Enterprise 2003 Certificates of Participation (COPs).

We also anticipate an Infrastructure Bank Loan to cover some of the CIP costs. The total loan amount is estimated at \$2,000,000 with an annual debt service payment of \$121,000 (based on an interest rate of 3.6% and a 30-year term).

### **Reserve Funds**

The operating fund for the Water utility is projected to have a balance of \$1,290,203 as of June 30, 2007, according to the City's mid year estimate. We recommended that the City adopt a policy of maintaining a designated balance in the operating fund (such as three months of operating expenses (25%) or any other amount approved by the Council), in order to satisfy expense obligations as cash flow fluctuates during the year. At the end of each fiscal year, any funds in the Operating Reserve in excess of the 25% threshold are assumed to be transferred to the CIP Fund.

In addition, funds equaling the depreciation expense should be collected in order to ensure the availability of funds for necessary system repair and maintenance. The Repair and Replacement Reserve Fund accrual begins in FY 2012/2013.

### **Water Revenue Requirements**

Tables 6 and 7 depict the annual revenue requirements of the Water system for each year of the study period.

Fiscal year 2007/2008 is being used as the base year for the study. The study assumes a customer growth rate of one-half percent (0.5%) and expenditure and personnel growth rate of three percent (3%) to project the future costs of the system. The Desired Operating Reserve Fund Balance is set at ninety (90) days of O&M expenses (25%). The beginning operating fund balance for fiscal year 2008/2009 is estimated at \$358,577 (line 68) after a transfer of any O&M funds above the 25% threshold to the CIP Fund.



**Table 6: Revenue Requirements Fiscal Years 2008/09 to 2012/13**

Description	FY 2007/2008	FY 2008/2009	FY 2009/2010	FY 2010/2011	FY 2011/2012	FY 2012/2013
<b>Operating Revenue</b>						
1 Water Sales - In City	\$ 1,633,625	\$ 1,641,793	\$ 1,650,002	\$ 1,658,252	\$ 1,666,543	\$ 1,674,876
2 Water Sales - Outside City	135,000	135,675	136,353	137,035	137,720	138,409
3 Utility Penalties	24,000	20,000	20,000	20,000	20,000	20,000
4 Permit Inspection Fee	100	600	600	600	600	600
5 Turn Off Fee	7,000	7,000	7,000	7,000	7,000	7,000
6 Total Operating Revenue	1,799,725	1,805,068	1,813,955	1,822,887	1,831,864	1,840,885
7						
8 Additional Revenue Required						
9 Year Revenue Increase						
10 FY 2008/2009 10.00%		177,747	178,636	179,529	180,426	181,328
11 FY 2009/2010 9.00%			176,849	177,733	178,622	179,515
12 FY 2010/2011 4.00%				86,102	86,532	86,965
13 FY 2011/2012 4.00%					89,994	90,444
14 FY 2012/2013 4.00%						94,062
15 FY 2013/2014 4.00%						
16 FY 2014/2015 4.00%						
17 FY 2015/2016 4.00%						
18 FY 2016/2017 4.00%						
19 FY 2017/2018 4.00%						
20 Total Additional Operating Revenue		177,747	355,485	443,364	535,575	632,314
21						
22 Total Required Revenue	\$ 1,799,725	\$ 1,982,815	\$ 2,169,440	\$ 2,266,251	\$ 2,367,438	\$ 2,473,199
23						
24 Applications of Funds						
25 Operating Costs						
26 Salaries and Wages	64,965	66,914	68,921	70,989	73,119	75,312
27 Employee Benefits	26,895	27,702	28,533	29,389	30,271	31,179
28 Purchased Services	273,040	281,231	289,668	298,358	307,309	316,528
29 Supplies and Materials	94,100	96,923	99,831	102,826	105,910	109,088
30 Other Expenditures	75,813	78,087	80,430	82,843	85,328	87,888
31 Salary Benefit Allocation	899,494	926,479	954,273	982,901	1,012,388	1,042,760
32 Total Operating Expenses	1,434,307	1,477,336	1,521,656	1,567,306	1,614,325	1,662,755
33						
34 Net Operating Income (Loss)	365,418	505,479	647,784	698,945	753,113	810,444
35						
36 Debt Service						
37 Current Debt Service	\$495,668	\$491,524	\$486,795	\$485,760	\$488,795	\$490,930
38 Proposed Loan	-	-	-	-	121,000	121,000
39 Total Debt Service	495,668	491,524	486,795	485,760	609,795	611,930
40						
41 Debt Coverage Ratio	0.74	1.03	1.33	1.44	1.24	1.32
42						
43 Non-Operating Revenue						
44 Investment Interest Earned	50,000	53,543	51,640	48,696	58,840	65,735
45 Miscellaneous	-	-	-	-	-	-
46 Total Non-Operating Revenue	50,000	53,543	51,640	48,696	58,840	65,735
47						
48 Interfund Loan Information						
49 Interfund Loan to Wastewater	(280,927)	-	-	-	-	-
50 Wastewater Interfund Loan Payback	-	16,181	16,181	16,181	16,181	16,181
51 Total Interfund Loan	(280,927)	16,181	16,181	16,181	16,181	16,181
52						
53 Transfers						
54 Transfers In From Other Funds	50,400	-	-	-	-	-
55 Total Transfers	50,400	-	-	-	-	-
56						
57 Capital Projects						
58 CIP PAYGO Projects	350,438	460,000	-	-	152,030	-
59 Capital Projects Fund	(350,438)	(460,000)	-	-	(152,030)	-
60 Repair & Replacement Reserve Collection	-	-	-	-	-	212,677
61 Total Capital Projects	-	-	-	-	-	212,677
62						
63 Net Income (Loss)	\$ (310,777)	\$ 83,679	\$ 228,810	\$ 278,063	\$ 218,339	\$ 67,753
64						
65 Fund Information						
66						
67 Water Enterprise O&M Fund						
68 Beginning Operating Fund Balance	1,290,203	358,577	369,334	380,414	391,826	403,581
69 Deposit (Withdrawals)	(310,777)	83,679	228,810	278,063	218,339	67,753
70 Sub Total O&M Fund	\$ 979,427	\$ 442,256	\$ 598,144	\$ 658,477	\$ 610,166	\$ 471,334
71						
72 Reserve Balance Percent of O&M	25%	25%	25%	25%	25%	25%
73 Desired Operating Reserve Balance	358,577	369,334	380,414	391,826	403,581	415,689
74 Excess (Deficit) O&M / Excess to CIP Fund	620,850	72,922	217,730	266,650	206,585	55,646
75 Ending O&M Fund Balance	\$ 358,577	\$ 369,334	\$ 380,414	\$ 391,826	\$ 403,581	\$ 415,689
76						
77 Repair & Replacement Reserve Fund						
78 Beginning R&R Fund Balance	-	-	-	-	-	-
79 Deposit (Withdrawals)	-	-	-	-	-	212,677
80 Ending Repair & Replacement Reserve Fund	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 212,677
81						
82 Capital Projects Fund						
83 Beginning CIP Fund Balance	844,792	1,115,204	728,125	945,855	1,212,505	1,267,060
84 (Withdrawals for CIP Projects)	(350,438)	(460,000)	-	-	(152,030)	-
85 Deposits excess O&M Funds	620,850	72,922	217,730	266,650	206,585	55,646
86 Ending Capital Projects Fund	\$ 1,115,204	\$ 728,125	\$ 945,855	\$ 1,212,505	\$ 1,267,060	\$ 1,322,706

Sources: City of Fort Bragg; MuniFinancial

**Table 7: Revenue Requirements Fiscal Years 2013/14 to 2017/18**

Description	FY 2013/2014	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018
<b>Operating Revenue</b>					
1 Water Sales - In City	\$ 1,683,250	\$ 1,691,667	\$ 1,700,125	\$ 1,708,626	\$ 1,717,169
2 Water Sales - Outside City	139,101	139,796	140,495	141,198	141,904
3 Utility Penalties	20,000	20,000	20,000	20,000	20,000
4 Permit Inspection Fee	600	600	600	600	600
5 Turn Off Fee	7,000	7,000	7,000	7,000	7,000
6 Total Operating Revenue	1,849,951	1,859,063	1,868,220	1,877,424	1,886,673
7					
<b>Additional Revenue Required</b>					
9 Year Revenue Increase					
10 FY 2008/2009 10.00%	182,235	183,146	184,062	184,982	185,907
11 FY 2009/2010 9.00%	180,413	181,315	182,221	183,133	184,048
12 FY 2010/2011 4.00%	87,400	87,837	88,276	88,718	89,161
13 FY 2011/2012 4.00%	90,896	91,350	91,807	92,266	92,728
14 FY 2012/2013 4.00%	94,532	95,004	95,479	95,957	96,437
15 FY 2013/2014 4.00%	98,313	98,805	99,299	99,795	100,294
16 FY 2014/2015 4.00%	-	102,757	103,271	103,787	104,306
17 FY 2015/2016 4.00%	-	-	107,401	107,938	108,478
18 FY 2016/2017 4.00%	-	-	-	112,256	112,817
19 FY 2017/2018 4.00%	-	-	-	-	117,330
20 Total Additional Operating Revenue	733,789	840,215	951,817	1,068,832	1,191,506
21					
22 Total Required Revenue	\$ 2,583,740	\$ 2,699,278	\$ 2,820,038	\$ 2,946,256	\$ 3,078,179
23					
<b>Applications of Funds</b>					
<b>Operating Costs</b>					
26 Salaries and Wages	77,572	79,899	82,296	84,765	87,308
27 Employee Benefits	32,114	33,077	34,070	35,092	36,145
28 Purchased Services	326,024	335,805	345,879	356,255	366,943
29 Supplies and Materials	112,360	115,731	119,203	122,779	126,463
30 Other Expenditures	90,525	93,240	96,038	98,919	101,886
31 Salary Benefit Allocation	1,074,043	1,106,264	1,139,452	1,173,636	1,208,845
32 Total Operating Expenses	1,712,638	1,764,017	1,816,937	1,871,445	1,927,589
33					
34 Net Operating Income (Loss)	871,103	935,261	1,003,100	1,074,810	1,150,590
35					
<b>Debt Service</b>					
37 Current Debt Service	\$487,311	\$483,608	\$488,610	\$487,870	\$487,078
38 Proposed Loan	121,000	121,000	121,000	121,000	121,000
39 Total Debt Service	608,311	604,608	609,610	608,870	608,078
40					
41 Debt Coverage Ratio	1.43	1.55	1.65	1.77	1.89
42					
<b>Non-Operating Revenue</b>					
44 Investment Interest Earned	72,676	85,887	95,706	97,334	109,507
45 Miscellaneous	-	-	-	-	-
46 Total Non-Operating Revenue	72,676	85,887	95,706	97,334	109,507
47					
<b>Interfund Loan Information</b>					
49 Interfund Loan to Wastewater	-	-	-	-	-
50 Wastewater Interfund Loan Payback	74,748	74,748	74,748	74,748	74,748
51 Total Interfund Loan	74,748	74,748	74,748	74,748	74,748
52					
<b>Transfers</b>					
54 Transfers In From Other Funds	-	-	-	-	-
55 Total Transfers	-	-	-	-	-
56					
<b>Capital Projects</b>					
58 CIP PAYGO Projects	30,474	380,461	593,745	-	2,142,273
59 Capital Projects Fund	(30,474)	(380,461)	(593,745)	-	(1,537,868)
60 Repair & Replacement Reserve Collection	211,519	210,512	206,496	202,930	200,450
61 Total Capital Projects	211,519	210,512	206,496	202,930	804,855
62					
63 Net Income (Loss)	\$ 198,697	\$ 280,777	\$ 357,448	\$ 435,093	\$ (78,088)
64					
<b>Fund Information</b>					
66					
<b>Water Enterprise O&amp;M Fund</b>					
68 Beginning Operating Fund Balance	415,689	428,159	441,004	454,234	467,861
69 Deposit (Withdrawals)	198,697	280,777	357,448	435,093	(78,088)
70 Sub Total O&M Fund	\$ 614,386	\$ 708,936	\$ 798,452	\$ 889,327	\$ 389,774
71					
72 Reserve Balance Percent of O&M	25%	25%	25%	25%	25%
73 Desired Operating Reserve Balance	428,159	441,004	454,234	467,861	481,897
74 Excess (Deficit) O&M / Excess to CIP Fund	186,226	267,932	344,218	421,466	(92,124)
75 Ending O&M Fund Balance	\$ 428,159	\$ 441,004	\$ 454,234	\$ 467,861	\$ 389,774
76					
<b>Repair &amp; Replacement Reserve Fund</b>					
78 Beginning R&R Fund Balance	212,677	424,195	634,707	841,203	1,044,133
79 Deposit (Withdrawals)	211,519	210,512	206,496	202,930	200,450
80 Ending Repair & Replacement Reserve Fund	\$ 424,195	\$ 634,707	\$ 841,203	\$ 1,044,133	\$ 1,244,583
81					
<b>Capital Projects Fund</b>					
83 Beginning CIP Fund Balance	1,322,706	1,478,458	1,365,929	1,116,402	1,537,868
84 (Withdrawals for CIP Projects)	(30,474)	(380,461)	(593,745)	-	(1,537,868)
85 Deposits excess O&M Funds	186,226	267,932	344,218	421,466	-
86 Ending Capital Projects Fund	\$ 1,478,458	\$ 1,365,929	\$ 1,116,402	\$ 1,537,868	\$ -
87					

Sources: City of Fort Bragg, MuniFinancial

## ALLOCATION OF WATER COSTS

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In *Bighorn-Desert View Water Agency v. Verjil*, the California Supreme Court held that water agency's rates were subject to repeal by initiative pursuant to Section 3 of Article XIII C of the California Constitution. Because of the Bighorn decision, water rates in California are now considered property-related fees; therefore the substantive and procedural requirements of California Constitution Articles XIII C and XIII D (Proposition 218) apply to water rate setting. Section 6 of Article XIII D states:

*The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the parcel.*

This utility rate study was performed to allocate the costs of providing service to users in order to ensure that rates are equitable and not unduly discriminatory, thereby satisfying the Proposition 218 requirements. The total cost of serving each customer class is determined by distributing each of the utility cost components among the user classes based upon the respective service requirements of each customer class. Therefore, a true cost of service rate study enables a water utility to adopt rates based on the true costs to each user class. The purposes of this water utility cost of service study include:

- ♦ Proportional allocation of the costs of service to users.
- ♦ Derivation of unit costs to support the development of water rates.

### Cost of Service Analysis

A cost of service analysis converts enterprise-related financing documents to costs incurred by user classes for which rates can be developed. The cost of service study for the City of Fort Bragg is performed in three basic steps.

The first step is called functionalization. Functionalization categorizes cost data in terms of functions performed by a water utility system. The functions identified in this study include operating expenses, debt service, and capital projects.

The second step classifies operating and non-operating expenses of the water facilities to the cost components of volume (base use), extra-capacity, customer billing/administration, and meters & services. This approach is referred to as the base-extra capacity method and is recommended by the American Water Works Association as an appropriate means of equitably allocating costs to customer classes. The cost components are defined as follows:

- ♦ Volume or Base Costs: Volume or base costs vary with the consumption of water by users over a specified period of time and relates to the average annual rates of water demand by system users.

- ♦ Extra-Capacity Costs: Capacity costs vary with the demand, or the rate of flow, of water used by user classes of service in excess of average demand, otherwise known as peak demand.
- ♦ Customer Costs: Customer costs vary with the number of customers, or the addition of customers, served by a water system. These costs are typically fixed utility expenses, regardless of customer consumption.
- ♦ Meters & Services: Costs that are related to the water meters such as maintenance, repair, installation and meter reading.

Table 8 presents the allocation of each expense component (operations, debt service and capital projects) based on its functional category of base, extra-capacity, customer, or meter & services costs.

**Table 8: Functionalization of Water Utility Revenue Requirements**

Description	Water/Variable Costs				Customer/Fixed Costs				Average FY 2008/09 - FY 2017/18				
	Base	Extra-Capacity	Customer Billing/Admin	Meters & Services	Total	Base	Extra-Capacity	Customer Billing/Admin	Meters & Services	Total	Water/Variable Costs	Customer/Fixed Costs	Total
<b>Operating Expenses</b>													
Salaries and Wages	30%	15%	35%	20%	100.0%	\$ 23,013	\$ 11,506	\$ 26,848	\$ 15,342	\$ 76,709			
Employee Benefits	30%	15%	35%	20%	100.0%	9,527	4,764	11,115	6,351	31,757			
Purchased Services	30%	15%	35%	20%	100.0%	96,720	48,360	112,840	64,480	322,400			
Supplies and Materials	30%	15%	35%	20%	100.0%	33,333	16,667	38,889	22,222	111,111			
Other Expenditures	30%	15%	35%	20%	100.0%	26,856	13,428	31,331	17,904	89,518			
Salary Benefit Allocation	30%	15%	35%	20%	100.0%	318,631	159,316	371,736	212,421	1,062,104			
<b>Total Operating Expenses</b>						<b>508,080</b>	<b>254,040</b>	<b>592,760</b>	<b>338,720</b>	<b>1,693,600</b>			
<b>Debt Service</b>													
Current Debt Service	40%	40%	10%	10%	100.0%	195,131	195,131	48,783	48,783	487,828			
Proposed Loan	40%	40%	10%	10%	100.0%	48,400	48,400	12,100	12,100	121,000			
<b>Total Debt Service</b>						<b>243,531</b>	<b>243,531</b>	<b>60,883</b>	<b>60,883</b>	<b>608,828</b>			
<b>Capital Projects</b>													
CIP PAYGO Projects	50%	50%	0%	0%	100.0%	187,949	187,949	-	-	375,898			
Repair & Replacement Reserve Collection	50%	50%	0%	0%	100.0%	103,715	103,715	-	-	207,430			
<b>Total Capital Projects</b>						<b>291,664</b>	<b>291,664</b>	<b>-</b>	<b>-</b>	<b>583,329</b>			
<b>Total Operating/Non-Operating Expenses</b>						<b>\$ 1,043,276</b>	<b>\$ 789,236</b>	<b>\$ 653,643</b>	<b>\$ 399,603</b>	<b>\$ 2,885,757</b>			
<b>Classification Factor</b>						<b>36.2%</b>	<b>27.3%</b>	<b>22.7%</b>	<b>13.8%</b>	<b>100.0%</b>			

Sources: City of Fort Bragg; MuniFinancial.

Table 9 presents the allocation of the Revenue Required for the study period to the four functional categories based upon Table 4. The functional categories of Base and Extra-Capacity are then grouped as “Water Costs” while the functional categories of Customer Billing/Admin and Meters & Services are grouped as “Customer Costs”. The Water Costs will be recovered through a monthly consumption based charge while the Customer Costs will be recovered through a monthly fixed charge.

**Table 9: Allocation of Required Revenue**

Functionalization Factors	Base	Extra-Capacity	Customer Billing/Admin	Meters & Services		
	36.2%	27.3%	22.7%	13.8%		
	<u>Water Costs</u>		<u>Customer Costs</u>			
	Base	Extra-Capacity	Customer Billing/Admin	Meters & Services	Total	
FY 2008/2009	\$ 706,861	\$ 534,738	\$ 442,869	\$ 270,747	\$ 1,955,215	
FY 2009/2010	774,331	585,779	485,141	296,590	2,141,840	
FY 2010/2011	809,330	612,256	507,069	309,995	2,238,651	
FY 2011/2012	845,912	639,930	529,989	324,007	2,339,838	
FY 2012/2013	884,147	668,855	553,944	338,652	2,445,599	
FY 2013/2014	924,111	699,088	578,983	353,959	2,556,140	
FY 2014/2015	965,880	730,686	605,153	369,958	2,671,678	
FY 2015/2016	1,009,538	763,713	632,505	386,681	2,792,438	
FY 2016/2017	1,055,169	798,233	661,095	404,158	2,918,656	
FY 2017/2018	1,102,863	834,313	690,976	422,426	3,050,579	

Sources: City of Fort Bragg; MuniFinancial.

## **DEVELOPMENT OF WATER RATES**

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Following the distribution of the revenue requirements to the classification factors, these requirements are used in the development of new water rates. The volume costs are accounted for through each customer's monthly consumption charge. Customer costs are allocated based on the number of equivalent meter ratios within the entire system

Table 10 illustrates the projected number of equivalent meters for each year of the study period. The total number of equivalent meters was used in determining the monthly meter charges shown in Table 12. Table 11 illustrates the projected water consumption (in hundred cubic feet) by meter size for the study period.

The proposed water rates are designed to increase the water system's revenue in order to meet rising operating costs, to enhance the financial condition of the water enterprise, and to provide funds for needed rehabilitation of the water system infrastructure. The proposed rates are expected to recover all of the customer and volume costs of the system.

Table 12 illustrates the calculation of the proposed water rates. The baseline 3/4" meter charge is calculated by dividing all customer costs of the water system by the total number of equivalent meters. The monthly meter charge for all other meter sizes are calculated by multiplying the baseline meter charge by each meter size's respective meter-equivalent ratio. The volume charge is calculated by dividing the water-related costs by the estimated total water consumption for the water system.

**Table 10: Projected Number of Equivalent Meters**

Meter Size	Meter		Equivalent		FY 2008/2009	FY 2009/2010	FY 2010/2011	FY 2011/2012
	Meters 2007	Equivalent Ratio	Meters 2007	Meters 2007				
3/4"	2,421	1.00	2,421	2,433	2,445	2,457	2,469	
1"	92	1.40	129	130	131	131	132	
1 1/2"	66	1.80	119	119	120	120	121	
2"	54	2.90	156	156	157	158	159	
3"	8	11.00	83	83	83	84	84	
4"	4	14.00	56	56	57	57	57	
<b>Total</b>	<b>2,644</b>		<b>2,963</b>	<b>2,977</b>	<b>2,992</b>	<b>3,007</b>	<b>3,022</b>	
<b>Meter Size</b>		<b>FY 2012/2013</b>	<b>FY 2013/2014</b>	<b>FY 2014/2015</b>	<b>FY 2015/2016</b>	<b>FY 2016/2017</b>	<b>FY 2017/2018</b>	
3/4"		2,482	2,494	2,507	2,519	2,532	2,544	
1"		133	133	134	135	135	136	
1 1/2"		121	122	123	123	124	125	
2"		160	160	161	162	163	164	
3"		85	85	85	86	86	87	
4"		57	58	58	58	59	59	
<b>Total</b>		<b>3,037</b>	<b>3,053</b>	<b>3,068</b>	<b>3,083</b>	<b>3,099</b>	<b>3,114</b>	

Note: Assumes a growth rate of 0.5%. Meters 2007 is calculated as the average number of meters during each billing period in 2007.  
Source: City of Fort Bragg; MuniFinancial.



**Table 11: Projected Water Usage (in HCF)**

	<b>FY 2003/04</b>	<b>FY 2004/05</b>	<b>FY 2005/06</b>	<b>FY 2006/07</b>	<b>Average</b>
Historical Consumption	357,160	331,016	335,690	329,668	338,384
Projected Annual Consumption	<b>FY 2008/2009</b> 340,075	<b>FY 2009/2010</b> 341,776	<b>FY 2010/2011</b> 343,485	<b>FY 2011/2012</b> 345,202	<b>FY 2012/2013</b> 346,928
Projected Annual Consumption	<b>FY 2013/2014</b> 348,663	<b>FY 2014/2015</b> 350,406	<b>FY 2015/2016</b> 352,158	<b>FY 2016/2017</b> 353,919	<b>FY 2017/2018</b> 355,688

Note: Assumes a consumption growth rate of 0.5%.

Source: City of Fort Bragg; MuniFinancial.

**Table 12: Calculation of Water Rates**

	FY 2008/2009	FY 2009/2010	FY 2010/2011	FY 2011/2012	FY 2012/2013	
<u>MONTHLY METER CHARGE</u>						
Total Customer Related Costs	\$ 713,616	\$ 781,730	\$ 817,065	\$ 853,996	\$ 892,597	
Number of Equivalent Meters	<u>2,977</u>	<u>2,992</u>	<u>3,007</u>	<u>3,022</u>	<u>3,037</u>	
Monthly Meter Charge per 3/4" Meter	\$ 19.97	\$ 21.77	\$ 22.64	\$ 23.55	\$ 24.49	
AWWA Equivalent						
Meter Size	Meter Factor	Monthly Meter Charge				
3/4"	1.0	19.97	21.77	22.64	23.55	24.49
1"	1.4	27.96	30.48	31.70	32.97	34.28
1 1/2"	1.8	35.95	39.19	40.76	42.39	44.08
2"	2.9	57.92	63.14	65.66	68.29	71.02
3"	11.0	219.71	239.48	249.06	259.02	269.38
4"	14.0	279.63	304.79	316.98	329.66	342.85
6"	21.0	419.44	457.19	475.48	494.49	514.27
<u>CONSUMPTION CHARGE</u>						
Total Water Related Costs	\$ 1,241,599	\$ 1,360,110	\$ 1,421,587	\$ 1,485,842	\$ 1,553,002	
Estimated Consumption (HCF)	<u>340,075</u>	<u>341,776</u>	<u>343,485</u>	<u>345,202</u>	<u>346,928</u>	
Consumption Charge per HCF	\$ 3.65	\$ 3.98	\$ 4.14	\$ 4.30	\$ 4.48	

Source: City of Fort Bragg; MuniFinancial.

	FY 2013/2014	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018	
<u>MONTHLY METER CHARGE</u>						
Total Customer Related Costs	\$ 932,942	\$ 975,111	\$ 1,019,186	\$ 1,065,253	\$ 1,113,403	
Number of Equivalent Meters	<u>3,053</u>	<u>3,068</u>	<u>3,083</u>	<u>3,099</u>	<u>3,114</u>	
Monthly Meter Charge per 3/4" Meter	\$ 25.47	\$ 26.49	\$ 27.55	\$ 28.65	\$ 29.79	
AWWA Equivalent						
Meter Size	Meter Factor	Monthly Meter Charge				
3/4"	1.0	25.47	26.49	27.55	28.65	29.79
1"	1.4	35.66	37.08	38.57	40.11	41.71
1 1/2"	1.8	45.84	47.68	49.58	51.57	53.63
2"	2.9	73.86	76.81	79.89	83.08	86.41
3"	11.0	280.16	291.36	303.02	315.14	327.74
4"	14.0	356.56	370.83	385.66	401.09	417.13
6"	21.0	534.85	556.24	578.49	601.63	625.69
<u>CONSUMPTION CHARGE</u>						
Total Water Related Costs	\$ 1,623,198	\$ 1,696,567	\$ 1,773,252	\$ 1,853,403	\$ 1,937,176	
Estimated Consumption (HCF)	<u>348,663</u>	<u>350,406</u>	<u>352,158</u>	<u>353,919</u>	<u>355,688</u>	
Consumption Charge per HCF	\$ 4.66	\$ 4.84	\$ 5.04	\$ 5.24	\$ 5.45	

Source: City of Fort Bragg; MuniFinancial.

## Current Rates

The City's current wastewater rate structure is as listed below:

**Table 13: Current Wastewater Rates**

DESCRIPTION	MINIMUM BI-MONTHLY CHARGE	1600 MINIMUM BILLING UNITS	CHARGE PER 100 CUBIC FT. OVER THE MINIMUM
Single Family Residential--Flat Rate	\$ 51.84		
Multi Res/Mobile Homes	\$ 51.84	1,600	\$ 3.24
Multi Commercial--No SS Factor**	\$ 51.84	1,600	\$ 3.24
Commercial-SS Factor .62--Very Low	\$ 32.16	1,600	\$ 2.01
Commercial-SS Factor .74--Low	\$ 38.40	1,600	\$ 2.40
Commercial-SS Factor .92 Medium Lo	\$ 47.68	1,600	\$ 2.98
Commercial-SS Factor 1.00--Domestic	\$ 51.84	1,600	\$ 3.24
Commercial-SS Factor 1.48--Medium	\$ 76.80	1,600	\$ 4.80
Commercial-SS Factor 3.06 High	\$ 158.56	1,600	\$ 9.91
** SS Factor is the Sewer Strength Factor which is applied to Commercial Discharge and depends on the type of use			
METERED OUTSIDE DIST.--MacKerricher State Park			\$ 3.24
Source: City of Fort Bragg			

## Current and Projected Customers

Table 14 shows the current number of wastewater customer accounts by customer class. Table 15 depicts the estimated discharge by customer class.

**Table 14: Current and Projected Number of Customer Accounts**

Customer Class	Base - 2007	FY 2008/2009	FY 2009/2010	FY 2010/2011	FY 2011/2012	FY 2012/2013
<b>Residential</b>						
Single Family Residential	2,036	2,046	2,056	2,067	2,077	2,087
Mobile Home	1,004	1,009	1,014	1,019	1,024	1,029
<b>Commercial</b>						
Multi Commercial	23	23	23	23	23	24
Very Low Strength	3	3	3	3	3	3
Low Strength	14	14	14	14	14	14
Medium Low Strength	8	8	8	8	8	8
Domestic Strength	335	337	338	340	342	343
Medium Strength	14	14	14	14	14	14
High Strength	71	71	72	72	72	73
<b>Total</b>	<b>3,508</b>	<b>3,526</b>	<b>3,543</b>	<b>3,561</b>	<b>3,579</b>	<b>3,597</b>
<b>Customer Class</b>						
<b>Residential</b>						
Single Family Residential	2,098	2,108	2,119	2,129	2,140	2,140
Mobile Home	1,034	1,040	1,045	1,050	1,055	1,055
<b>Commercial</b>						
Multi Commercial	24	24	24	24	24	24
Very Low Strength	3	3	3	3	3	3
Low Strength	14	14	14	15	15	15
Medium Low Strength	8	8	8	8	8	8
Domestic Strength	345	347	349	350	352	352
Medium Strength	14	14	15	15	15	15
High Strength	73	74	74	74	74	75
<b>Total</b>	<b>3,615</b>	<b>3,633</b>	<b>3,651</b>	<b>3,669</b>	<b>3,687</b>	<b>3,687</b>

Note: Estimated accounts for FY 2008/09 through 2017/18 inflated by 0.5% from base year 2007.

Base - 2007 customer account totals include all residential and commercial units.

Sources: The City of Fort Bragg; MuniFinancial

**Table 15: Current and Estimated Discharge**

Customer Class	Base - 2007	FY 2008/2009	FY 2009/2010	FY 2010/2011	FY 2011/2012	FY 2012/2013
<b>Residential</b>						
Single Family Residential	118,113	118,704	119,297	119,894	120,493	121,096
Mobile Home	49,718	49,967	50,216	50,468	50,720	50,973
<b>Commercial</b>						
Multi Commercial	1,342	1,349	1,355	1,362	1,369	1,376
Very Low Strength	2,380	2,392	2,404	2,416	2,428	2,440
Low Strength	13,456	13,523	13,591	13,659	13,727	13,796
Medium Low Strength	7,549	7,587	7,625	7,663	7,701	7,740
Domestic Strength	67,796	68,135	68,476	68,818	69,162	69,508
Medium Strength	7,117	7,153	7,188	7,224	7,260	7,297
High Strength	28,851	28,995	29,140	29,286	29,432	29,580
<b>Total</b>	<b>296,322</b>	<b>297,804</b>	<b>299,293</b>	<b>300,789</b>	<b>302,293</b>	<b>303,804</b>
<b>Customer Class</b>						
<b>Residential</b>						
Single Family Residential	121,701	121,701	122,309	122,921	123,536	124,153
Mobile Home	51,228	51,228	51,484	51,742	52,001	52,261
<b>Commercial</b>						
Multi Commercial	1,383	1,383	1,390	1,397	1,404	1,411
Very Low Strength	2,452	2,452	2,465	2,477	2,489	2,502
Low Strength	13,865	13,865	13,934	14,004	14,074	14,144
Medium Low Strength	7,778	7,778	7,817	7,856	7,896	7,935
Domestic Strength	69,855	69,855	70,205	70,556	70,908	71,263
Medium Strength	7,333	7,333	7,370	7,407	7,444	7,481
High Strength	29,727	29,727	29,876	30,025	30,176	30,326
<b>Total</b>	<b>305,323</b>	<b>306,850</b>	<b>308,850</b>	<b>308,384</b>	<b>309,926</b>	<b>311,476</b>

Note: Estimated discharge for FY 2008/09 through 2017/18 inflated by .5% from base year 2007.  
 Base - 2007 discharge for Single Family Residential based on water consumption from November to February.  
 Sources: The City of Fort Bragg; MuniFinancial

**Table 16: Historic Financial Results**

	2003/04 Actual	2004/05 Actual	2005/06 Actual	2006/07 Actual	2007/08 Projected
<b>REVENUE SUMMARY</b>					
Taxes-Property Tax-Secured	\$ 51,148	\$ 57,207	\$ 51,764	\$ 51,257	\$ 53,000
<b>Charges for Services</b>					
Stormdrain Fees	\$ 63,938	\$ 24,330	\$ 18,346	\$ 8,872	\$ 15,000
Sewer Service	977,764	1,151,177	1,254,089	1,394,795	1,457,638
MacKerricher Sewer Service	7,535	6,228	9,955	13,286	13,500
Permit and Inspection Fees	475	650	2,028	200	-
Maintenance Reimbursement	22,028	-	-	-	-
Septic Dumping Fees	1,163	2,209	3,404	170	-
Outside Service Lab Fees	-	-	-	-	-
<b>Total Charges for Services</b>	<b>1,072,903</b>	<b>1,184,594</b>	<b>1,287,822</b>	<b>1,417,323</b>	<b>1,486,138</b>
<b>Use of Money and Property</b>					
C.O.P. Investment Interest	7,367	2,917	-	-	-
<b>Total Use of Money and Property</b>	<b>7,367</b>	<b>2,917</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Miscellaneous Revenue</b>					
Miscellaneous	388	865	1,596	2,000	-
Transfer In From Other Funds	187,870	583,854	195,363	131,408	-
<b>Total Miscellaneous Revenue</b>	<b>188,258</b>	<b>584,719</b>	<b>196,959</b>	<b>133,408</b>	<b>-</b>
<b>TOTAL REVENUES</b>	<b>\$ 1,319,676</b>	<b>\$ 1,829,437</b>	<b>\$ 1,536,545</b>	<b>\$ 1,601,988</b>	<b>\$ 1,539,138</b>
<b>EXPENDITURE SUMMARY</b>					
<b>Operations and Maintenance</b>					
Salaries and Wages	\$ 250,337	\$ 276,645	\$ 331,514	\$ 357,465	\$ 396,341
Employee Benefits	127,996	163,235	236,908	202,010	251,625
Purchased Services	260,479	246,801	585,602	314,727	333,746
Supplies and Materials	61,433	100,205	100,691	89,050	90,450
Other Expenditures	125,328	149,784	151,662	185,030	283,594
Salary Benefit Allocation	146,324	186,521	198,869	209,676	224,999
<b>Total O&amp;M</b>	<b>971,897</b>	<b>1,123,191</b>	<b>1,605,246</b>	<b>1,357,958</b>	<b>1,580,755</b>
<b>Other Expenditures</b>					
Transfers Out to Other Funds	105,000	23,000	-	-	-
Existing Debt Service	30,596	33,735	67,949	60,261	63,765
Capital Expenditures	257,267	269,584	182,838	159,011	95,961
Reserve Payments	-	-	-	-	-
<b>Total Other Expenditures</b>	<b>392,863</b>	<b>326,319</b>	<b>250,787</b>	<b>219,272</b>	<b>159,726</b>
<b>TOTAL EXPENDITURES</b>	<b>\$ 1,364,760</b>	<b>\$ 1,449,510</b>	<b>\$ 1,856,033</b>	<b>\$ 1,577,230</b>	<b>\$ 1,740,481</b>
<b>REVENUES LESS EXPENDITURES</b>	<b>\$ (45,084)</b>	<b>\$ 379,927</b>	<b>\$ (319,488)</b>	<b>\$ 24,758</b>	<b>\$ (201,343)</b>

Source: City of Fort Bragg.

## Future Revenue Requirements

An evaluation of future revenue requirements should focus on four specific areas. These areas are increases in operating expenses, capital improvement costs, requirements for debt service, and the maintenance of reserves. The following sections discuss the impact of these four factors on the wastewater utility revenue requirements.

### Operating Expense Projections

For the purpose of determining annual revenue requirements as a basis to set future Wastewater rates, we used a projection period of ten years. During this period (FY 2008/2009 through FY 2017/2018), costs are naturally assumed to increase due to inflationary pressures. The study assumes a customer growth rate of one-half percent (0.5%), an expenditure growth rate of three percent (3%), and a personnel cost growth rate of three percent (3%) to project the future costs of the system.

### **Capital Improvement Costs**

The City maintains a Capital Improvement Plan (CIP) for the funding of annual capital projects. The values used in this analysis are based on cost estimates provided by the City. Construction costs were escalated annually by a factor of 4.04%, based on the average annual percentage change between 2003 and 2007 in the Engineering News Record Construction Cost Index.

Table 17 presents the operations CIP over the ten-year planning period of this study (note that it is assumed that all CIP costs are operations-related, i.e. not driven by growth, and will be funded on a “pay-as-you-go” and with two bond issues).

**Table 17: Capital Improvement Projects**

Project Name	Priority	FY 2008/2009		FY 2009/2010		FY 2010/2011		FY 2011/2012		FY 2012/2013		FY 2013/2014	
		PAYGO	New Debt	PAYGO	New Debt	PAYGO	New Debt	PAYGO	New Debt	PAYGO	New Debt	PAYGO	New Debt
Sludge Thickener mechanism replacement	1A	\$ -	\$ -	\$ -	\$ 488,988	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Replacement of Primary plant pumps	1B	-	-	-	130,050	-	-	-	-	-	-	-	-
Clean & Rehab Primary Digester	2A	-	-	-	1,040,400	-	-	-	-	-	-	-	-
N.&S. Noyo Pump Station Upgrades	2B	-	-	-	988,380	-	-	-	-	-	-	-	-
Instrument & Electrical Upgrades	3	-	-	-	416,160	-	-	-	-	-	-	-	-
Installation of new effluent fillers	4	-	-	-	2,288,880	-	-	-	-	-	-	-	-
Clarifier Mechanism Replacement	5	-	-	-	1,196,460	-	-	-	-	-	-	-	-
Supervisory Control & Data Acquisition (SCADA)	6	-	-	-	-	-	-	-	-	-	-	-	-
On Site Storm Drainage Re-routing	7	-	-	-	468,180	-	-	-	-	-	-	-	-
Building Upgrades	8	-	-	119,646	-	-	-	394,157	-	-	-	-	-
Grease Lagoon Rehab		-	-	-	-	-	-	-	-	-	-	-	-
Sewer Main Replacement N. Sanderson Way		-	-	-	-	-	-	-	-	-	-	-	-
Wastewater Equipment Garage		-	-	-	-	108,243	-	-	-	-	-	-	-
Rehab/Replace Primary Biofilter		-	-	-	-	-	-	-	-	-	-	-	-
Rehab diffusers on Ocean Outfall		-	-	-	-	-	-	-	117,166	-	-	-	-
Pump Station Improvements (other than N&S Noyo)		-	-	-	-	-	-	-	-	87,874	-	-	-
Wastewater Plan Site Maintenance		-	-	-	-	-	-	-	-	-	-	-	-
Ultraviolet Disinfection		-	-	-	-	-	-	-	-	-	-	-	-
Sludge Dewatering		-	-	-	-	-	-	-	-	-	-	-	-
Trickling Filter Improvements		-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Wastewater CIP Costs</b>		<b>\$ -</b>	<b>\$ -</b>	<b>\$ 119,646</b>	<b>\$ 7,017,498</b>	<b>\$ -</b>	<b>\$ 108,243</b>	<b>\$ 394,157</b>	<b>\$ -</b>	<b>\$ 205,040</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 2,157,620</b>

Project Name	Priority	FY 2014/2015		FY 2015/2016		FY 2016/2017		FY 2017/2018		Total	
		PAYGO	New Debt	PAYGO	New Debt	PAYGO	New Debt	PAYGO	New Debt	PAYGO	New Debt
Sludge Thickener mechanism replacement	1A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 488,988
Replacement of Primary plant pumps	1B	-	-	-	-	-	-	-	-	-	130,050
Clean & Rehab Primary Digester	2A	-	-	-	-	-	-	-	-	-	1,040,400
N.&S. Noyo Pump Station Upgrades	2B	-	-	-	-	-	-	-	-	-	988,380
Instrument & Electrical Upgrades	3	-	-	-	-	-	-	-	-	-	416,160
Installation of new effluent fillers	4	-	-	-	-	-	-	-	-	-	2,288,880
Clarifier Mechanism Replacement	5	-	-	-	-	-	-	-	-	-	1,196,460
Supervisory Control & Data Acquisition (SCADA)	6	-	-	-	1,116,053	-	-	-	-	-	1,116,053
On Site Storm Drainage Re-routing	7	-	-	-	-	-	-	-	-	-	468,180
Building Upgrades	8	-	-	-	-	-	-	-	-	-	-
Grease Lagoon Rehab		-	-	-	-	-	-	-	-	394,157	-
Sewer Main Replacement N. Sanderson Way		-	-	-	-	-	-	-	-	119,646	-
Wastewater Equipment Garage		-	-	-	-	-	-	-	-	-	-
Rehab/Replace Primary Biofilter		-	-	-	-	-	-	-	-	-	-
Rehab diffusers on Ocean Outfall		-	-	-	-	-	-	-	-	-	-
Pump Station Improvements (other than N&S Noyo)		-	-	-	-	-	-	-	-	117,166	-
Wastewater Plan Site Maintenance		-	-	-	-	-	-	-	-	-	-
Ultraviolet Disinfection		-	-	-	-	-	-	-	-	-	-
Sludge Dewatering		-	-	-	-	-	-	-	-	-	-
Trickling Filter Improvements		-	-	-	-	-	-	-	-	-	-
<b>Total Wastewater CIP Costs</b>		<b>\$ -</b>	<b>\$ -</b>	<b>\$ 2,130,646</b>	<b>\$ 626,752</b>	<b>\$ 2,638,958</b>	<b>\$ -</b>	<b>\$ 1,771,025</b>	<b>\$ -</b>	<b>\$ 3,116,621</b>	<b>\$ 14,052,965</b>

Notes:  
 Construction cost estimates were escalated annually by a factor of 4.04% based on the average annual increase between 2003 and 2007 in Engineering News Record Construction Cost Index.  
 Sources: City of Fort Bragg; Bureau of Labor Statistics; MuniFinancial.



### **Debt Service**

There is currently debt service on the 1998 Municipal Improvement District No. 1 bonds as well as interfund loans from Water O&M and the RDA Project Fund. For this scenario we included two new debt issues.

We also anticipate that two new bonds will be issued for Infrastructure projects. The first new debt issuance is estimated at \$9,860,000 with an annual debt service payment of \$615,000 (based on an interest rate of 4.5%, an underwriter's discount of 2%, a cost of issuance of 1%, a reserve fund requirement of 10%, and a 30-year term with one year of capitalized interest). The second new debt issuance is estimated at \$7,170,000 with an annual debt service payment of \$448,000 (based on an interest rate of 4.5%, an underwriter's discount of 2%, a cost of issuance of 1%, a reserve fund requirement of 10%, and a 30-year term with one year of capitalized interest). These estimates are based on the current interest rate environment and industry standard costs of issuance figures.

### **Reserve Funds**

The operating fund for the Wastewater utility is projected to have a balance of (\$10,000) as of June 30, 2007, according to the FY 07/08 Adopted Budget (note that this is an unaudited estimate). We recommended that the City adopt a policy of maintaining a designated balance in the operating fund (such as three months of operating expenses or any other amount approved by the Council), in order to satisfy expense obligations as cash flow fluctuates during the year.

In addition, funds equaling a percentage of depreciation expense should be collected in order to ensure the availability of funds for necessary system repair and maintenance. However, to reduce rate increases, accrual for repair and maintenance was excluded for the entire 10 year study period.

### **Wastewater Revenue Requirements**

Tables 18 and 19 depict the annual revenue requirements of the Wastewater system for each year of the study period. Fiscal year 2007/2008 is being used as the base year for the study. The study assumes a customer growth rate of one-half percent (0.5%), an expenditure growth rate of three percent (3%), and a personnel cost growth rate of three percent (3%) to project the future costs of the system. The Desired Operating Reserve Fund Balance is set at ninety (90) days of O&M expenses. The beginning operating fund balance of fiscal year 2008/2009 is estimated at \$262,359 (line 69).

**Table 18: Revenue Requirements Fiscal Years 2008/09 to 2012/13**

Description	FY 2007/2008	FY 2008/2009	FY 2009/2010	FY 2010/2011	FY 2011/2012	FY 2012/2013
<b>Operating Revenue</b>						
1 Stormdrain Fees	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000
2 MacKerricher Sewer Service	13,500	13,500	13,500	13,500	13,500	13,500
3 Permit and Inspection Fees	-	1,000	1,000	1,000	1,000	1,000
4 Sewer Service	1,457,638	1,464,926	1,472,251	1,478,612	1,487,010	1,494,445
5 Total Operating Revenue	1,486,138	1,494,426	1,501,751	1,509,112	1,516,510	1,523,945
6						
7 Additional Revenue Required						
8 Year	Revenue Increase	Months Effective				
9 FY 2008/2009	35.00%	12	512,724	515,288	517,864	520,454
10 FY 2009/2010	20.00%	12	-	397,508	399,495	401,493
11 FY 2010/2011	15.00%	12	-	-	359,546	361,343
12 FY 2011/2012	10.00%	12	-	-	-	277,030
13 FY 2012/2013	4.00%	12	-	-	-	-
14 FY 2013/2014	4.00%	12	-	-	-	-
15 FY 2014/2015	4.00%	12	-	-	-	-
16 FY 2015/2016	4.00%	12	-	-	-	-
17 FY 2016/2017	4.00%	12	-	-	-	-
18 FY 2017/2018	4.00%	12	-	-	-	-
19 Total Additional Operating Revenue		512,724	912,796	1,276,905	1,560,320	1,690,624
20						
21 Total Required Revenue	\$ 1,486,138	\$ 2,007,150	\$ 2,414,546	\$ 2,786,017	\$ 3,076,830	\$ 3,214,569
22						
<b>Applications of Funds</b>						
<b>Operating Costs</b>						
25 Salaries and Wages	396,341	408,231	420,478	433,093	446,085	459,468
26 Employee Benefits	251,625	259,174	266,949	274,957	283,206	291,702
27 Purchased Services	333,746	343,758	354,071	364,693	375,634	386,903
28 Supplies and Materials	90,450	93,164	95,958	98,837	101,802	104,856
29 Other Expenditures	283,594	292,102	300,865	309,891	319,188	328,763
30 Salary Benefit Allocation	503,942	519,060	534,632	550,671	567,191	584,207
31 Total Operating Expenses	1,859,698	1,915,489	1,972,954	2,032,142	2,093,106	2,155,900
32						
33 Net Operating Income (Loss)	(373,560)	91,661	441,593	753,875	983,723	1,058,670
34						
<b>Debt Service</b>						
36 Current Debt Service	63,765	62,015	60,265	63,390	61,330	59,210
37 Proposed Bond Issuance, Phase I	-	-	-	-	615,000	615,000
38 Proposed Bond Issuance, Phase II	-	-	-	-	-	-
39 Total Debt Service	63,765	62,015	60,265	63,390	676,330	674,210
40						
41 Debt Coverage Ratio	(5.86)	1.48	7.33	11.89	1.45	1.57
42						
<b>Non-Operating Revenue</b>						
44 Investment Interest Earned	-	-	-	-	23,451	25,253
45 Miscellaneous	-	-	-	-	-	-
46 Total Non-Operating Revenue	-	-	-	-	23,451	25,253
47						
<b>Interfund Loan Information</b>						
49 Interfund Loan from Water	280,927	-	-	-	-	-
50 Water Interfund Loan Payback	-	(16,181)	(16,181)	(16,181)	(16,181)	(16,181)
51 RDA Interfund Loan Payback	-	(2,135)	(2,135)	(2,135)	(2,135)	(2,135)
52 Total Interfund Loan	280,927	(18,316)	(18,316)	(18,316)	(18,316)	(18,316)
53						
<b>Transfers</b>						
55 Transfers In From Other Funds	-	-	-	-	-	-
56 Total Transfers	-	-	-	-	-	-
57						
<b>Capital Projects</b>						
59 CIP PAYGO Projects	95,961	-	119,646	-	394,157	205,040
60 Capital Projects Fund	-	-	-	-	(156,472)	(59,603)
61 Repair & Replacement Reserve Collection	-	-	-	-	-	-
62 Total Capital Projects	95,961	-	119,646	-	237,685	145,438
63						
64 Net Income (Loss)	(252,359)	11,331	243,366	672,170	74,844	245,959
65						
<b>Fund Information</b>						
66						
<b>Wastewater Enterprise O&amp;M Fund</b>						
69 Beginning Operating Fund Balance	(10,000)	(262,359)	(251,028)	(7,662)	508,036	523,277
70 Deposit (Withdrawals)	(252,359)	11,331	243,366	672,170	74,844	245,959
71 Sub Total O&M Fund	\$ (262,359)	\$ (251,028)	\$ (7,662)	\$ 664,508	\$ 582,879	\$ 769,236
72						
73 Reserve Balance Percent of O&M	25%	25%	25%	25%	25%	25%
74 Desired Operating Reserve Balance	464,925	478,872	493,238	508,036	523,277	538,975
75 Excess (Deficit) O&M / Excess to CIP Fund	(262,359)	(251,028)	(7,662)	156,472	59,603	230,261
76 Ending O&M Fund Balance	\$ (262,359)	\$ (251,028)	\$ (7,662)	\$ 508,036	\$ 523,277	\$ 538,975
77						
<b>Repair &amp; Replacement Reserve Fund</b>						
79 Beginning R&R Fund Balance	-	-	-	-	-	-
80 Deposit (Withdrawals)	-	-	-	-	-	-
81 Ending Repair & Replacement Reserve Fund	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
82						
<b>Capital Projects Fund</b>						
84 Beginning CIP Fund Balance	-	-	-	-	156,472	59,603
85 (Withdrawals for CIP Projects)	-	-	-	-	(156,472)	(59,603)
86 Deposits excess O&M Funds	-	-	-	156,472	59,603	230,261
87 Ending Capital Projects Fund	\$ -	\$ -	\$ -	\$ 156,472	\$ 59,603	\$ 230,261

Sources: City of Fort Bragg, MuniFinancial.

**Table 19: Revenue Requirements Fiscal Years 2013/14 to 2017/18**

Description	FY 2013/2014	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018
<b>Operating Revenue</b>					
1 Stormdrain Fees	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000
2 MacKerncher Sewer Service	13,500	13,500	13,500	13,500	13,500
3 Permit and Inspection Fees	1,000	1,000	1,000	1,000	1,000
4 Sewer Service	1,501,917	1,509,427	1,516,974	1,524,559	1,532,182
5 Total Operating Revenue	1,531,417	1,538,927	1,546,474	1,554,059	1,561,682
6					
<b>Additional Revenue Required</b>					
8 Year Revenue Increase					
9 FY 2008/2009 35.00%	525,671	528,299	530,941	533,596	536,264
10 FY 2009/2010 20.00%	405,518	407,545	409,583	411,631	413,689
11 FY 2010/2011 15.00%	364,966	366,791	368,625	370,468	372,320
12 FY 2011/2012 10.00%	279,807	281,206	282,612	284,025	285,445
13 FY 2012/2013 4.00%	123,115	123,731	124,349	124,971	125,596
14 FY 2013/2014 4.00%	128,040	128,680	129,323	129,970	130,620
15 FY 2014/2015 4.00%	-	133,827	134,496	135,169	135,845
16 FY 2015/2016 4.00%	-	-	139,876	140,576	141,278
17 FY 2016/2017 4.00%	-	-	-	146,199	146,930
18 FY 2017/2018 4.00%	-	-	-	-	152,807
19 Total Additional Operating Revenue	1,827,117	1,970,080	2,119,806	2,276,604	2,440,794
20					
21 <b>Total Required Revenue</b>	<b>\$ 3,358,534</b>	<b>\$ 3,509,007</b>	<b>\$ 3,666,280</b>	<b>\$ 3,830,663</b>	<b>\$ 4,002,475</b>
22					
<b>Applications of Funds</b>					
<b>Operating Costs</b>					
25 Salaries and Wages	473,252	487,449	502,073	517,135	532,649
26 Employee Benefits	300,453	309,467	318,751	328,314	338,163
27 Purchased Services	398,510	410,465	422,779	435,463	448,527
28 Supplies and Materials	108,002	111,242	114,579	118,017	121,557
29 Other Expenditures	338,626	348,785	359,248	370,026	381,127
30 Salary Benefit Allocation	601,733	619,785	638,379	657,530	677,256
31 Total Operating Expenses	2,220,577	2,287,194	2,355,810	2,426,484	2,499,279
32					
33 <b>Net Operating Income (Loss)</b>	<b>1,137,958</b>	<b>1,221,813</b>	<b>1,310,471</b>	<b>1,404,179</b>	<b>1,503,197</b>
34					
<b>Debt Service</b>					
36 Current Debt Service	61,958	59,573	62,055	59,405	61,623
37 Proposed Bond Issuance, Phase I	615,000	615,000	615,000	615,000	615,000
38 Proposed Bond Issuance, Phase II	-	-	448,000	448,000	448,000
39 Total Debt Service	676,958	674,573	1,125,055	1,122,405	1,124,623
40					
41 Debt Coverage Ratio	1.68	1.81	1.16	1.25	1.34
42					
<b>Non-Operating Revenue</b>					
44 Investment Interest Earned	27,356	39,168	57,288	57,961	53,701
45 Miscellaneous	-	-	-	-	-
46 Total Non-Operating Revenue	27,356	39,168	57,288	57,961	53,701
47					
<b>Interfund Loan Information</b>					
49 Interfund Loan from Water	-	-	-	-	-
50 Water Interfund Loan Payback	(74,748)	(74,748)	(74,748)	(74,748)	(74,748)
51 RDA Interfund Loan Payback	(9,861)	(9,861)	(9,861)	(9,861)	(9,861)
52 Total Interfund Loan	(84,609)	(84,609)	(84,609)	(84,609)	(84,609)
53					
<b>Transfers</b>					
55 Transfers In From Other Funds	-	-	-	-	-
56 Total Transfers	-	-	-	-	-
57					
<b>Capital Projects</b>					
59 CIP PAYGO Projects	-	-	626,752	-	1,771,025
60 Capital Projects Fund	-	-	(626,752)	-	(854,631)
61 Repair & Replacement Reserve Collection	-	-	-	-	-
62 Total Capital Projects	-	-	-	-	916,394
63					
64 <b>Net Income (Loss)</b>	<b>403,748</b>	<b>501,799</b>	<b>158,095</b>	<b>255,126</b>	<b>(568,728)</b>
65					
<b>Fund Information</b>					
<b>Wastewater Enterprise O&amp;M Fund</b>					
69 Beginning Operating Fund Balance	538,975	555,144	571,798	588,952	606,621
70 Deposit (Withdrawals)	403,748	501,799	158,095	255,126	(568,728)
71 <b>Sub Total O&amp;M Fund</b>	<b>\$ 942,723</b>	<b>\$ 1,056,944</b>	<b>\$ 729,894</b>	<b>\$ 844,079</b>	<b>\$ 37,893</b>
72					
73 Reserve Balance Percent of O&M	25%	25%	25%	25%	25%
74 Desired Operating Reserve Balance	555,144	571,798	588,952	606,621	624,820
75 Excess (Deficit) O&M / Excess to CIP Fund	387,579	485,145	140,941	237,458	(586,926)
76 <b>Ending O&amp;M Fund Balance</b>	<b>\$ 555,144</b>	<b>\$ 571,798</b>	<b>\$ 588,952</b>	<b>\$ 606,621</b>	<b>\$ 37,893</b>
77					
<b>Repair &amp; Replacement Reserve Fund</b>					
79 Beginning R&R Fund Balance	-	-	-	-	-
80 Deposit (Withdrawals)	-	-	-	-	-
81 <b>Ending Repair &amp; Replacement Reserve Fund</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
82					
<b>Capital Projects Fund</b>					
84 Beginning CIP Fund Balance	230,261	617,839	1,102,984	617,173	854,631
85 (Withdrawals for CIP Projects)	-	-	(626,752)	-	(854,631)
86 Deposits excess O&M Funds	387,579	485,145	140,941	237,458	-
87 <b>Ending Capital Projects Fund</b>	<b>\$ 617,839</b>	<b>\$ 1,102,984</b>	<b>\$ 617,173</b>	<b>\$ 854,631</b>	<b>\$ -</b>

Sources: City of Fort Bragg, MuniFinancial

# **ALLOCATION OF WASTEWATER COSTS**

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## **Cost of Service Analysis**

A cost of service analysis converts enterprise-related financing documents to costs incurred by user classes for which rates can be developed. The cost of service study for the City of Fort Bragg is performed in three basic steps.

- The first step is called functionalization, which categorizes cost data in terms of functions performed by a wastewater system. The functions identified in this study include operating costs, and non-operating costs.
- The second step classifies operating and non-operating expenses of the wastewater system to the cost components including base and flow and strength of wastewater effluent. The cost components are defined as follows:
  - ◆ Flow Costs: Volume or flow related costs vary with the discharge of wastewater by users over a specified period of time, typically a year
  - ◆ Strength Costs: Strength costs vary with the quality of wastewater discharged as measured by the biochemical oxygen demand (BOD), suspended solids (SS), and Oil & Grease content of the discharged sewage
  - ◆ Customer Costs: Customer related costs vary with the increase or decrease in number of customers over a period of time

The final step in this analysis allocates costs of service to each customer class. This step is accomplished through the development of volume and strength related allocation factors for each customer class. Note the customer costs are allocated equally to each account.

## **Classification of Expenses to Cost Components**

For compliance with State and Proposition 218 guidelines, a wastewater utility is required to utilize a cost allocation approach that fairly allocates costs among customer classes. This is accomplished by allocating costs into the treatment parameters of flow and strength. These costs are to be allocated in proportion to the percentage that each cost parameter represents. When divided by the wastewater loadings of each user class, unit costs of service are obtained. All costs incurred by a wastewater utility system can be allocated to one or more cost parameters. The allocation of each cost item among flow, BOD, SS is based on industry standards of treatment parameter data. Tables 20, 21, and 22 present the functionalization and loading calculations used to determine the allocation factors. The allocation factors are computed by multiplying the functionalization factors by the loading percentages of each customer class. When coupled with their Flow, BOD, and SS factors, the total revenue requirements can be allocated to each customer class based on their base, flow, and strength characteristics. The required revenue allocations for each customer class for each year of the study period are shown below in Tables 23 and 24.

**Table 20: Functionalization of Wastewater Utility Revenue Requirements**

Description	Classification					FYE 2009 to 2013 AVG				
	Flow	BOD	SS	Customer Costs	Total	Flow	BOD	SS	Customer Costs	Total
<b>Operating Expenses</b>										
Salaries and Wages	35%	10%	10%	45%	100.0%	\$ 163,797	\$ 46,799	\$ 46,799	\$ 210,596	\$ 467,991
Employee Benefits	35%	10%	10%	45%	100.0%	103,990	29,711	29,711	133,701	\$ 297,114
Purchased Services	35%	10%	10%	45%	100.0%	137,928	39,408	39,408	177,336	\$ 394,080
Supplies and Materials	35%	10%	10%	45%	100.0%	37,381	10,680	10,680	48,061	\$ 106,802
Other Expenditures	35%	10%	10%	45%	100.0%	117,202	33,486	33,486	150,688	\$ 334,862
Salary Benefit Allocation	35%	10%	10%	45%	100.0%	208,266	59,504	59,504	267,770	\$ 595,044
Total Operating Expenses						\$ 768,563	\$ 219,589	\$ 219,589	\$ 988,152	\$ 2,195,893
<b>Non-Operating Expenses</b>										
Current Debt Service	50%	25%	25%	0%	100.0%	30,541	15,271	15,271	-	61,082
Proposed Bond Issuance, Phase I	50%	25%	25%	0%	100.0%	215,250	107,625	107,625	-	430,500
Proposed Bond Issuance, Phase II	50%	25%	25%	0%	100.0%	67,200	33,600	33,600	-	134,400
Water Interfund Loan Payback	50%	25%	25%	0%	100.0%	22,732	11,366	11,366	-	45,464
RDA Interfund Loan Payback	50%	25%	25%	0%	100.0%	2,999	1,499	1,499	-	5,998
CIP PAYGO Projects	50%	25%	25%	0%	100.0%	155,831	77,916	77,916	-	311,662
Repair & Replacement Reserve Collection	50%	25%	25%	0%	100.0%	-	-	-	-	-
Total Non-Operating Expenses						\$ 494,553	\$ 247,277	\$ 247,277	\$ -	\$ 989,106
<b>Wastewater Utility Gross Revenue Requirement</b>						<b>\$ 1,263,116</b>	<b>\$ 466,866</b>	<b>\$ 466,866</b>	<b>\$ 988,152</b>	<b>\$ 3,185,000</b>
<b>Classification Factor</b>	<b>39.7%</b>	<b>14.7%</b>	<b>14.7%</b>	<b>31.0%</b>	<b>100.0%</b>					

Sources: The City of Fort Bragg; MuniFinancial

**Table 21: Loading and Unit Rate Calculations**

Customer Class	Projected Discharges to the Sewer System (hcf)		Concentration		Calculated Loading			
	Flow Factor		BOD (mg/l)	SS (mg/l)	BOD (lb/yr)	BOD Factor	SS (lb/yr)	SS Factor
<b>Residential</b>								
Single Family Residential	118,113	39.9%	200	200	147,365	29.2%	147,365	32.3%
Mobile Home	49,718	16.8%	200	200	62,031	12.3%	62,031	13.6%
<b>Commercial</b>								
Multi Commercial	1,342	0.5%	450	450	3,767	0.7%	3,767	0.8%
Very Low Strength	2,380	0.8%	20	150	297	0.1%	2,227	0.5%
Low Strength	13,456	4.5%	140	100	11,752	2.3%	8,394	1.8%
Medium Low Strength	7,549	2.5%	250	100	11,773	2.3%	4,709	1.0%
Domestic Strength	67,796	22.9%	200	200	84,587	16.7%	84,587	18.5%
Medium Strength	7,117	2.4%	450	240	19,979	4.0%	10,656	2.3%
High Strength	28,851	9.7%	910	740	163,783	32.4%	133,187	29.1%
<b>Total</b>	<b>296,322</b>	<b>100.0%</b>			<b>505,335</b>	<b>100.0%</b>	<b>456,923</b>	<b>100.0%</b>

Sources: The City of Fort Bragg; MuniFinancial; State Water Resources Control Board Revenue Program Guidelines

**Table 22: Loading, Unit Rate, and Allocation Factors Calculations**

<b>Customer Class</b>	<b>Flow Factors</b>		
	<b>Flow Factor</b>	<b>BOD Factor</b>	<b>SS Factor</b>
<b>Residential</b>			
Single Family Residential	39.9%	29.2%	32.3%
Mobile Home	16.8%	12.3%	13.6%
<b>Commercial</b>			
Multi Commercial	0.5%	0.7%	0.8%
Very Low Strength	0.8%	0.1%	0.5%
Low Strength	4.5%	2.3%	1.8%
Medium Low Strength	2.5%	2.3%	1.0%
Domestic Strength	22.9%	16.7%	18.5%
Medium Strength	2.4%	4.0%	2.3%
High Strength	<u>9.7%</u>	<u>32.4%</u>	<u>29.1%</u>
<b>Totals</b>	100.0%	100.0%	100.0%

	<b>Functionalization Factors</b>			
	<b>Flow Factor</b>	<b>BOD Factor</b>	<b>SS Factor</b>	<b>Customer Costs</b>
<b>FYE 2008/09 to 2017/18</b>	39.7%	14.7%	14.7%	31.0%

<b>Customer Class</b>	<b>Allocation Factors</b>		
	<b>Flow Factor</b>	<b>BOD Factor</b>	<b>SS Factor</b>
<b>Residential</b>			
Single Family Residential	15.8%	4.3%	4.7%
Mobile Home	6.7%	1.8%	2.0%
<b>Commercial</b>			
Multi Commercial	0.2%	0.1%	0.1%
Very Low Strength	0.3%	0.0%	0.1%
Low Strength	1.8%	0.3%	0.3%
Medium Low Strength	1.0%	0.3%	0.2%
Domestic Strength	9.1%	2.5%	2.7%
Medium Strength	1.0%	0.6%	0.3%
High Strength	<u>3.9%</u>	<u>4.8%</u>	<u>4.3%</u>
<b>Totals</b>	39.7%	14.7%	14.7%

Sources: The City of Fort Bragg; MuniFinancial

**Table 23: Allocation of Revenue Requirements FY 2008/09 to 2013/14**

Customer Class	FY 2008/2009					FY 2009/2010				
	Flow Factor	BOD Factor	SS Factor	Customer Costs <sup>1</sup>	Total	Flow Factor	BOD Factor	SS Factor	Customer Costs <sup>1</sup>	Total
<b>Residential</b>										
Single Family Residential	\$ 312,620	\$ 84,537	\$ 99,494	\$ 356,108	\$ 846,760	\$ 377,020	\$ 101,952	\$ 112,754	\$ 429,467	\$ 1,021,193
Mobile Home	131,593	35,585	39,355	175,605	382,138	158,701	42,915	47,482	211,780	460,959
<b>Commercial</b>										
Multi Commercial	3,552	2,161	2,390	4,023	12,126	4,284	2,606	2,882	4,852	14,624
Very Low Strength	6,299	1,170	1,413	525	8,407	7,597	205	1,704	633	10,139
Low Strength	35,615	6,742	5,326	2,449	50,131	42,952	8,130	6,423	2,953	60,458
Medium Low Strength	19,981	6,754	2,988	1,399	31,121	24,097	8,145	3,603	1,687	37,532
Domestic Strength	179,442	48,524	53,665	98,593	340,224	216,407	58,520	64,720	70,664	410,310
Medium Strength	18,837	11,461	6,760	2,449	39,507	22,718	13,822	8,153	4,646	47,646
High Strength	76,363	93,956	84,498	12,418	267,235	92,093	113,310	101,905	24,953	472,265
<b>Totals</b>	<b>\$ 784,302</b>	<b>\$ 289,889</b>	<b>\$ 289,889</b>	<b>\$ 613,570</b>	<b>\$ 1,977,650</b>	<b>\$ 945,868</b>	<b>\$ 349,607</b>	<b>\$ 349,607</b>	<b>\$ 739,965</b>	<b>\$ 2,385,046</b>

Customer Class	FY 2010/2011					FY 2011/2012				
	Flow Factor	BOD Factor	SS Factor	Customer Costs <sup>1</sup>	Total	Flow Factor	BOD Factor	SS Factor	Customer Costs <sup>1</sup>	Total
<b>Residential</b>										
Single Family Residential	\$ 435,741	\$ 117,831	\$ 130,315	\$ 496,356	\$ 1,180,243	\$ 481,712	\$ 130,262	\$ 144,064	\$ 548,722	\$ 1,304,759
Mobile Home	183,419	49,599	54,854	244,765	532,638	202,770	54,832	60,642	270,588	568,831
<b>Commercial</b>										
Multi Commercial	4,951	3,012	3,331	5,607	16,902	5,473	3,330	3,683	6,199	18,685
Very Low Strength	8,780	237	1,968	731	11,718	9,707	262	2,177	809	12,955
Low Strength	49,642	9,397	7,423	3,413	69,875	54,879	10,388	8,206	3,773	77,246
Medium Low Strength	27,850	9,414	4,164	1,950	43,378	30,788	10,407	4,604	2,156	47,955
Domestic Strength	250,112	67,634	74,800	81,670	474,215	276,499	74,769	82,691	90,296	524,245
Medium Strength	26,256	15,875	9,423	3,413	55,067	29,026	17,680	10,417	3,773	60,876
High Strength	106,437	130,959	117,777	17,309	372,481	117,666	144,773	130,202	19,133	411,778
<b>Totals</b>	<b>\$ 1,083,187</b>	<b>\$ 404,058</b>	<b>\$ 404,058</b>	<b>\$ 855,215</b>	<b>\$ 2,756,517</b>	<b>\$ 1,208,518</b>	<b>\$ 446,686</b>	<b>\$ 446,686</b>	<b>\$ 945,440</b>	<b>\$ 3,047,330</b>

Customer Class	FY 2012/2013					FY 2013/2014				
	Flow Factor	BOD Factor	SS Factor	Customer Costs <sup>1</sup>	Total	Flow Factor	BOD Factor	SS Factor	Customer Costs <sup>1</sup>	Total
<b>Residential</b>										
Single Family Residential	\$ 503,485	\$ 136,150	\$ 150,575	\$ 573,524	\$ 1,363,734	\$ 526,243	\$ 142,304	\$ 157,381	\$ 589,447	\$ 1,425,375
Mobile Home	211,935	57,310	63,383	282,818	615,446	221,514	59,901	66,247	285,602	643,264
<b>Commercial</b>										
Multi Commercial	5,721	3,481	3,849	6,479	19,529	5,979	3,638	4,023	6,772	20,412
Very Low Strength	10,145	274	2,276	845	13,540	10,604	287	2,378	883	14,152
Low Strength	57,359	10,858	8,577	3,944	80,738	59,952	11,348	8,965	4,122	84,387
Medium Low Strength	32,170	10,877	4,812	2,254	50,122	33,634	11,369	5,029	2,355	52,388
Domestic Strength	288,956	78,149	86,429	94,367	547,941	302,059	81,681	90,336	98,632	572,708
Medium Strength	30,338	18,459	10,888	3,944	63,628	31,709	19,293	11,380	4,122	66,504
High Strength	122,984	151,318	136,088	20,000	430,391	128,543	158,158	142,239	20,904	449,844
<b>Totals</b>	<b>\$ 1,263,143</b>	<b>\$ 466,876</b>	<b>\$ 466,876</b>	<b>\$ 988,174</b>	<b>\$ 3,185,069</b>	<b>\$ 1,320,237</b>	<b>\$ 487,979</b>	<b>\$ 487,979</b>	<b>\$ 1,032,839</b>	<b>\$ 3,323,034</b>

**Table 24: Allocation of Revenue Requirements FY 20014/15 to 2017/18**

FY 2015/2016

FY 2014/2015

Residential	Flow Factor	BOD Factor	SS Factor	Customer Costs <sup>1</sup>	Total
Residential					
Single Family Residential	\$ 550,029	\$ 148,736	\$ 164,495	\$ 626,542	\$ 1,489,802
Mobile Home	231,527	62,608	69,242	308,963	672,340
Commercial					
Multi Commercial	6,249	3,802	4,205	7,078	21,335
Very Low Strength	11,063	300	2,486	923	14,792
Low Strength	62,662	11,861	9,370	4,308	88,201
Medium Low Strength	35,154	11,883	5,257	2,462	54,756
Domestic Strength	315,712	85,373	94,479	103,090	596,594
Medium Strength	33,142	20,165	11,884	4,308	69,510
High Strength	134,353	165,307	148,688	21,849	470,177
<b>Totals</b>	<b>\$ 1,379,912</b>	<b>\$ 510,036</b>	<b>\$ 510,036</b>	<b>\$ 1,079,523</b>	<b>\$ 3,479,507</b>

Residential	Flow Factor	BOD Factor	SS Factor	Customer Costs <sup>1</sup>	Total
Residential					
Single Family Residential	\$ 574,890	\$ 155,459	\$ 171,930	\$ 654,862	\$ 1,557,141
Mobile Home	241,982	65,438	72,372	322,928	702,730
Commercial					
Multi Commercial	6,532	3,974	4,385	7,388	22,299
Very Low Strength	11,384	313	2,589	965	15,461
Low Strength	65,494	12,397	9,794	4,503	92,188
Medium Low Strength	36,743	12,420	5,494	2,573	57,230
Domestic Strength	329,982	89,232	98,686	107,750	625,651
Medium Strength	34,640	21,076	12,432	4,503	72,652
High Strength	140,426	172,779	155,388	22,837	491,429
<b>Totals</b>	<b>\$ 1,442,284</b>	<b>\$ 533,089</b>	<b>\$ 533,089</b>	<b>\$ 1,128,318</b>	<b>\$ 3,636,780</b>

FY 2016/2017

FY 2017/2018

Residential	Flow Factor	BOD Factor	SS Factor	Customer Costs <sup>1</sup>	Total
Residential					
Single Family Residential	\$ 600,875	\$ 162,486	\$ 179,701	\$ 684,461	\$ 1,627,524
Mobile Home	252,930	68,398	75,643	337,324	734,493
Commercial					
Multi Commercial	6,827	4,154	4,594	7,732	23,307
Very Low Strength	12,108	327	2,716	1,009	16,159
Low Strength	68,455	12,958	10,236	4,707	96,355
Medium Low Strength	38,404	12,981	5,743	2,689	59,817
Domestic Strength	344,867	93,265	103,147	112,620	653,930
Medium Strength	36,206	22,029	12,994	4,707	75,936
High Strength	146,773	180,588	162,411	23,969	513,642
<b>Totals</b>	<b>\$ 1,507,476</b>	<b>\$ 557,185</b>	<b>\$ 557,185</b>	<b>\$ 1,179,318</b>	<b>\$ 3,801,163</b>

Residential	Flow Factor	BOD Factor	SS Factor	Customer Costs <sup>1</sup>	Total
Residential					
Single Family Residential	\$ 628,035	\$ 169,830	\$ 187,824	\$ 715,399	\$ 1,701,088
Mobile Home	264,362	71,488	79,062	352,780	767,692
Commercial					
Multi Commercial	7,136	4,342	4,802	8,082	24,361
Very Low Strength	12,655	342	2,839	1,054	16,890
Low Strength	71,549	13,543	10,699	4,919	100,710
Medium Low Strength	40,140	13,568	6,002	2,811	62,521
Domestic Strength	360,487	97,481	107,809	117,711	683,488
Medium Strength	37,843	23,025	13,581	4,919	79,368
High Strength	153,408	188,751	169,732	24,948	536,838
<b>Totals</b>	<b>\$ 1,575,613</b>	<b>\$ 582,370</b>	<b>\$ 582,370</b>	<b>\$ 1,232,623</b>	<b>\$ 3,972,975</b>

<sup>1</sup> Customer costs allocated by number of projected sewer accounts  
Sources: The City of Fort Bragg, MuniFinancial



## **Development of Wastewater Rates**

Following the distribution of the revenue requirements to the classification factors, these requirements are used in the development of new wastewater rates. Based on the analysis conducted for the City in this rate study, a rate schedule has been developed which, if implemented by the City, should generate enough revenue to cover estimated expenses and maintain the desired wastewater fund balances depicted.

## **Calculation of Proposed Wastewater Rates**

Tables 25 and 26 show the projected amount of discharge for each customer class as well as the projected number of customers. Note that the projected future discharge was calculated using a growth factor of one-half percent (0.5%) and the number of customers was calculated using a growth factor of one-half percent (0.5%).

Table 27 shows the wastewater rates for the study period. Note that all classes are charged a base charge and a consumption charge (based on 100 cubic feet of water consumption). Please note that the consumption charge for SFR will be based on their winter average of water consumption. This amount will be updated annually.

The base rate is calculated by dividing all customer costs of the wastewater system by the total number of estimated customer accounts. The monthly discharge rates are calculated by dividing the non customer costs by the estimated discharge.

**Table 25: Projected Discharge**

Customer Class	Base - 2007	FY 2008/2009	FY 2009/2010	FY 2010/2011	FY 2011/2012	FY 2012/2013
<b>Residential</b>						
Single Family Residential	118,113	118,704	119,297	119,894	120,493	121,096
Mobile Home	49,718	49,967	50,216	50,468	50,720	50,973
<b>Commercial</b>						
Multi Commercial	1,342	1,349	1,355	1,362	1,369	1,376
Very Low Strength	2,380	2,392	2,404	2,416	2,428	2,440
Low Strength	13,456	13,523	13,591	13,659	13,727	13,796
Medium Low Strength	7,549	7,587	7,625	7,663	7,701	7,740
Domestic Strength	67,796	68,135	68,476	68,818	69,162	69,508
Medium Strength	7,117	7,153	7,188	7,224	7,260	7,297
High Strength	28,851	28,995	29,140	29,286	29,432	29,580
<b>Total</b>	<b>296,322</b>	<b>297,804</b>	<b>299,293</b>	<b>300,789</b>	<b>302,293</b>	<b>303,804</b>

Customer Class	FY 2013/2014	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018
<b>Residential</b>					
Single Family Residential	121,701	122,309	122,921	123,536	124,153
Mobile Home	51,228	51,484	51,742	52,001	52,261
<b>Commercial</b>					
Multi Commercial	1,383	1,390	1,397	1,404	1,411
Very Low Strength	2,452	2,465	2,477	2,489	2,502
Low Strength	13,865	13,934	14,004	14,074	14,144
Medium Low Strength	7,778	7,817	7,856	7,896	7,935
Domestic Strength	69,855	70,205	70,556	70,908	71,263
Medium Strength	7,333	7,370	7,407	7,444	7,481
High Strength	29,727	29,876	30,025	30,176	30,326
<b>Total</b>	<b>305,323</b>	<b>306,850</b>	<b>308,384</b>	<b>309,926</b>	<b>311,476</b>

Note: Estimated discharge for FY 2008/09 through 2017/18 inflated by .5% from base year 2007.

Base - 2007 discharge for Single Family Residential based on water consumption from November to February.

Sources: The City of Fort Bragg; MuniFinancial

**Table 26: Projected Customer Accounts**

Customer Class	Base - 2007	FY 2008/2009	FY 2009/2010	FY 2010/2011	FY 2011/2012	FY 2012/2013
<b>Residential</b>						
Single Family Residential	2,036	2,046	2,056	2,067	2,077	2,087
Mobile Home	1,004	1,009	1,014	1,019	1,024	1,029
<b>Commercial</b>						
Multi Commercial	23	23	23	23	23	24
Very Low Strength	3	3	3	3	3	3
Low Strength	14	14	14	14	14	14
Medium Low Strength	8	8	8	8	8	8
Domestic Strength	335	337	338	340	342	343
Medium Strength	14	14	14	14	14	14
High Strength	71	71	72	72	72	73
<b>Total</b>	<b>3,508</b>	<b>3,526</b>	<b>3,543</b>	<b>3,561</b>	<b>3,579</b>	<b>3,597</b>

Customer Class	FY 2013/2014	FY 2014/2015	FY 2015/2016	FY 2016/2017	FY 2017/2018
<b>Residential</b>					
Single Family Residential	2,098	2,108	2,119	2,129	2,140
Mobile Home	1,034	1,040	1,045	1,050	1,055
<b>Commercial</b>					
Multi Commercial	24	24	24	24	24
Very Low Strength	3	3	3	3	3
Low Strength	14	14	15	15	15
Medium Low Strength	8	8	8	8	8
Domestic Strength	345	347	349	350	352
Medium Strength	14	14	15	15	15
High Strength	73	74	74	74	75
<b>Total</b>	<b>3,615</b>	<b>3,633</b>	<b>3,651</b>	<b>3,669</b>	<b>3,687</b>

Note: Estimated accounts for FY 2008/09 through 2017/18 inflated by 0.5% from base year 2007.

Base - 2007 customer account totals include all residential and commercial units.

Sources: The City of Fort Bragg; MuniFinancial

**Table 27: Calculation of Wastewater Rates**

Fiscal Year	<u>FY 2008/2009</u>	<u>FY 2009/2010</u>	<u>FY 2010/2011</u>	<u>FY 2011/2012</u>	<u>FY 2012/2013</u>
<b>Base Rate</b>	\$ 14.50	\$ 17.40	\$ 20.01	\$ 22.02	\$ 22.90
<b>Discharge Rate (Per HCF)</b>					
<b>Residential</b>					
Single Family Residential	\$ 4.13	\$ 4.96	\$ 5.70	\$ 6.27	\$ 6.53
Mobile Home	4.13	4.96	5.70	6.27	6.53
<b>Commercial</b>					
Multi Commercial	6.01	7.21	8.29	9.12	9.49
Very Low Strength	3.30	3.95	4.55	5.00	5.20
Low Strength	3.53	4.23	4.87	5.35	5.57
Medium Low Strength	3.92	4.70	5.41	5.95	6.18
Domestic Strength	4.13	4.96	5.70	6.27	6.53
Medium Strength	5.18	6.22	7.15	7.86	8.18
High Strength	8.79	10.55	12.13	13.34	13.87
<hr/>					
	<u>FY 2013/2014</u>	<u>FY 2014/2015</u>	<u>FY 2015/2016</u>	<u>FY 2016/2017</u>	<u>FY 2017/2018</u>
<b>Base Rate</b>	\$ 23.81	\$ 24.76	\$ 25.76	\$ 26.79	\$ 27.86
<b>Discharge Rate (Per HCF)</b>					
<b>Residential</b>					
Single Family Residential	\$ 6.79	\$ 7.06	\$ 7.34	\$ 7.63	\$ 7.94
Mobile Home	6.79	7.06	7.34	7.63	7.94
<b>Commercial</b>					
Multi Commercial	9.86	10.26	10.67	11.10	11.54
Very Low Strength	5.41	5.63	5.85	6.09	6.33
Low Strength	5.79	6.02	6.26	6.51	6.77
Medium Low Strength	6.43	6.69	6.96	7.24	7.52
Domestic Strength	6.79	7.06	7.34	7.63	7.94
Medium Strength	8.51	8.85	9.20	9.57	9.95
High Strength	14.43	15.01	15.61	16.23	16.88

Sources: The City of Fort Bragg; MuniFinancial

## **CONCLUSION**

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The proposed water and wastewater rate schedules are based on the City's projected revenue requirements over the next ten fiscal years. The proposed rates are designed to generate additional revenues to promote revenue adequacy throughout the ten fiscal year planning period. In addition, the rates were designed to satisfy Proposition 218 regulations.

We recommend that the City adopt the proposed rate structures to ensure that the water and wastewater system has a stable cash flow stream in order to provide for ongoing costs and debt service and allow for the funding of reserves for unscheduled expenses. We also recommend setting a policy of targeting an operating fund balance of 90 days of annual operations and maintenance expenses to ensure that funds are available for emergency purposes and to mitigate future rate shocks.

