City of Calistoga

Draft
2013 Wastewater Rate Study

An Update of the 2010 Rate Study

September 2013

Adopted by Resolution 2013 - _____

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Adopted _____
Effective _____

City of Calistoga
Draft 2013 Wastewater Rate Study

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Draft 2013 Wastewater Rate Study

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An Update of the 2010 Wastewater Rate Study

Analysis and Projections of Wastewater System Costs, Improvements and Revenue Needs For Fiscal Years 2013-14 through 2016-17

Summary

In the summer of 2009, the City Council initiated a review and update of the wastewater rates with the appointment of a citizens review committee made up of a broad cross-section of the community and Councilmembers. Over the next nine-months, the committee met in 22 noticed public meetings to review all aspects of the wastewater system operations, cost projections, development projections, capital improvement needs and rate structures. The committee thoroughly reviewed all of the operations and financial requirements of the system. The result was a comprehensive wastewater rate study with clear recommendations on the needed revenues, increased rates over the next five years and changes in the rate structures. In the fall of 2010, after several public hearings to review the recommended changes and hear public comments, the City Council, according to procedures under State law, adopted the 2010 rate studies and implemented new wastewater rates in January 2011 for a five-year period to January 2015.

In 2012, the City Council was concerned about the growing deficits in the wastewater fund and the on-going demand for general fund subsidies. A series of noticed public workshops over the last year were held to review the assumptions in setting the rates and the options to make the fund financially stable. In August 2013, the City Council directed staff to update the 2010 rate studies with the use of partial general fund subsidies, revised conservative development projections, a readjustment of the adopted rates and additional proposed rates to FY 16-17.

This 2013 wastewater rate study is an update to the 2010 rate study. The methodology established by the citizens committee in the 2010 rate study is still applicable and only

the assumptions from current wastewater users and flows, projected development, budgeted operating and debt costs, and capital improvements have been updated.

From the City Council public workshops and review of the options, it is recommended that no changes are needed in the adopted rates for the next two years to FY 14-15. It is also recommended that 2% annual rates increased will be needed in January 2016 and 2017 to keep the wastewater system financially stable with adequate operating and debt reserves. The use of available connection fee revenues from approved resort development has provided the needed portion of funding for annual debt payments and has restored the financial stability to the wastewater fund.

These recommendations assume operating costs and capital improvements over the next four years will fall within the projections and the approved major resort development projects will occur as projected.

Review of 2010 rate studies

Both the Water and Wastewater funds were in financial distress prior to the implementation of the 2010 rates. The adopted rates were based on projections of users and designed to generate revenues that would bring both systems into compliance with financial policies and regulations, and allow the systems to be independent from General Fund subsidies. However, the assumptions on operating costs, revenues from users and development did not materialize and the City was forced to continue operating subsidies from the General fund. The independent auditor expressed concern over the continued financial drain of both systems on the City's General Fund and the General Fund's inability to continue subsidizing the systems.

The projections in the 2010 rate studies were compared to the actual uses in FY 08-09 to FY 11-12. There were some significant differences, positive and negative, which overall have been detrimental to the financial health of both systems and a drain on the General Fund. In summary:

- The adopted rates were generally implemented correctly and applied to the different types of users.
- The rate study methodology is still applicable to Calistoga; however, the assumptions and projections used have not materialized.

- Water usage is significantly lower than projected due to conservation and the economic downturn affecting existing and projected development.
- Wastewater flows are higher than projected which appears to be related to inflow/infiltration or groundwater flows.
- Operating revenues for both systems are lower than projected due to the decreased water usage and impact on water and wastewater revenues.
- Operating costs mixed, with Water operations higher due to legal costs offsetting other reductions and Wastewater operations lower reflecting the reductions in labor costs.
- Stalled Development reduced use and connection fee revenue that were to be used to make debt payments relating to increased capacity for new development.

Given the changes in the data used in both 2010 rate studies and the actual data and revised projections of costs, the adopted rates are no longer adequate to generate the required revenues to operate the wastewater system without General Fund subsidies to meet financial objectives. The revised development projections will allow the wastewater system to meet the financial objectives with the current adopted rates.

The 2010 rate studies will need to be updated using current financial, usage data, and revised assumptions for usage, costs and development over the remaining two years and an additional two years added to FY 16-17. In order to meet the objective that both systems need to be financially sound and independent from General Fund subsidies, there will likely need to be rate increases greater than those currently adopted in the wastewater system.

The financial objectives of the City Council for the 2013 rate studies are:

- Eliminate operating deficits requiring advances from the General and Other funds
- Achieve and maintain operating cash reserves at 20%
- Fund equipment and replacement reserve at an adequate level
- Meet minimum debt ratio (1.2 operating revenues over expenses)
- Provide for needed Capital Improvements to maintain systems with funding from new developments, financing and grants

The general assumptions used in the 2013 rate studies are:

- Current rate structures remain the same with certain exceptions.
- Single Family Residential conservation rate structure remains the same.
- Projections for a new four-year period from FY 13-14 to FY 16-17.
- Water & Wastewater users and use for projections based on analysis from FY 08-09 to FY 12-13.
- Development is projected on known developments.
- Other growth is assumed minimal with little speculation on potential development.
- Water production from Kimball Reservoir maintained at 350 acre feet per year.

- City of Napa/NBA Wholesale water rate increases.
- Annual changes in operating costs are estimated for:
  - Labor 2%
  - Services & supplies 3% Chemicals 3%
  - Energy 5% Sludge Disposal 3%
- Minimal emergency repairs or replacement of equipment.
- Limited Capital improvement projects scheduled and funded.

2013 Wastewater Rate Study Update

The funding of the wastewater system is primarily from monthly or bi-monthly rates charged to users. The costs to collect and treat wastewater are allocated to the different types of users based on their impacts to the wastewater system. This is a complicated standard methodology to allocate costs and develop the rates to charge. The costs are day-to-day operations, repayment of debt to fund capital improvements and capital improvements needed to maintain the system and add required capacity.

New or expanded development is charged a one-time connection fee that is designed to pay a fair share of the improvements that have been done or will be to allow development to occur. A portion of the connection fees are allocated to the repayment of the annual debt that has been issued for past improvements.

The 2013 rate study is based on Federal and State guidelines for wastewater rate studies, with adjustments, as needed, for the unique local conditions of Calistoga, such as, groundwater flows. This rate study meets the requirements of State law for a fair and reasonable allocation of the wastewater system operating, capital and debt costs to the different user categories through an equitable rate structure.

The 2013 rate study updates the operations, improvements and financing costs with actual and budget amounts and projects future costs for three years from Fiscal Year 2014-15 to 2016-17. This rate study also includes capital improvements, replacement of the main trunk line and other needed improvements. Growth in users and flows are conservatively estimated from known development projections. This growth of new development is reflected in the revenue estimates for Connection fees. Operating costs were reviewed and labor increases were projected at 2% annually over the next three years. Services and supply costs varied from 5% per year for energy, chemicals and sludge processing and other costs ranged from 0% to 3%.

Recommended Rate Changes after January 2015

Table A details the proposed rate changes for all types of users over the next four years to January 2017. The rate changes vary by type of user due to the different cost impacts different types of users have on the wastewater system. The first two years of rate changes are the previously adopted rates to January 2015. The flat residential rates are proposed to increase, on average, $2 to $5 per month over the next four years. The non-residential rates are generally based on volume of water used to represent discharge to the wastewater system and the rate changes will range from reductions of $.29 per hcf of water use (hundred cubic feet or 748 gallons) to an increase of $2 per hcf.

In addition, as currently adopted, it is recommended to continue annual increases after January 2017 based on the San Francisco-Oakland-San Jose Consumer Price Index annual percent change from the prior year. The procedure for this type of annual adjustment to the rates is provided under a City resolution, which complies with the provisions of State law for fee or rate increases.

The recommended rate changes are proposed to be implemented over the next four years with the first increase effective by January 1, 2014 or 30 days after adoption of the ordinance and subsequent annual adjustments are recommended to be effective after each January 1st, starting in 2015.

No Recommended Adjustments to Connection Fee for New or Expanded Development

In **Table B**, the current one-time Connection fee charged to new or expanded development is recommended to continue based on the 2010 rate study. The current connection fee was set in 2010 with an annual change based on a standard Engineering New Record Construction Cost Index. Please see **Table 12** for the projected revenues from new development.

The City's Connection fee calculation is complex and includes two parts – expansion of capacity and buy-in to the system. This methodology was developed to better identify and allocate improvement costs that primarily benefit new or expanded development.

The expansion of capacity portion relates to new or expanded development impacts to the system and payment for a fair share allocation of the cost of expanding capacity of the system to allow the development to occur. The equity "buy-in" portion is a fair share for past improvement costs to the wastewater system and to provide funding for future replacement improvements. A large portion of the Connection fee, 80%, will be used to pay the debt incurred for the upgrade of the wastewater treatment plant.

The development projections were revised based on approved resort development over the next four years and a conservative estimate of miscellaneous residential and commercial development.

Sources and Uses – Cash flow

The current adopted and recommended rates, with a portion of connection fees are projected to provide for funding of operations, capital improvements, debt service, required debt reserves and available working capital over the next four years. This is based on current assumptions of costs increases and conservative growth projections. A positive operating cash flow, a 20% operating and debt reserve and compliance with the debt ratio requirements under various financing agreements is projected during this period. **Table C** provides a summary of the wastewater system revenues and expenses.

2013 Rate Study Process to Adopt and Implement Rate Changes

State law mandates how changes to rates and fees must be reviewed, public notice information on the changes, timing of the hearings and changes and how the City Council can adopt the changes. The City council has adopted procedures to comply with the State law.

Over the last year, the City Council held special public workshops to discuss the water and wastewater funds and options. On August 3, 2013, the City Council conducted the last public workshop to consider options and, on August 20, 2013, provided direction to staff to proceed with the 2013 draft rate study and recommended rate changes.

A City Council public hearing is scheduled for September 3, 2013 to consider the recommendations and authorize issuance of a public notice mailed to all utility bill

customers and property owners, if different. If the City Council authorizes to proceed, a public notice will be mailed for a formal public hearing on the recommended rate changes to be held no sooner than 45 days from the public notice mailing. It is proposed for the public notices to be mailed by September 20th and the public hearing to be held on November 5, 2013.

This 2013 draft rate study will be made available for public review during the 45-day notice period. At the formal public hearing, the City Council will hear comments by the public and if written protests are received from the majority of the affected customers or property owners, then the proposed rate changes cannot be adopted by the City Council. After the public hearing, if there are less than majority protests, an ordinance will be introduced and subsequently adopted to implement the recommended rates and connection fee. The ordinance and rates will be effective 30 days after adoption.

Wastewater System Flows, Users and Discharge Characteristics

The City of Calistoga operates a complex wastewater collection, treatment and disposal system for almost 1,300 residential and non-residential accounts. The wastewater collection system is made up of 14 miles of sewer mains and 264 manholes for maintenance. The Wastewater Treatment Plant currently processes an adjusted average daily dry weather flow of 433,000 gallons of wastewater and is capable of processing up to 840,000 gallons per day. The disposal system can store 30 million gallons of effluent (treated wastewater) in holding ponds for evaporation and a reclaimed water distribution system irrigates over 40 acres of public and private property. The remaining effluent not used for irrigation is released into the Napa River only during certain periods of the year and under strict regulations.

The Wastewater Treatment Plant was significantly upgraded in 2003, at a cost of $13.4 million, to meet the State Water Resources Control Board (SWRCB) requirements for added capacity and provide for implementation of the projected General Plan growth. Most of the funding was financed over 20 to 40 years and the repayment will be from the ratepayers and new development.

In the 2010 rate study, the flows and discharge characteristics were adjusted to reflect current conditions, users, estimate of flows, discharge characteristics, estimates of groundwater discharge to the wastewater system to update and provide a fair and equitable rate structure.

The 2013 rate study updated the number of users and flows as of FY 11-12 in order to address the changes since the 2010 rate study. However, the estimates for groundwater discharge flows remained the same as in the 2010 rate study. Over the last several years, the wastewater flows have varied due to weather, inflow/infiltration and economic changes due to the continuing lag of economic recovery. It is difficult to assess the groundwater flows and it is recommended that the ratio of groundwater flow to total estimated flows determined in the 2010 rate study be continued at this time. **Tables 1** and **2** reflect the users and flows from the 2010 rate study and 2013 updates.

2010 Rate Study Analysis with 2013 updates

The annual wastewater flows and strengths are based on actual monthly flow to the Wastewater Treatment Plant (WWTP). From this data, the Average Dry Weather Flow (ADWF) [1] is determined by averaging the dry weather months of July, August and September and then projecting the flow over twelve months. This method of estimating the flows from the user discharges to the wastewater system is typical and required under the State Water Resources Control Board (SWRCB) reporting requirements. This will reduce the unknown inflow and infiltration of storm water run-off and subsurface water into the wastewater system[2].

However, due to Calistoga's large number of lodging facilities (over 600 rooms), the high occupancy during the summer months will tend to distort the common method to determine the ADWF estimate. The ADWF is adjusted to reduce the effect of high occupancy. This was determined by the difference between the lodging facilities average water use during the same dry weather months used above and projected over twelve months and the total average annual water use. While this calculation includes some landscaping water use, it better reflects the impact of average occupancy during a twelve-month period. In addition, the actual discharge to the wastewater system from Bottling Works users is physically measured and with the closure of CalMin in 2009, the remaining Crystal Geyser flows are projected at 2.06 million gallons per year.

To determine wastewater flows from residential and non-residential users, the wet winter water use for the months of November through February is averaged and projected over a twelve-month period. This more closely reflects flows into the wastewater system from City supplied water by eliminating almost all landscaping or outside water uses. However, for transient uses, again, an occupancy factor needs to be taken into account to reflect a more accurate year round wastewater flow from occupancy use. Below is a summary and comparison of the flows used in this 2013 rate study.

[1] Average Dry Weather Flow (ADWF) is used by the State to determine permitted treatment capacity. The intent is to negate the variable impact of the inflow and infiltration of rainwater or other types of groundwater flows into the collection system and conveyed to the Wastewater Treatment Plant.

[2] The estimated inflow and infiltration is an average annual 45 million gallons. The cost of treating this flow is borne proportionally by all users based on the user percentage of allocated flow.

Summary Comparison of Flows in Million Gallons (mg)

	2004 Rate Study		2010 Rate Study		2013 Rate Study	
Residential	110.4	48%	91.8	58%	94.9	60%
Transient	37.4	16%	37.0	23%	35.7	23%
Other Non-Residential	23.9	10%	19.4	12%	18.1	11%
Bottling Works	29.1	13%	3.1	2%	2.1	1%
Groundwater Discharge	29.1	13%	7.6	5%	7.6	5%
Total Adjusted Projected ADWF Flows	**229.9**	**100%**	**158.9**	**100%**	**158.3**	**100%**

The differences in estimated ADWF and allocation to different user categories between the 2010 and the 2013 Rate Study are due to several factors – changes in water use, closing of a major user and economic conditions.

The 2013 Rate Study compared the estimated ADWF from fiscal year 11-12 to the projections used in the 2010 rate study and found less than a 1% variance.

Table 1 details the above process to determine flows and allocation to user categories from the 2010 rate study. **Table 2** summarizes the ADWF and strength characteristics from the 2010 rate study and the 2013 updated data.

Groundwater Discharge

The City's wastewater system has unique characteristics due to the extensive groundwater discharge from hot geothermal and cold-water wells. The City knows of over 350 private wells in use, some of which discharge, unmeasured, to the wastewater system. In 2004, the City identified potentially significant contributors of groundwater flow to the wastewater system. It was estimated these significant contributors accounted for over 90% of the groundwater discharge into the wastewater system. As a requirement of the SWRCB providing funding for the WWTP, the City is to implement a measurement program to identify these flows.

In the 2010 rate study, an estimate of the groundwater discharge flow was made by allocating known and estimated flows to all other users. The total adjusted ADWF to the WWTP of 158.92 mg, or 435,400 gallons per day, was based on dry weather flows and adjusted for occupancy fluctuations. The sources of this flow can be determined from the

City's metered water sales, 26.04 mg adjusted for winter use, and Bottling Works projected measured flows of 3.1 mg. The remaining unaccounted for flow of 7.56 mg is assumed to be due to groundwater discharges. In addition, in the 2010 rate study, 83% was used to determine the Spas portion of ground water discharge for calculating a separate Groundwater- Spa rate to be applied to City water use in a similar manner as the current rate structure. Updated estimates are unavailable and the 2013 Rate Study uses the same estimates.

Summary Comparison of Groundwater Discharge in Million Gallons (mg)

	2010 Rate Study		2013 Rate Study	
Spas	6.27	83%	6.27	83%
Residential & Other	1.29	17%	1.29	17%
Total	**7.56**	**100%**	**7.56**	**100%**

Strength Characteristics

There are typical strengths characteristics of the wastewater effluent from different user categories in Biochemical Oxygen Demand (BOD) and Suspended Solids (SS). These are the major measurement components of wastewater that are used to determine the level of treatment needed to meet Federal and State effluent discharge requirements.

The 2010 rate study used the SWRCB guidelines and, where appropriate, adjusted the ranges and groupings to reflect user characteristics and impacts to the wastewater system. There are no recommended changes to the BOD or SS classifications in the 2013 rate study.

The residential strengths are set at the low end of the range to reflect lower densities and rural characteristics of Calistoga. The similar Transient facilities user categories are grouped together with the same strengths recommended in the SWRCB guidelines for Hotels/Motels. Several of the other non-residential categories are adjusted to better reflect the SWRCB guidelines. In addition, the City's Industrial General category is redefined to Brewery/Winery, since that is the only local use in that category, and the BOD and SS loadings are adjusted to reflect this type of use based on actual past flow and loading analysis of the facility. See **Table 2** for strength characteristics by user.

Projected Growth in System Demands

Future development growth and the additional demands on the wastewater system are difficult to project. The mix of growth and development timing between residential, commercial and transient facilities will have different effects on the flows and loading strengths to the wastewater system.

The projection of growth over the next four years is limited to approved major resort developments and a conservative estimate of miscellaneous infill. Below are the projected resort and other developments in the next four years.

Projected Resort Development

Indian Springs Resort	Additional units in FY 14-15
Enchanted Resorts	Contribution for Capital Improvements in FY 15-16
Silver Rose	New units in FY 16-17
Arden Winery	Construction in FY 13-14
Calistoga Apartments	Construction in FY 13-14

The estimated growth in users and flows are conservatively estimated over the next four years. The annual growth estimate will vary from year to year with different types and levels of development. See **Table 12** for the new development estimated allocation of wastewater capacity for each of the four years in this rate study. This is used to calculate the connection fee revenues included in the cash flow projections. The impact to the wastewater system will likely be less when the units are operational.

These actual and projected growth estimates ensure that the user rates are set at an adequate level to allow for variations in wastewater flows and changes in growth, and still provide necessary revenues to operate the system, repay debt and meet the Federal, State and private financing requirements.

Current and Projected Wastewater System Costs

Sources and Uses – Cash flow

The recommended rates and connection fees are projected to provide for adequate funding of operations, capital improvements, debt service, required debt reserves and available working capital to FY 14-15, based on current assumptions and conservative growth projections. The projections of cash flow will also meet the debt ratio requirements under various financing agreements by FY 12-13. Below is a summary of the projections:

Summary of Wastewater Sources and Uses

Sources	**FY 13-14**	**FY 14-15**	**FY 15-16**	**FY 16-17**
Service Charges	2,219,353	2,265,305	2,310,611	2,356,823
Connection fees	266,748	2,389,115	104,571	106,662
Developer Contribution	-	-	4,900,000	-
Other	98,544	72,375	73,223	74,087
All Sources	**2,584,645**	**4,726,795**	**7,388,404**	**2,537,572**
Uses				
Operations (less depreciation)	2,133,869	2,065,085	2,035,094	2,088,959
Capital Improvements	750,000	668,250	4,905,000	-
Debt Payments	695,187	695,983	696,303	693,540
All Uses	**3,579,056**	**3,429,318**	**7,636,397**	**2,782,500**
Ending Working Capital	**534,523**	**1,832,000**	**1,584,008**	**1,339,080**
Operating Reserve	**386,376**	**396,550**	**407,019**	**417,792**
Debt Reserve Requirement	**94,312**	**104,949**	**106,224**	**106,332**
Available Working Capital	**53,835**	**1,330,501**	**1,070,764**	**814,956**
Debt Ratios				
Loan Financing Agreements Ratio	**1.4**	**1.3**	**1.3**	**1.3**

See **Table C** for a more detailed overview of cash flow projections. In addition, see **Tables 9, 10 and 11** for detail on operating costs, capital improvements and debt service.

Past financing agreements have been made with the Federal and State Governments and Private bondholders to borrow funds for the improvements and repay the loans from rates. These agreements require the City to maintain a minimum level of revenues and rates sufficient to operate the systems and repay the debt (also known as "debt coverage" or "debt ratio"). The adopted and recommended rates and other revenues will provide revenues that exceed the required minimum debt ratio of 1.2 for the financing agreements.

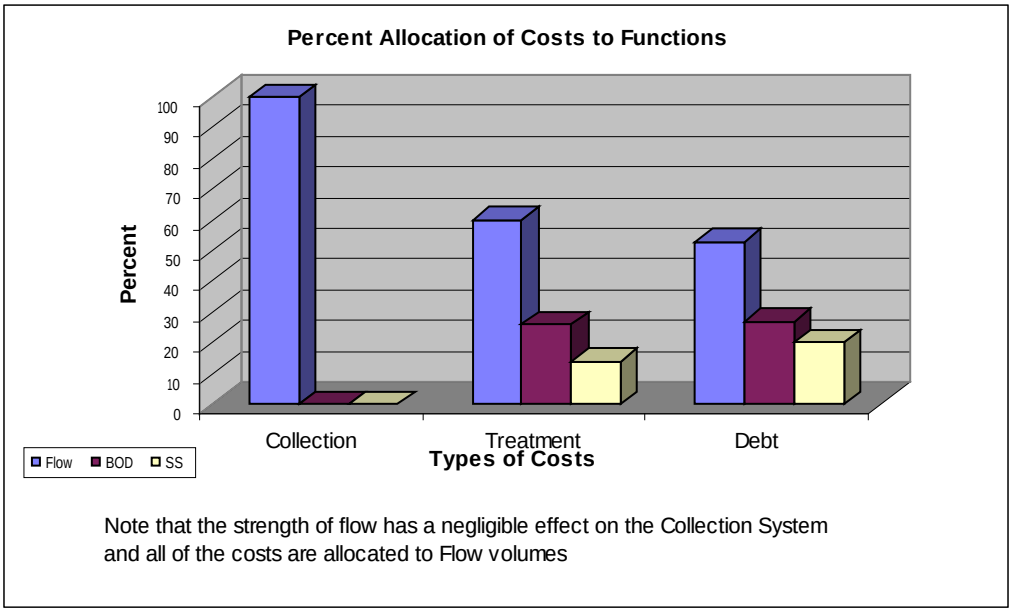
Over the next three years, along with miscellaneous repair and maintenance improvements to the wastewater system, several projected improvements will be needed. The Treatment system will need a $925,000 new effluent storage pond starting in FY 13-14. In FY 15-16, the $4.9 million replacement of the Lower Washington main trunk collection line is scheduled to be funded entirely by Enchanted Resorts as a developer contribution.

Allocation of Costs by Flows, BOD, SS to Users

The annual operating and capital improvement costs are determined by the type of collection and treatment processes and facilities of the wastewater system that are needed for the community. These costs can be allocated to the different components of a wastewater system:

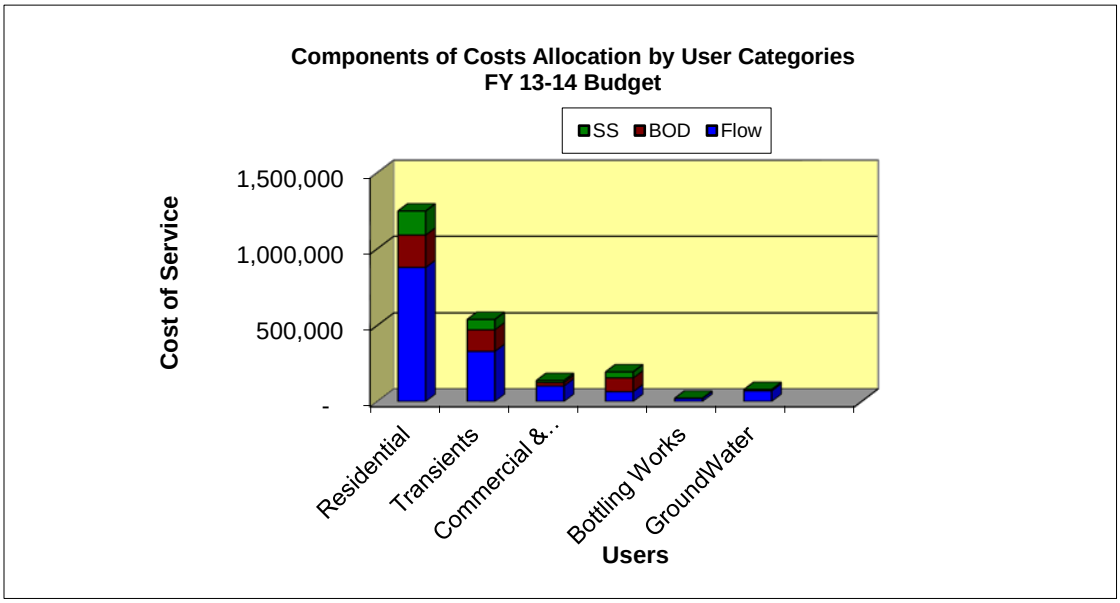
- Flow, the volume of influent to the system
- BOD, the biochemical strength of the influent
- SS, the suspended solids in the influent

Below is a chart from the 2010 rate study that shows a general percent of allocation of costs to the different components of Flow, BOD and SS:

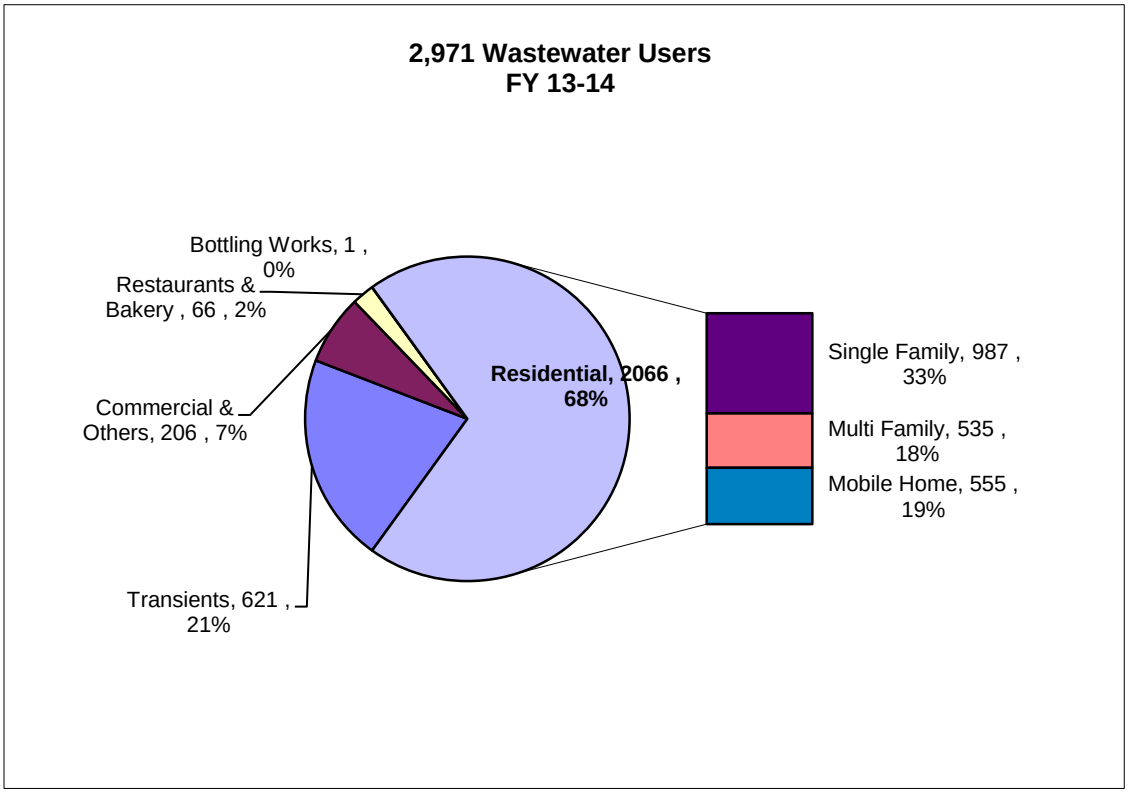


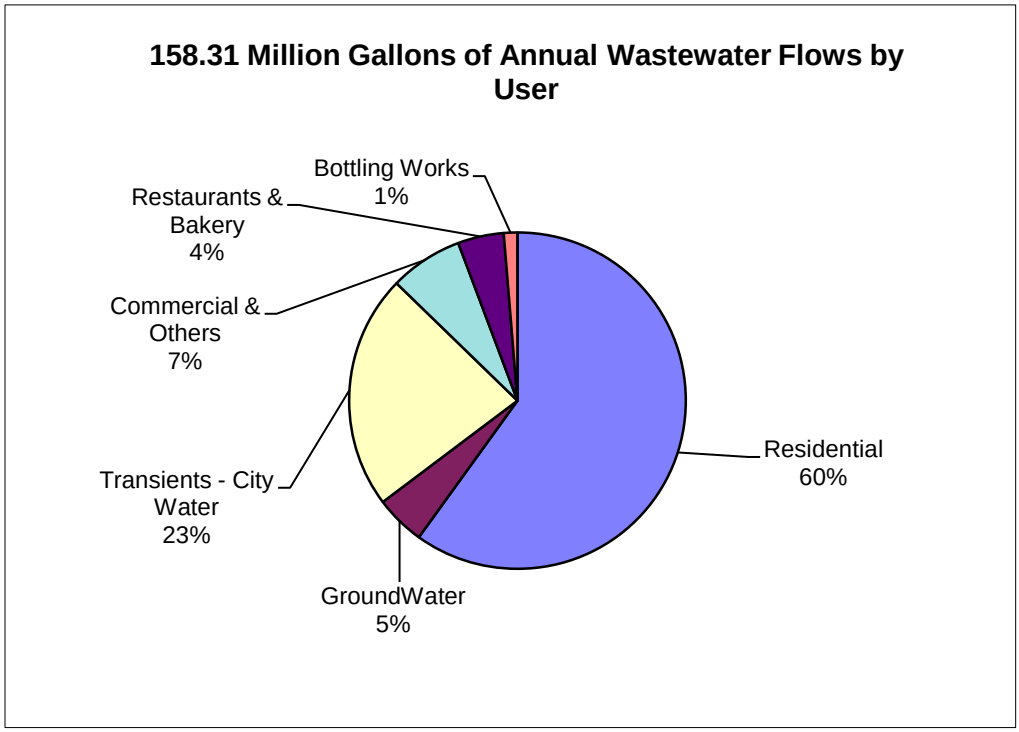
The projected operating and capital improvement costs are detailed in **Tables 9 and 10**. The percent allocations are also shown on those tables. Once the allocation of costs between the different components has been determined, the annual projected costs of Flow, BOD and SS can then be allocated between the different user categories. This secondary allocation is based on the percentage of each user category to the total percent of Flow, BOD or SS. The percent allocation for Flow, BOD and SS is detailed in the individual fiscal year rate calculations in **Tables 3 through 7**, which are described in the recommended rate section below.

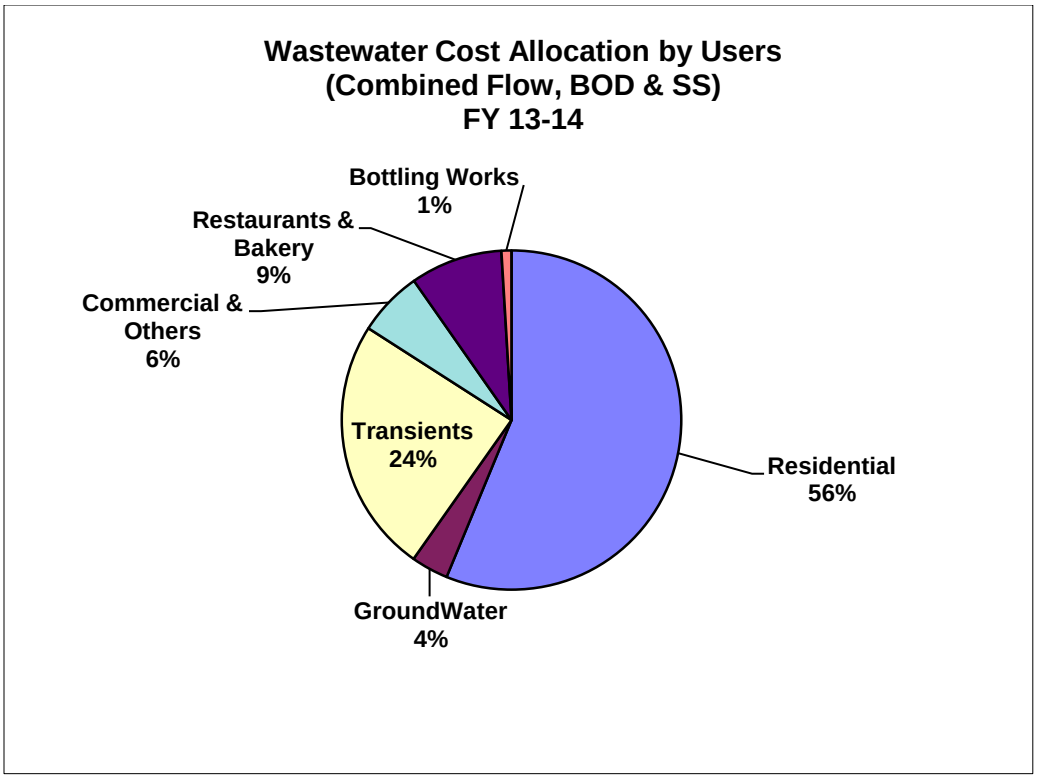
The chart below shows the allocation of FY 13-14 costs to each of the major user categories by Flow, BOD and SS:



Below are several other graphics that show the number of different type of users and allocation of costs by user categories for FY 13-14:




158.31 Million Gallons of Annual Wastewater Flows by User
Bottling Works 1%
Restaurants & Bakery 4%
Commercial & Others 7%
Transients - City Water 23%
GroundWater 5%
Residential 60%


Wastewater Cost Allocation by Users
(Combined Flow, BOD & SS)
FY 13-14
Bottling Works
1%
Restaurants &
Bakery
9%
Commercial &
Others
6%
Transients
24%
Residential
56%
GroundWater
4%

Recommended Rates and Charges

There is no recommended change in the adopted rates for FY 13-14 and 14-15 from the 2010 rate study. The proposed recommended rates are to extend the rate study projections for two years to FY 16-17 with 2% annual rate increases.

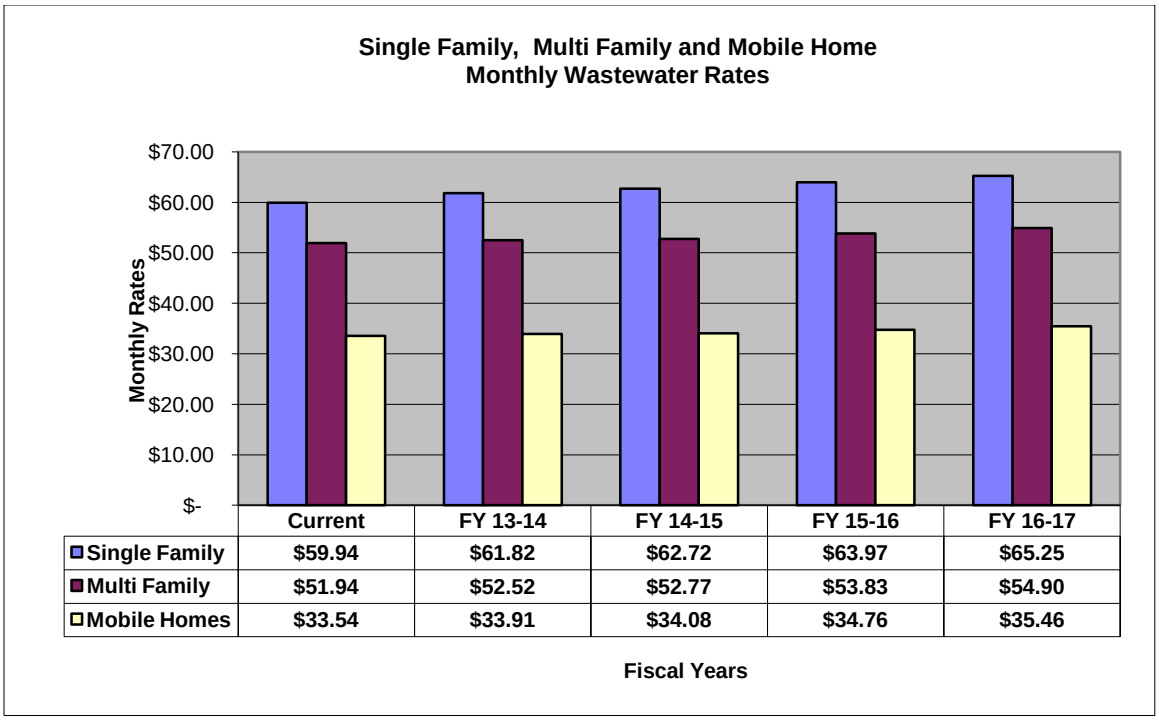
The costs of the wastewater system are funded from several sources. Below is a summary matrix of the types of costs and typical funding sources.

	Revenues			
Type of Costs	**Ratepayers**	**Connection Fees To New Development**	**Grants**	**Loans**
Operations	**X**			
Capital Improvements	**X**	**X**	**X**	**X**
Debt Payments	**X**	**X**		
Working Capital	**X**	**X**		
Reserves	**X**	**X**		

The ratepayers are ultimately responsible for all of the costs to operate and pay for improvements, debt payments and maintain working capital and reserves. For improvements that expand capacity to allow for new development, the one-time connection fee is charged to new development or expanded use of existing development to pay for the improvements or the financing costs. Grants and loans are other sources of funds for improvements.

The recommended rates are adjusted from the calculated rate for each user category based on the allocation of wastewater costs to user categories. The variances are due to the need to smooth the annual increases over the four-year period. In addition, the variances in the actual and projected connection fee revenues over the next four years to fund debt payments has been allocated between years in order to smooth and flatten the annual rate increases.

Below is a graphic summary of the user rates:



	Current	FY 13-14	FY 14-15	FY 15-16	FY 16-17
Single Family	$59.94	$61.82	$62.72	$63.97	$65.25
Multi Family	$51.94	$52.52	$52.77	$53.83	$54.90
Mobile Homes	$33.54	$33.91	$34.08	$34.76	$35.46

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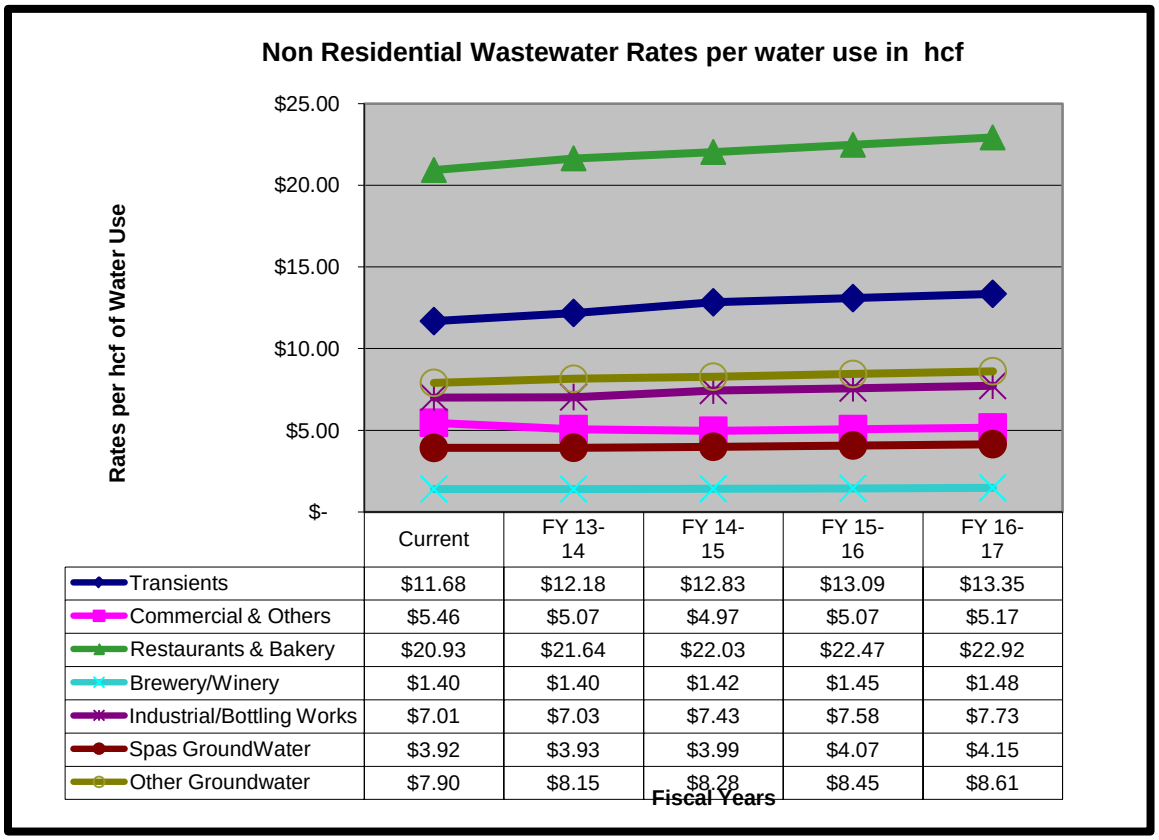

	Current	FY 13-14	FY 14-15	FY 15-16	FY 16-17
Transients	$11.68	$12.18	$12.83	$13.09	$13.35
Commercial & Others	$5.46	$5.07	$4.97	$5.07	$5.17
Restaurants & Bakery	$20.93	$21.64	$22.03	$22.47	$22.92
Brewery/Winery	$1.40	$1.40	$1.42	$1.45	$1.48
Industrial/Bottling Works	$7.01	$7.03	$7.43	$7.58	$7.73
Spas GroundWater	$3.92	$3.93	$3.99	$4.07	$4.15
Other Groundwater	$7.90	$8.15	$8.28	$8.45	$8.61

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473 **Tables 4 through 7** show the detailed allocation of costs, allocation of flows, BOD and
474 SS to users and calculation of rates for each user for Fiscal Years 13-14 through 16-17,
475 respectively. Each table contains three charts that show the following:

Wastewater Costs – This chart details the operating, net capital improvements, debt service and other adjustments that are used to determine the needed revenue from user rates for the fiscal year. The net capital improvement costs are reduced by any financing proceeds (these costs are reflected in the future debt service payments). The other adjustments include credits for grants, connection fees and a net amount of other sources of funds to reduce the annual revenue that needs to be generated from the ratepayers. These amounts are then allocated to the three components - Flow, BOD and SS.

Estimated Annual Growth Rate – This chart shows the projection of growth and generates the percentage that will be used to allocate the costs of Flow, BOD and SS to each of the user categories.

Cost Allocation, Prior Year Rates and prior adopted or Proposed Rates – This chart shows the allocation of Flow, BOD and SS costs to each of the user categories. A rate for each user category is calculated based on how the rate is to be applied – flat, City water use, measured flows or a combination. The actual calculated rates are then adjusted to reflect groupings of like users, a smoothing of changes over the four-year period and other adjustments.

The percentage of change from the current rates varies by user categories. This is primarily due to changes in the flow allocations to the user categories.

The adopted rates from the 2010 rate study have not been changed and the annual percent changes for FY 13-14 and 14-15 are from that rate study. The percentage changes for FY 15-16 have been fixed for all user categories at 2% per year.

The residential rate continues to be applied as a flat monthly rate per living unit. The Single Family and Multi-Family rate was separated for the 2010 Rate Study to better reflect the ratio of use by all residential users. The Mobile Home rate continues to be based on a percentage of the Single Family rate that reflects the lower estimated wastewater flows from mobile homes. This 2010 rate study adjusted the multi-family and mobile home rates ratio to 84% and 54% of the single-family rate, respectively. This

better reflects the estimated winter water use for Multi-family and Mobile Homes relative to Single Family homes.

All Transient types of user categories are grouped and based on type of use and the similar strength characteristics. This rate, as applied to Spas with groundwater discharges (user categories #11 & 12), also reflects only the cost of collection and treating City water discharges. A separate rate for Groundwater Discharge, as discussed below, would be either added to the Transient rate and applied to City water use, or applied separately and charged on measured groundwater discharge or a combined measurement (City water and groundwater discharge) of wastewater flow.

The Other non-residential rates include a number of user categories. The 2013 rate study continues to group the categories with similar strength characteristics as in the 2010 rate study. However, using the SWRCB guidelines, the category of Restaurant/Bakery has a higher BOD and SS strength characteristic and a separate, higher rate.

The Industrial & Bottling Works rates are applied to the actual measurement of each of the three components – Flow, BOD and SS. This is a typical method of recovering costs from a significant discharger with monthly flow measurement and laboratory analysis of the BOD and SS strengths. The methodology of calculating the rate has not changed from the 2010 Rate Study.

Ground Water Discharge Rates

The 2013 Rate Study continues the 2010 calculation of Groundwater Discharge rates to allow an option to base the groundwater discharge flows as an estimate of city water use or directly measure the groundwater discharge, similar to the Bottling Works rate.

If Spas or other users have the groundwater discharge measured in some form, then a separate and lower rate for only the groundwater discharge could be applied to the measured flow. For minor groundwater dischargers, such as residential users, the flat monthly charge per living unit, as discussed above, will be adequate to recover costs associated with typical residential discharges to the wastewater system.

The 2013 Rate Study will continue to provide for several options to recover costs associated with groundwater discharge, which will allow for different rates depending on the options of measurement. Below is a summary of the options for groundwater cost recovery;

Unmeasured groundwater discharge allocated by Spa user categories #11 and #12 and applied to City water use. This rate would be applied to the water use from the City water meter and in lieu of the Transient rate applied to City water use.

		Current	FY 13-14	FY 14-15	FY 15-16	FY 16-17
Combined Groundwater and effluent charge to Spas	*Monthly per hcf of Water*	*15.59*	*16.11*	*16.82*	*17.16*	*17.50*

For Spas and others that measure groundwater discharge flow separately from a well meter, a groundwater discharge lateral flow meter, sampling or other approved methods. This rate would be applied to the measurements groundwater discharge only. This would be in addition to the Transient rate based on City water use.

		Current	FY 13-14	FY 14-15	FY 15-16	FY 16-17
Groundwater Discharge Only	*Monthly per hcf of Measured Flow*	*7.90*	*8.15*	*8.28*	*8.45*	*8.61*

For Residential users with typical groundwater discharge flows for the type of use, as determined by the Public Works Director, they may elect to pay a flat monthly charge equal to the residential charge in lieu of installing a flow or water meter. This option would be used in cases where it is determined that the use of ground water has a negligible additional effect on wastewater flows.

	Current	FY 13-14	FY 14-15	FY 15-16	FY 16-17
Residential Flat monthly Charge	*59.94*	*61.82*	*62.72*	*63.97*	*65.25*

Capacity Allocation Charge

The Capacity Allocation charge is determined by dividing the total debt service payments and annual collection and treatment costs, adjusted to reflect the minimum maintenance costs, by the total number of users of the system. The minimum maintenance costs are the same as in the 2010 Rate Study at 66% of collection and 33% of treatment costs. This amount is an equitable representation of the costs associated with adding and

maintaining the wastewater system capacity for future connections. This monthly charge would be in addition to any other one-time connection fee that has been paid either in the past or to be paid in the future when development occurs. See **Table 8** for details to this fee.

When the property is developed, the Capacity Allocation charge will no longer be applicable and the appropriate user category rates for wastewater service will be applied.

Connection Fees

The 2013 rate study did not review or update the connection fee rate or basis adopted in the 2010 rate study. The wastewater system needs a comprehensive update of a master facility and operations plan to reflect the system improvements to support the City general plan build out. It was anticipated that an update would have been completed by FY 14-15 and the data to update the connection fee calculations available at that time.

The connection fee adopted in the 2010 rate study was $92,384 per acre-foot. This fee is adjusted each January by a standard Engineering News Record construction cost index to reflect the increases in typical construction costs. The current fee is $100,508 per acre-foot and it is recommended to continue this rate and method for annual changes until the wastewater master plan is updated.

The connection fees are made up of two components. The expansion of capacity component will relate to new or expanded development impacts to the system and payment for a fair share allocation of the cost of expanding capacity of the system to allow the development to occur. The “buy-in” component will pay a fair share for past improvements to the wastewater system and provide funding for future replacement. In addition, the Connection fee is automatically increased each year by a standard municipal construction cost index that reflects the inflation of the costs of capital improvements. The national Engineering News Record has produced comprehensive and detailed construction cost indexes for many years and is used throughout the construction industry and municipal governments as a source of cost information.

Table B, shows the comparison of the current fee and projection of Connection fee revenue based on the growth assumptions. Also, see **Table12** , which shows the projected revenue based on conservative growth projections.

Annual Change in Rates

The 2013 rate study continues the adopted provision that all of the user rates be automatically adjusted annually after January 1, 2018 by the Consumer Price Index (CPI). This annual change should be sufficient to keep the rates in line with operating costs changes. The applicable CPI would be the San Francisco-Oakland-San Jose region, which is a standardized index calculated by the Department of Labor Bureau of Labor Statistics every two months and focused on costs in the Bay area. Any annual CPI adjustment to the January 1, 2018 rates will be set by a City Council adopted resolution after a noticed public hearing on the rate adjustments.

Definitions, Conversion Factors and Formulas

Below are some definitions of terms and formulas to better understand the narrative and calculations in the tables.

BOD	=	Biochemical Oxygen Demand
SS	=	Suspended Solids
mg	=	Million gallons
mgd	=	Million gallons per day
gpd	=	Gallons per day
mg/l	=	Milligrams per liter
lb/d	=	Pounds per day
hcf	=	Hundred Cubic Feet (748 gallons)
1 Acre Foot is equal to		
43,560		square feet
325,829		gallons in volume
435.6		hcf
892.7		gallons per day over 1 year in volume
100 cubic feet (hcf) is equal to		
748		gallons
1 square foot or cubic foot is equal to		
7.48	gallons	
1 million gallons is equal to		
2,740		gallons per day (365 days)
3.1	acre feet of volume	

Example of formula to convert mg/l to lb/d of BOD or SS

From Table 2 in Rate Study		Estimated Flows	Strength Characteristics of Flows			
			Est BOD	Est SS	Calculated BOD per Day	Calculated SS per Day
		(Avg gpd)	(mg/l)	(mg/l)	(lb/d)	(lb/d)
Example of Transient General User Category						
Transient General		**41,043**	**310**	**120**	**106.1**	**41.1**
Step 1 - gallons converted to liters	gallons per day	**41,043**				
	Times liters /gallon	3.7854118				
	Equal Liters per day	155,365				
Step 2 - milligrams per liter	Standard Loading - mg/l		**310**	**120**		
	Times liters per day		155,365	155,365		
	Equals total milligrams		48,163,043	18,643,759		
Step 3 - milligrams converted to pounds	Total milligrams				48,163,043	18,643,759
	Divided by mg /pound				453,592.37	453,592.37
	Equal pound per day				**106.18**	**41.10**

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Summary of Proposed Rate Changes

Table A

	User Category	How Charged	Current Rates	Proposed Rates				
				FY 13-14	FY 14-15	FY 15-16	FY 16-17	Annually Beginning January 1, 2018
				Effective 30 days after Ordinance adoption	Janaury 1, 2015	Janaury 1, 2016	Janaury 1, 2017	
	Residential Rates			Current Adopted				
1	Single Family Residential	Monthly Flat Rate [1]	$ 59.94	$ 61.82	$ 62.72	$ 63.97	$ 65.25	
3 /4	Multi Family Residential	Monthly Flat Rate [1]	$ 51.94	$ 52.52	$ 52.77	$ 53.83	$ 54.90	
5	Mobile Homes	Monthly Flat Rate [1]	$ 33.54	$ 33.91	$ 34.08	$ 34.76	$ 35.46	All Rates Tied to CPI Adjustment
	Transient Rates							
10	Transient General	Monthly per Water hcf	$ 11.68	$ 12.18	$ 12.83	$ 13.09	$ 13.35	
11/12	Spas-Geo Water-No Mud [2]	Monthly per Water hcf	$ 11.68	$ 12.18	$ 12.83	$ 13.09	$ 13.35	
14	Campgrounds	Monthly per Water hcf	$ 11.68	$ 12.18	$ 12.83	$ 13.09	$ 13.35	
16	Bed & Breakfast	Monthly per Water hcf	$ 11.68	$ 12.18	$ 12.83	$ 13.09	$ 13.35	
	Other Non-Residential Rates							
20	Comm.General & All Others	Monthly per Water hcf	$ 5.46	$ 5.07	$ 4.97	$ 5.07	$ 5.17	
22	Restaurants & Bakery	Monthly per Water hcf	$ 20.93	$ 21.64	$ 22.03	$ 22.47	$ 22.92	
24	Laundries	Monthly per Water hcf	$ 5.46	$ 5.07	$ 4.97	$ 5.07	$ 5.17	
26	Public Buildings	Monthly per Water hcf	$ 5.46	$ 5.07	$ 4.97	$ 5.07	$ 5.17	
28	Medical Care	Monthly per Water hcf	$ 5.46	$ 5.07	$ 4.97	$ 5.07	$ 5.17	
40	Brewery/Winery	Monthly per Water hcf	$ 1.40	$ 1.40	$ 1.42	$ 1.45	$ 1.48	
43	Schools	Monthly per Water hcf	$ 5.46	$ 5.07	$ 4.97	$ 5.07	$ 5.17	
44	Service Stations	Monthly per Water hcf	$ 5.46	$ 5.07	$ 4.97	$ 5.07	$ 5.17	
42	Industrial & Bottling Works							
	Measured Flow	Monthly per Million Gallons	$ 9,369.57	$ 9,399.02	$ 9,929.06	$10,127.64	$10,330.19	
	Calculated BOD	Monthly per Pound	$ 1.60	$ 1.60	$ 1.62	$ 1.65	$ 1.69	
	Calculated SS	Monthly per Pound	$ 1.25	$ 1.24	$ 1.26	$ 1.29	$ 1.31	
	Groundwater Discharge Rates - Cold & Geothermal Wells							
	Spas (applies to User Categories #11 & 12) [2]	Monthly per Water hcf	$ 3.92	$ 3.93	$ 3.99	$ 4.07	$ 4.15	
	Residential/Spa/Commercial	Monthly per flow hcf	$ 7.90	$ 8.15	$ 8.28	$ 8.45	$ 8.61	
	Wastewater Capacity Allocation Charge	Monthly Flat Rate	$ 44.98	$ 41.70	$ 41.27	$ 41.84	$ 41.19	
	Monthly Minimum Rate for all Non-Residential User Categories	Monthly Flat Rate	$ 33.54	$ 33.91	$ 34.08	$ 34.76	$ 35.46	

[1] Billed on a Monthly or Bi-monthly basis per living unit

[2] These rates for Spas with groundwater discharge are combined and applied to hcf of City water use.

Summary of Proposed Rate Changes

Table A

User Category	How Charged	Current Rates	Proposed Rates FY 13-14 Effective 30 days after Ordinance adoption	FY 14-15 Janauary 1, 2015	FY 15-16 Janauary 1, 2016	FY 16-17 Janauary 1, 2017	Annually Beginning January 1, 2018
Application of rates relating to Groundwater Discharge Rates							
For Spas in User Categories #11 & #12 that **do not measure Ground Water Discharge**, the recovery of costs associated with treating Ground Water Discharge shall be added to the charge to treat typical effluent and applied to the monthly City water use.							
Combined Groundwater and effluent charge to Spas	Monthly per Water hcf	$ 15.59	$ 16.11	$ 16.82	$ 17.16	$ 17.50	
For Users that **measure the flow from Ground Water Discharge,** the rate shall be based on the Discharge meter, well meter or other methods (in addition to rate for typical effluent applied to City water use for separate City discharge lateral):							
Groundwater Discharge Only	Monthly per Measured Flow in hcf	$ 7.90	$ 8.15	$ 8.28	$ 8.45	$ 8.61	
Groundwater Discharge Only	Above Rate per million Gallons	$10,561.49	$10,895.72	$11,069.52	$11,290.91	$11,516.72	
For Residential users with typical **Ground Water Discharge for residential use**							
Residential Flat Charge		$ 59.94	$ 61.82	$ 62.72	$ 63.97	$ 65.25	

Summary of Proposed Rate Changes

Table A

User Category	How Charged	Current Rates	Proposed Rates				
			FY 13-14 Effective 30 days after Ordinance adoption	FY 14-15 Janaury 1, 2015	FY 15-16 Janaury 1, 2016	FY 16-17 Janaury 1, 2017	Annually Beginning January 1, 2018
Annual Percentage changes							
Single Family Residential			3.1%	1.5%	2.0%	2.0%	
Multi Family Residential			1.1%	0.5%	2.0%	2.0%	
Mobile Homes			1.1%	0.5%	2.0%	2.0%	
Transient General			4.3%	5.3%	2.0%	2.0%	
Spas-Geo Water-No Mud			4.3%	5.3%	2.0%	2.0%	
Spas - Geo Water & Mud			4.3%	5.3%	2.0%	2.0%	
Campgrounds			4.3%	5.3%	2.0%	2.0%	
Bed & Breakfast			4.3%	5.3%	2.0%	2.0%	
Comm.General & All Others			-7.1%	-2.0%	2.0%	2.0%	
Restaurants & Bakery			3.4%	1.8%	2.0%	2.0%	
Laundries			-7.1%	-2.0%	2.0%	2.0%	
Public Buildings			-7.1%	-2.0%	2.0%	2.0%	
Medical Care			-7.1%	-2.0%	2.0%	2.0%	
Brewery/Winery			0.0%	1.4%	2.0%	2.0%	
Schools			-7.1%	-2.0%	2.0%	2.0%	
Service Stations			-7.1%	-2.0%	2.0%	2.0%	
Industrial & Bottling Works							
Measured Flow			0.3%	5.6%	2.0%	2.0%	
Calculated BOD			0.0%	1.3%	2.0%	2.0%	
Calculated SS			-0.8%	1.6%	2.0%	2.0%	
Groundwater Discharge - Cold & Geothermal Wells							
Spas (Based on hcf of City water use)			0.3%	1.5%	2.0%	2.0%	
Residential/Spa/Commercial (Based on measured flow)			3.2%	1.6%	2.0%	2.0%	
Wastewater Capacity Allocation Charge			-7.3%	-1.0%	1.4%	-1.5%	
Monthly Minimum Rate for all User Categories			1.1%	0.5%	2.0%	2.0%	
Groundwater Discharge - Cold & Geothermal Wells							
Combined charge on Water Use - Spas only			3.3%	4.4%	2.0%	2.0%	
Charge based on Groundwater only Measured Flow			3.2%	1.6%	2.0%	2.0%	
Residential Flat Charge			3.1%	1.5%	2.0%	2.0%	

Wastewater System Connection Fee Summary

Table B

Current Connection/Development Fees as of January 1, 2013 as adjusted

Single Family Residence	$ 22,514
Per Annual Acre Foot of Wastewater Flows (1)	$ 100,508

Components of Connection Fee

Single Family Residence or Equivalent	
Expansion Related Costs per SFR Equivalent	$ 15,031
Equity Buy-in Related Costs per SFR Equivalent	7,483
Total Single Family Residence	**$ 22,514**
Per Annual Acre Foot of Wastewater Flows (1)	
Expansion Related Costs per Annual Acre Feet	$ 67,103
Equity Buy-in Related Costs per Annual Acre Feet	33,405
Total Per Annual Acre Foot of Wastewater Flows	**$ 100,508**

Cintinued Connection Fee Update

Annual changes to the Connection Fee will be based on the current Engineering News Record Construction Cost Index and adjusted each January 1st

Estimated Annual Connection Fees from Projected Growth

		Revised FY 12-13	Budget FY 13-14	Projected FY 14-15	Projected FY 15-16	Projected FY 16-17
Estimated Growth in Annual Acre Feet of Flow		17.0	2.7	23.3	1.0	1.0
Est Growth Projections Connection Fee Revenue		$ 1,694,745	$ 266,748	$ 2,389,115	$ 104,569	$ 106,660
Developer Contribution for Capital Improvements					$ 4,900,000	
Use of Connection Fees & Developer Contribtuion						
Payment of Debt	80%	$ 1,355,796	$ 213,399	$ 1,911,292	$ 83,655	$ 85,328
I & I Improvements, Replacement & Repair of System	20%	$ 338,949	$ 53,350	$ 477,823	$ 20,914	$ 21,332
New Capital Improvement - Trunk Line replacement					$ 4,900,000	

(1) To be applied to all Residential, Commercial and Industrial per Resolution 99-65 Standardize Use Table for Resource Management System. Application to major developments generally part of overall development agreements

Table C

Sources and Uses Summary
Wastewater Operations and Capital Improvements

	Actual FY 11-12	Revised FY 12-13	Budget FY 13-14	Projected FY 14-15	Projected FY 15-16	Projected FY 16-17
Revenues						
Charges for Services	2,034,130	2,172,287	2,219,353	2,265,305	2,310,611	2,356,823
Connection Fees	69,984	1,694,745	266,748	2,389,115	104,571	106,662
Developer Contribution	-	-	-	-	4,900,000	-
Interest Earnings	3,856	1,548	-	-	-	-
Other Revenues	95,242	85,903	98,544	72,375	73,223	74,087
Total Revenues	**2,203,212**	**3,954,483**	**2,584,645**	**4,726,795**	**7,388,404**	**2,537,572**
Expenses						
Operations						
Wastewater Collection	364,329	414,688	466,310	476,430	486,779	497,364
Wastewater Treatment	1,302,179	1,219,531	1,465,569	1,506,320	1,548,315	1,591,595
Depreciation	621,503	642,000	642,000	642,000	642,000	642,000
Equipment	2,855	-	201,990	82,335	-	-
Total Operating Expenses	**2,290,866**	**2,276,219**	**2,775,869**	**2,707,085**	**2,677,094**	**2,730,959**
Capital Improvements						
Collection Projects	1,500	-	230,000	68,250	4,905,000	-
Treatment Projects	15,630	55,000	520,000	600,000	-	-
Total Capital Improvements	**17,130**	**55,000**	**750,000**	**668,250**	**4,905,000**	**-**
Debt Payments						
Principal	378,385	379,194	392,241	405,569	418,982	432,885
Interest	325,087	313,472	301,526	288,994	275,901	259,235
Other Debt Related Costs	1,422	1,410	1,420	1,420	1,420	1,420
Total Debt Payments	**704,894**	**694,076**	**695,187**	**695,983**	**696,303**	**693,540**
Total Expenses	**3,012,890**	**3,025,295**	**4,221,056**	**4,071,318**	**8,278,397**	**3,424,500**
Net Other Adjustments/Transfers	**799,381**	**642,000**	**642,000**	**642,000**	**642,000**	**642,000**
Net Surplus/Deficit	**(10,297)**	**1,571,189**	**(994,410)**	**1,297,477**	**(247,993)**	**(244,928)**
Beginning Working Capital	**(31,958)**	**(42,255)**	**1,528,934**	**534,523**	**1,832,000**	**1,584,008**
Ending Working Capital	**(42,255)**	**1,528,934**	**534,523**	**1,832,000**	**1,584,008**	**1,339,080**
Working Capital Allocation						
Operating Reserve - 20%	333,302	326,844	386,376	396,550	407,019	417,792
Required Debt Service Reserve	73,035	83,676	94,312	104,949	106,224	106,332
Operating & Capital Contingency	(448,591)	(452,123)	(476,983)	(364,715)	(167,555)	26,442
Capital Reserve for future projects	-	1,570,537	530,818	1,695,216	1,238,319	788,514
Working Capital Allocation	**(42,255)**	**1,528,934**	**534,523**	**1,832,000**	**1,584,008**	**1,339,080**
Debt Ratio Coverage - 20% surplus revenues						
All Revenues	2,203,212	3,954,483	2,584,645	4,726,795	7,388,404	2,537,572
Less Connection Fees, Developer Contributions	(69,984)	(1,694,745)	(266,748)	(2,389,115)	(5,004,571)	(106,662)
Less Net Operating Expenses	(1,666,508)	(1,634,219)	(1,931,879)	(1,982,750)	(2,035,094)	(2,088,959)
Add back revenues for Debt Service	56,710	70,756	556,467	556,467	556,467	556,467
Net Available for Debt Service	**523,430**	**696,275**	**942,485**	**911,397**	**905,206**	**898,418**
Debt Service - Principal & Interest	**703,472**	**692,666**	**693,767**	**694,563**	**694,883**	**692,120**
Debt Service Coverage as ratio to Net Available	**0.74**	**1.01**	**1.36**	**1.31**	**1.30**	**1.30**
Four Year Average				**1.32**		

Summary of Annual Average Wastewater Flows & Loadings — Table 1

No proposed change from 2010 Wastewater Rate Study. See 2010 Wastewater Rate Study for additional supporting tables

	FY 06-07 to FY 08-09 Annual Average		
	Flows	BOD	SS
	mg	Pounds	Pounds
Total Flows & Loadings	211.77	330,984	407,316
Less Est Wet Weather Flow (I & I)	(26.04)		
Less Est Adjustment for High Occupancy during Summer Mths [2]	(11.85)	(30,645)	(19,768)
Adjusted Average Flows to Wastewater System	173.87	300,339	387,549
Less Measured Flows & Loading from Bottling Works [3]	(18.05)	(10,568)	(12,412)
Add Back Projections for Limited Bottling Works - Crystal Geyser	3.10	1,139	1,242
Net Est Flow Allocation to Other Users and Groundwater Discharge to Wastewater System	158.92	290,909	376,379

Allocations to Users Based on various Average Water Use, Actual Discharge & Calculated Discharge [4]	Estimated Annual Flow in million gallons (mg)	% of Total
Residential [4]		
Single Family	51.37	32%
Multi-Family	24.38	15%
Mobile Home	16.03	10%
Transient [5]		
Transient General	19.17	12%
Spas with Geo Water & No Mud	0.28	0%
Spas with Geo Water & Mud	11.84	7%
Campgrounds	2.98	2%
Bed & Breakfast	2.77	2%
Other Non-Residential [4]		
Comm. General & All Others	4.58	3%
Restaurants & Bakeries [5]	8.03	5%
Laundries	1.55	1%
Public Buildings	0.61	0%
Medical Care	2.79	2%
Brewery/Winery	0.003	0%
Schools	1.66	1%
Service Stations	0.22	0%
Bottling Works [adjusted for Cal Min closing]	3.10	2%
Groundwater Discharge - Cold & Geothermal Wells [6]		
Estimated Allocation to Spas with Geo Water	6.27	4%
Estimated Allocation to Residential and Other Uses	1.29	1%
Total Net Flows Allocated to Users	158.92	100%

Definitions

BOD	Biochemical Oxygen Demand	mgd	Million gallons per day	lb/d	Pounds per day
SS	Suspended Solids	gpd	Gallons per day	hcf	Hundred Cubic Feet (748 gallons)
mg	Million gallons	mg/l	Milligrams per liter		

[1] Calculated from measured flows at the Wastewater Treatment Plant in the dry months of July, August & September over 3 fiscal years and projected over 12 months.

[2] For all Transient Facilities - the difference between average monthly water use during high occupancy in July, August & September and annual average monthly water use averaged over 3 fiscal years and projected to a 12 month use. This estimate accounts for the higher occupancy in summer months over the year based on water use which will tend to distort the ADWF and the calculated groundwater discharge.

[3] Determined from 3 fiscal year average of flow meters at Calistoga Mineral Water and Crystal Geyser and monthly loading analysis.

[4] Based on average water use during wet winter months of November, December, January & February over 3 fiscal years and projected over 12 months. This more closely reflects flows to the wastewater system by eliminating landscape uses. Transient facilities are based on annualized average

[5] In order to better reflect occupancy variances during the year, the estimated wastewater flows are based on average monthly water use over 3 years and then annualized. This will flatten the variances in occupancy and better reflect wastewater flows from city water.

[6] The estimate of groundwater discharge into the wastewater system by Hotels, Spas and other uses is calculated from the difference between the total Net Estimated ADWF and the allocations to all other users. The allocation of groundwater flows between Spas and Other type of users is based on preliminary projections of daily discharge of all users by EKI, a consultant developing the Groundwater Wastewater Discharge Measurement

Summary of Wastewater Users, Allocated Flows and Strength Characteristics

Table 2

No proposed change from 2010 Wastewater Rate Study other than revised update to users, estimated flows and water use as of FY 11-12.

From 2010 Wastewater Rate Study City Users by Type		Number of Accounts	Number of Units	Adjusted Average Annual Wastewater Flow [8] (mg)	Estimated Flows From Water, Measured Use or Groundwater [9] (Avg gpd)	 % of Total Flow	Summary by Type of User % of Total Flow	Strength Characteristics of Flows [11] Est BOD (mg/l)	 Est SS (mg/l)	Calculated BOD per Day (lb/d)	Calculated SS per Day (lb/d)
Residential											
1	Single Family Residential (1)	966	966	51.37	140,731	32.32%		175	175	205.4	205.4
3/4	Multi Family (1)	106	545	24.38	66,802	15.34%		175	175	97.5	97.5
5	Mobile Homes (2)	4	555	16.03	43,925	10.09%	57.8%	175	175	64.1	64.1
Transient											
10	Transient General (3)	25	386	19.17	52,534	12.07%		310	200	135.8	87.6
11	Spa-Geo Water & No Mud (3)	2	29	0.28	760	0.17%		310	200	2.0	1.3
12	Spa-Geo Water & Mud (3)	12	178	11.84	32,438	7.45%		310	200	83.9	54.1
14	Campgrounds (4)	1	62	2.98	8,160	1.87%		310	200	21.1	13.6
16	Bed & Breakfast (3)	21	56	2.77	7,580	1.74%	23.3%	310	200	19.6	12.6
Other Non-Residential											
20	Comm. General & All Others (5)	85	124	4.58	12,548	2.88%		150	150	15.7	15.7
22	Restaurants & Bakery (6)	31	66	8.03	21,995	5.05%		1,000	600	183.4	110.1
24	Laundries	1	1	1.55	4,256	0.98%		150	110	5.3	3.9
26	Public Buildings	13	13	0.61	1,668	0.38%		130	80	1.8	1.1
28	Medical Care (7)	13	64	2.79	7,636	1.75%		250	100	15.9	6.4
40	Brewery/Winery	1	1	0.003	8	0.00%		1,500	750	0.1	0.1
43	Schools	5	5	1.66	4,554	1.05%		130	100	4.9	3.8
44	Service Stations	2	2	0.22	592	0.14%	12.2%	180	280	0.9	1.4
42	Bottling Works [10]	1	1	3.10	8,492	1.95%	2.0%	44	48	3.1	3.4
Groundwater Discharge - Cold & Geothermal Wells [12]											
	Estimated Spa Discharge			6.27	17,179	3.95%	3.9%	50	50	7.2	7.2
	Estimated Residential & Other Use			1.29	3,543	0.81%	0.8%	50	50	1.5	1.5
	Totals	**1,289**	**3,054**	**158.92**	**435,401**	**100%**	**100%**			**869.2**	**690.7**

Summary of Wastewater Users, Allocated Flows and Strength Characteristics

Table 2

Updated for 2013 Wastewater Rate Study City Users by Type	Number of Accounts	Number of Units	Adjusted Average Annual Wastewater Flow [8] (mg)	FY 11-12 Estimated Flows From Water, Measured Use or Groundwater [9] (Avg gpd)	% of Total Flow	Summary by Type of User % of Total Flow	Strength Characteristics of Flows [11] Est BOD (mg/l)	Est SS (mg/l)	Calculated BOD per (lb/d)	Calculated SS per Day (lb/d)
Residential										
1 Single Family Residential (1)	987	987	51.73	141,722	32.55%		175	175	206.8	206.8
3/4 Multi Family (1)	106	535	23.90	65,492	15.04%		175	175	95.6	95.6
5 Mobile Homes (2)	4	555	19.28	52,827	12.13%	59.7%	175	175	77.1	77.1
Transient										
10 Transient General (3)	26	333	21.18	58,025	13.33%		310	200	150.0	96.8
11 Spa-Geo Water & No Mud (3)	0	0	-	-	0.00%		310	200	0.0	0.0
12 Spa-Geo Water & Mud (3)	11	170	10.01	27,437	6.30%		310	200	70.9	45.8
14 Campgrounds (4)	1	62	2.23	6,120	1.41%		310	200	15.8	10.2
16 Bed & Breakfast (3)	19	56	2.24	6,139	1.41%	22.4%	310	200	15.9	10.2
Other Non-Residential										
20 Comm. General & All Others (5)	79	125	4.72	12,943	2.97%		150	150	16.2	16.2
22 Restaurants & Bakery (6)	28	66	7.00	19,188	4.41%		1,000	600	160.0	96.0
24 Laundries	1	1	1.77	4,859	1.12%		150	110	6.1	4.5
26 Public Buildings	12	12	1.57	4,299	0.99%		130	80	4.7	2.9
28 Medical Care (7)	9	60	1.13	3,088	0.71%		250	100	6.4	2.6
40 Brewery/Winery	1	1	0.00	2	0.00%		1,500	750	0.0	0.0
43 Schools	5	5	1.70	4,658	1.07%		130	100	5.1	3.9
44 Service Stations	2	2	0.21	564	0.13%	11.4%	180	280	0.8	1.3
42 Bottling Works [10]	1	1	2.06	5,652	1.30%	1.3%	44	48	2.1	2.3
Groundwater Discharge - Cold &										
Estimated Spa Discharge			6.27	17,179	3.95%	3.9%	50	50	7.2	7.2
Estimated Residential & Other			1.29	3,543	0.81%	0.8%	50	50	1.5	1.5
Totals	**1,292**	**2,971**	**158.31**	**433,737**	**100%**	**100%**			**842.2**	**680.8**

Type of Users and Multiplier Units

(1) Living Units
(2) Mobile Homes
(3) Transient Rooms
(4) Campground Sites
(5) Commercial Businesses & Living Units
(6) Transient Rooms & Comm. Businesses
(7) Care Facility Rooms & Comm. Businesses

[8] Adjusted Average Annual Wastewater flows from Table 1 including Bottling Works.
[9] Flows from Table 1 recalculated into average gallons per day with percent of total flow for each user category.
[10] Bottling Works Flows and loadings are an average of actual measurements from FY 06-07 to FY 08-09 for Crystal Geys
[11] No change from 2010 Study. Based on State Water Resources Control Board strength characteristics and sampling data for different users.
[12] No change from 2010 Study for determination of flow and allocations. Strength characteristics are minimal and assumes mud traps

Definitions

BOD	Biochemical Oxygen Demand
SS	Suspended Solids
mg	Million gallons
mgd	Million gallons per day
gpd	Gallons per day
mg/l	Milligrams per liter
lb/d	Pounds per day
hcf	Hundred Cubic Feet (748 gallons)

1 Gallon = 3.785411784 Lit 1 Pound = 453,592.37 mg

Summary of Wastewater Costs Allocation To Users - FY 12-13

Table 3

Updated projected users, flows and costs for calculation purposes

Wastewater Costs	FY 12-13 Projected	Percentage Allocation			Allocation Amounts		
		FLOW	BOD	SS	FLOW	BOD	SS
Operating Costs							
Collection	414,688	100%	0%	0%	414,688	-	-
Treatment	1,219,531	60%	26%	14%	731,719	317,078	170,734
Depreciation	642,000	80%	13%	7%	513,600	83,460	44,940
Other - Special Studies	-	60%	26%	14%	-	-	-
Other - Equipment	-	80%	13%	7%	-	-	-
Operating Costs	**2,276,219**	**73%**	**18%**	**9%**	**1,660,007**	**400,538**	**215,674**
Capital Improvements							
Water conservation program	-	63%	23%	14%	-	-	-
Collection Capital Projects	-	100%	0%	0%	-	-	-
Treatment Capital Projects	55,000	63%	23%	14%	34,650	12,650	7,700
Less Amounts Financed	-	100%	0%	0%	-	-	-
Net Capital Improvements	**55,000**	**63%**	**23%**	**14%**	**34,650**	**12,650**	**7,700**
Debt Payments	**694,076**	**53%**	**27%**	**20%**	**367,860**	**187,400**	**138,815**
Net Captial Imp Costs from Connection Fee	**(55,000)**	**63%**	**23%**	**14%**	**(34,650)**	**(12,650)**	**(7,700)**
Depreciation	**(642,000)**	**80%**	**13%**	**7%**	**(513,600)**	**(83,460)**	**(44,940)**
Operating Grants/Proceeds		**53%**	**27%**	**20%**	**-**	**-**	**-**
Misc Rev & Interest	**(85,903)**	**68%**	**20%**	**12%**	**(58,177)**	**(17,162)**	**(10,565)**
Portion of Connection Fee for Debt	**(70,756)**	**68%**	**20%**	**12%**	**(47,918)**	**(14,136)**	**(8,702)**
Adjustment for Revised Projections	**652**	**67%**	**20%**	**13%**	**437**	**130**	**85**
Total Costs to Be Allocated to Users	**2,172,287**	**65%**	**22%**	**13%**	**1,408,609**	**473,311**	**290,367**

Summary of Wastewater Costs Allocation To Users - FY 12-13

Table 3

Updated projected users, flows and costs for calculation purposes

	User Category	FY 12-13 # Accts	# Units	Total Est Flows [1] (avg gpd)	%	Est BOD (lb/d)	%	Est SS (lb/d)	%
	Estimated Annual Growth Rate								
1	SFR Residential [2]	987	987	141,722	32.7%	206.8	24.6%	206.8	30.4%
3/4	Multi Family-Bi-Monthly [2]	106	535	65,492	15.1%	95.6	11.3%	95.6	14.0%
	Total Single & Multi-Family Residential	1,093	1,522	207,214	47.8%	302.4	35.9%	302.4	44.4%
5	Mobile Homes	4	555	52,827	12.2%	77.1	9.2%	77.1	11.3%
10	Transient General	26	333	58,025	13.4%	150.0	17.8%	96.8	14.2%
11	Spa-Geo Water-No Mud	-	-	-	0.0%	-	0.0%	-	0.0%
12	Spa-Geo Water & Mud	11	170	27,437	6.3%	70.9	8.4%	45.8	6.7%
14	Campgrounds	1	62	6,120	1.4%	15.8	1.9%	10.2	1.5%
16	Bed & Breakfast	19	56	6,139	1.4%	15.9	1.9%	10.2	1.5%
20	Comm.General & All Others	79	125	12,943	3.0%	16.2	1.9%	16.2	2.4%
22	Restaurants & Bakery	28	66	19,188	4.4%	160.0	19.0%	96.0	14.1%
24	Laundries	1	1	4,859	1.1%	6.1	0.7%	4.5	0.7%
26	Public Buildings	12	12	4,299	1.0%	4.7	0.6%	2.9	0.4%
28	Medical Care	9	60	3,088	0.7%	6.4	0.8%	2.6	0.4%
40	Brewery/Winery	1	1	2	0.0%	0.0	0.0%	0.0	0.0%
43	Schools	5	5	4,658	1.1%	5.1	0.6%	3.9	0.6%
44	Service Stations	2	2	564	0.1%	0.8	0.1%	1.3	0.2%
42	Bottling Works	1	1	5,652	1.3%	2.1	0.2%	2.3	0.3%
	Groundwater Discharge - Cold & Geothermal Wells								
	Estimated Spa			17,179	4.0%	7.2	0.9%	7.2	1.1%
	Estimated Residential & Other Use			3,543	0.8%	1.5	0.2%	1.5	0.2%
	Totals	**1,292**	**2,971**	**433,737**	**100.0%**	**842.2**	**100%**	**680.8**	**100%**

Summary of Wastewater Costs Allocation To Users - FY 12-13

Table 3

Updated projected users, flows and costs for calculation purposes

	User Category	Cost Allocation FLOW	BOD	SS	Totals	Estimated Measured Base Flows in hcf [3]	FY 11-12 Rates Rates	How Charged	Adopted Rates for FY 12-13 Applied after January 1st	Percent Change
1	SFR Residential	460,258	116,243	88,226	664,727	69,156	$ 56.63	Flat Per Month	$ 59.94	5.8%
3/4	Multi Family	212,693	53,718	40,771	307,181	31,958	$ 52.94	Flat Per Month	$ 51.94	-1.9%
	Total Single & Multi-Family Residential	672,950	169,961	128,997	971,908	101,114				
5	Mobile Homes [4]	171,562	43,330	32,886	247,778	25,778	$ 34.18	Flat Per Month	$ 33.54	-1.9%
10	Transient General	188,443	84,308	41,283	314,033	30,015	$ 10.70	per hcf	$ 11.68	9.1%
11	Spa-Geo Water-No Mud	-	-	-	-	-	$ 10.70	per hcf	$ 11.68	9.1%
12	Spa-Geo Water & Mud	89,105	39,865	19,520	148,490	14,254	$ 10.70	per hcf	$ 11.68	9.1%
14	Campgrounds	19,875	8,892	4,354	33,122	3,268	$ 10.70	per hcf	$ 11.68	9.1%
16	Bed & Breakfast	19,937	8,920	4,368	33,224	3,779	$ 10.70	per hcf	$ 11.68	9.1%
20	Comm.General & All Others	42,034	9,099	6,906	58,040	9,254	$ 6.31	per hcf	$ 5.46	-13.5%
22	Restaurants & Bakery	62,315	89,933	40,955	193,203	9,620	$ 17.61	per hcf	$ 20.93	18.9%
24	Laundries	15,780	3,416	1,901	21,098	2,361	$ 6.31	per hcf	$ 5.46	-13.5%
26	Public Buildings	13,961	2,619	1,223	17,804	5,868	$ 6.31	per hcf	$ 5.46	-13.5%
28	Medical Care	10,029	3,618	1,098	14,745	4,962	$ 6.31	per hcf	$ 5.46	-13.5%
40	Brewery/Winery	6	14	5	26	80	$ 1.47	per hcf	$ 1.40	-4.9%
43	Schools	15,127	2,838	1,657	19,623	3,894	$ 6.31	per hcf	$ 5.46	-13.5%
44	Service Stations	1,832	476	562	2,869	403	$ 6.31	per hcf	$ 5.46	-13.5%
42	Bottling Works									
	Flow	18,355			18,355	2,062,980	$ 8,349.28	Per Million Glns	$ 9,369.57	12.2%
	BOD		1,166		1,166	757	$ 1.60	Per Lbs	$ 1.60	-0.3%
	SS			965	965	826	$ 1.24	Per Lbs	$ 1.25	0.4%
	Groundwater Discharge - Cold & Geothermal Wells									
	Estimated Spa [2]	55,789	4,026	3,055	62,870	14,254	$ 4.11	per hcf of Water	$ 3.92	-4.6%
	Estimated Residential & Other Use [5]	11,508	830	630	12,968	1,729	$ 7.45	Per hcf Measured	$ 7.90	6.0%
	Totals	**1,408,609**	**473,311**	**290,367**	**2,172,287**					

[1] Allocation of Flows, Strengths and Growth based on Tables 1, 2 and 3

[2] This rate is calculated based on average water use for Spas in User Categories #11 & 12. It is to be combined with rate calculated from water use effluent. This is a method to recover costs related to Spa Groundwater discharges. Different

Est Measured Groundwater flow from Spa uses		8,383
Est Rate per hcf of measured Groundwater flow	$	9.05

[3] These estimated flows are used to "calculate" a rate based on water use or measured flows. For Flat Rates, the flow is average winter use and is for information only. For Bottling Works, the amount is an adjusted from FY 11-12 actual flows. . For all others, it is based on actual FY 11-12 annual Water use which is used to determine the wastewater charge.

[4] Rates between SFR, MFR and Mobile Homes generally reflect use ratios as calculated in 2010 Wastewater Rate Study.

[5] This rate is calculated to apply to measured groundwater discharge flow only.

Summary of Wastewater Costs Allocation To Users - FY 13-14

Table 4

No Proposed Change in rates from 2010 Wastewater Rate Study. Projected users, flows and costs have been updated.

Wastewater Costs	FY 13-14 Projected	Percentage Allocation			Allocation Amounts		
		FLOW	BOD	SS	FLOW	BOD	SS
Operating Costs							
Collection	466,310	100%	0%	0%	466,310	-	-
Treatment	1,465,569	60%	26%	14%	879,341	381,048	205,180
Depreciation	642,000	80%	13%	7%	513,600	83,460	44,940
Other - Special Studies	-	60%	26%	14%	-	-	-
Other - Equipment	201,990	80%	13%	7%	161,592	26,259	14,139
Operating Costs	**2,775,869**	**73%**	**18%**	**10%**	**2,020,843**	**490,767**	**264,259**
Capital Improvements							
Water conservation program	-	63%	23%	14%	-	-	-
Collection Capital Projects	230,000	100%	0%	0%	230,000	-	-
Treatment Capital Projects	520,000	63%	23%	14%	327,600	119,600	72,800
WasteWater Treatment Plant	-						
Less Amounts Financed	-	100%	0%	0%	-	-	-
Net Capital Improvements	**750,000**	**74%**	**16%**	**10%**	**557,600**	**119,600**	**72,800**
Debt Payments	**695,187**	**53%**	**27%**	**20%**	**368,449**	**187,700**	**139,037**
Net Captial Imp Costs from Connection Fee	**(750,000)**	**74%**	**16%**	**10%**	**(557,600)**	**(119,600)**	**(72,800)**
Depreciation	**(642,000)**	**80%**	**13%**	**7%**	**(513,600)**	**(83,460)**	**(44,940)**
Operating Grants/Proceeds		**53%**	**27%**	**20%**	**-**	**-**	**-**
Misc Rev & Interest	**(98,544)**	**68%**	**20%**	**12%**	**(66,737)**	**(19,687)**	**(12,120)**
Portion of Connection Fee for Debt	**(556,467)**	**68%**	**20%**	**12%**	**(376,857)**	**(111,172)**	**(68,438)**
Adjustment for Revised Projections	**45,309**	**68%**	**20%**	**12%**	**30,685**	**9,052**	**5,572**
		67%	**20%**	**13%**	**-**	**-**	**-**
Total Costs to Be Allocated to Users	**2,219,353**	**66%**	**21%**	**13%**	**1,462,783**	**473,200**	**283,371**

Summary of Wastewater Costs Allocation To Users - FY 13-14

Table 4

	User Category	FY 13-14 # Accts	# Units	Total Est Flows [1] (avg gpd)	%	Est BOD (lb/d)	%	Est SS (lb/d)	%
		Estimated Annual Growth Rate							
1	SFR Residential [2]	987	987	141,722	32.7%	206.8	24.6%	206.8	30.4%
3/4	Multi Family-Bi-Monthly [2]	106	535	65,492	15.1%	95.6	11.3%	95.6	14.0%
	Total Single & Multi-Family Residential	1,093	1,522	207,214	47.8%	302.4	35.9%	302.4	44.4%
5	Mobile Homes	4	555	52,827	12.2%	77.1	9.2%	77.1	11.3%
10	Transient General	26	333	58,025	13.4%	150.0	17.8%	96.8	14.2%
11	Spa-Geo Water-No Mud	-	-	-	0.0%	-	0.0%	-	0.0%
12	Spa-Geo Water & Mud	11	170	27,437	6.3%	70.9	8.4%	45.8	6.7%
14	Campgrounds	1	62	6,120	1.4%	15.8	1.9%	10.2	1.5%
16	Bed & Breakfast	19	56	6,139	1.4%	15.9	1.9%	10.2	1.5%
20	Comm.General & All Others	79	125	12,943	3.0%	16.2	1.9%	16.2	2.4%
22	Restaurants & Bakery	28	66	19,188	4.4%	160.0	19.0%	96.0	14.1%
24	Laundries	1	1	4,859	1.1%	6.1	0.7%	4.5	0.7%
26	Public Buildings	12	12	4,299	1.0%	4.7	0.6%	2.9	0.4%
28	Medical Care	9	60	3,088	0.7%	6.4	0.8%	2.6	0.4%
40	Brewery/Winery	1	1	2	0.0%	0.0	0.0%	0.0	0.0%
43	Schools	5	5	4,658	1.1%	5.1	0.6%	3.9	0.6%
44	Service Stations	2	2	564	0.1%	0.8	0.1%	1.3	0.2%
42	Bottling Works	1	1	5,652	1.3%	2.1	0.2%	2.3	0.3%
	Groundwater Discharge - Cold & Geothermal Wells								
	Estimated Spa			17,179	4.0%	7.2	0.9%	7.2	1.1%
	Estimated Residential & Other Use			3,543	0.8%	1.5	0.2%	1.5	0.2%
	Totals	1,292	2,971	433,737	100.0%	842.2	100.0%	680.8	100.0%

Summary of Wastewater Costs Allocation To Users - FY 13-14

Table 4

	User Category	Cost Allocation FLOW	BOD	SS	Totals	Estimated Measured Base Flows in hcf [3]	FY 12-13 Rates Rates	How Charged	Adopted Rates for FY 13-14 Applied after January 1st	Percent Change
1	SFR Residential	477,959	116,216	86,100	680,275	69,156	$ 59.94	Flat Per Month	61.82	3%
3/4	Multi Family	220,872	53,705	39,788	314,366	31,958	$ 51.94	Flat Per Month	52.52	1%
	Total Single & Multi-Family Residential	698,831	169,921	125,889	994,641	101,114		Flat Per Month		
5	Mobile Homes [4]	178,160	43,319	32,094	253,573	25,778	$ 33.54	Flat Per Month	$ 33.91	1%
10	Transient General	195,690	84,288	40,288	320,266	30,015	$ 11.68	per hcf	$ 12.18	4%
11	Spa-Geo Water-No Mud	-	-	-	-	-	$ 11.68	per hcf	$ 12.18	4%
12	Spa-Geo Water & Mud	92,532	39,855	19,050	151,437	14,254	$ 11.68	per hcf	$ 12.18	4%
14	Campgrounds	20,640	8,890	4,249	33,779	3,268	$ 11.68	per hcf	$ 12.18	4%
16	Bed & Breakfast	20,704	8,918	4,262	33,884	3,779	$ 11.68	per hcf	$ 12.18	4%
20	Comm.General & All Others	43,650	9,097	6,740	59,488	9,581	$ 5.46	per hcf	$ 5.07	-7%
22	Restaurants & Bakery	64,712	89,912	39,968	194,592	9,620	$ 20.93	per hcf	$ 21.64	3%
24	Laundries	16,387	3,415	1,856	21,658	2,361	$ 5.46	per hcf	$ 5.07	-7%
26	Public Buildings	14,498	2,619	1,194	18,311	5,868	$ 5.46	per hcf	$ 5.07	-7%
28	Medical Care	10,414	3,617	1,072	15,104	4,962	$ 5.46	per hcf	$ 5.07	-7%
40	Brewery/Winery	7	14	5	26	80	$ 1.40	per hcf	$ 1.40	0%
43	Schools	15,709	2,837	1,617	20,164	3,894	$ 5.46	per hcf	$ 5.07	-7%
44	Service Stations	1,902	476	548	2,926	403	$ 5.46	per hcf	$ 5.07	-7%
42	Bottling Works									
	Flow	19,061			19,061	2,062,980	$ 9,369.57	Per Million Glns	$ 9,399.02	0%
	BOD		1,165		1,165	757	$ 1.60	Per Lbs	$ 1.60	0%
	SS			942	942	826	$ 1.25	Per Lbs	$ 1.24	-1%
	Groundwater Discharge - Cold & Geothermal Wells	-	-	-	-					
	Estimated Spa [2]	57,935	4,025	2,982	64,941	14,254	$ 3.92	per hcf of Water	$ 3.93	0%
	Estimated Residential & Other Use [5]	11,950	830	615	13,396	1,729	$ 7.90	Per hcf Measured	$ 8.15	3%
	Totals	**1,462,783**	**473,200**	**283,371**	**2,219,353**					

Summary of Wastewater Costs Allocation To Users - FY 14-15

Table 5

No Proposed Change in rates from 2010 Wastewater Rate Study. Projected users, flows and costs have been updated.

Wastewater Costs	FY 14-15 Projected	Percentage Allocation			Allocation Amounts		
		FLOW	BOD	SS	FLOW	BOD	SS
Operating Costs							
Collection	476,430	100%	0%	0%	476,430	-	-
Treatment	1,506,320	60%	26%	14%	903,792	391,643	210,885
Depreciation	642,000	80%	13%	7%	513,600	83,460	44,940
Other - Special Studies	-	60%	26%	14%	-	-	-
Other - Equipment	82,335	80%	13%	7%	65,868	10,704	5,763
Operating Costs	**2,707,085**	**72%**	**18%**	**10%**	**1,959,690**	**485,807**	**261,588**
Capital Improvements							
Water conservation program	-	63%	23%	14%	-	-	-
Collection Capital Projects	68,250	100%	0%	0%	68,250	-	-
Treatment Capital Projects	600,000	63%	23%	14%	378,000	138,000	84,000
WasteWater Treatment Plant							
Less Amounts Financed		100%	0%	0%	-	-	-
Net Capital Improvements	**668,250**	**67%**	**21%**	**13%**	**446,250**	**138,000**	**84,000**
Debt Payments	**695,983**	**53%**	**27%**	**20%**	**368,871**	**187,915**	**139,197**
Net Captial Imp Costs from Connection Fee	**(668,250)**	**67%**	**21%**	**13%**	**(446,250)**	**(138,000)**	**(84,000)**
Depreciation	**(642,000)**	**80%**	**13%**	**7%**	**(513,600)**	**(83,460)**	**(44,940)**
Operating Grants/Proceeds		**53%**	**27%**	**20%**	**-**	**-**	**-**
Misc Rev & Interest	**(72,375)**	**68%**	**20%**	**12%**	**(49,015)**	**(14,459)**	**(8,901)**
Portion of Connection Fee for Debt	**(556,467)**	**68%**	**20%**	**12%**	**(376,857)**	**(111,172)**	**(68,438)**
Adjustment for Revised Projections	**133,080**	**67%**	**20%**	**13%**	**89,164**	**26,616**	**17,300**
Total Costs to Be Allocated to Users	**2,265,305**	**65%**	**22%**	**13%**	**1,478,252**	**491,247**	**295,806**

Summary of Wastewater Costs Allocation To Users - FY 14-15

Table 5

No Proposed Change in rates from 2010 Wastewater Rate Study. Projected users, flows and costs have been updated.

	User Category	FY 14-15 # Accts	# Units	Total Est Flows [1] (avg gpd)	%	Est BOD (lb/d)	%	Est SS (lb/d)	%
1	SFR Residential [2]	987	987	141,722	31.8%	206.8	23.7%	206.8	29.5%
3/4	Multi Family-Bi-Monthly [2]	106	535	65,492	14.7%	95.6	11.0%	95.6	13.7%
Total Single & Multi-Family Residential		1,093	1,522	207,214	46.5%	302.4	34.7%	302.4	43.2%
5	Mobile Homes	4	555	52,827	11.9%	77.1	8.8%	77.1	11.0%
10	Transient General	29	406	69,630	15.6%	180.0	20.6%	116.1	16.6%
11	Spa-Geo Water-No Mud	-	-	-	0.0%	-	0.0%	-	0.0%
12	Spa-Geo Water & Mud	11	170	27,437	6.2%	70.9	8.1%	45.8	6.5%
14	Campgrounds	1	62	6,120	1.4%	15.8	1.8%	10.2	1.5%
16	Bed & Breakfast	19	56	6,139	1.4%	15.9	1.8%	10.2	1.5%
20	Comm.General & All Others	79	125	12,943	2.9%	16.2	1.9%	16.2	2.3%
22	Restaurants & Bakery	28	66	19,188	4.3%	160.0	18.3%	96.0	13.7%
24	Laundries	1	1	4,859	1.1%	6.1	0.7%	4.5	0.6%
26	Public Buildings	12	12	4,299	1.0%	4.7	0.5%	2.9	0.4%
28	Medical Care	9	60	3,088	0.7%	6.4	0.7%	2.6	0.4%
40	Brewery/Winery	1	1	2	0.0%	0.0	0.0%	0.0	0.0%
43	Schools	5	5	4,658	1.0%	5.1	0.6%	3.9	0.6%
44	Service Stations	2	2	564	0.1%	0.8	0.1%	1.3	0.2%
42	Bottling Works	1	1	5,652	1.3%	2.1	0.2%	2.3	0.3%
	Groundwater Discharge - Cold & Geothermal Wells								
	Estimated Spa			17,179	3.9%	7.2	0.8%	7.2	1.0%
	Estimated Residential & Other Use			3,543	0.8%	1.5	0.2%	1.5	0.2%
	Totals	1,295	3,044	445,342	100.0%	872.2	100.0%	700.1	100.0%

Summary of Wastewater Costs Allocation To Users - FY 14-15

Table 5

No Proposed Change in rates from 2010 Wastewater Rate Study. Projected users, flows and costs have been updated.

	User Category	Cost Allocation				Estimated Measured Base Flows in hcf [3]	FY 13-14 Rates		Adopted Rates for FY 14-15	
		FLOW	BOD	SS	Totals		Rates	How Charged	Applied after January 1st	Percent Change
1	SFR Residential	470,427	116,498	87,394	674,318	69,156	$ 61.82	Flat Per Month	62.72	1%
3/4	Multi Family	217,392	53,835	40,386	311,613	31,958	$ 52.52	Flat Per Month	52.77	0%
	Total Single & Multi-Family Residential	687,819	170,333	127,780	985,932	101,114				
5	Mobile Homes [4]	175,352	43,425	32,576	251,353	25,778	$ 33.91	Flat Per Month	$ 34.08	1%
10	Transient General	231,127	101,391	49,072	381,590	35,492	$ 12.18	per hcf	$ 12.83	5%
12	Spa-Geo Water & Mud	91,073	39,952	19,336	150,362	14,254	$ 12.18	per hcf	$ 12.83	5%
14	Campgrounds	20,315	8,912	4,313	33,539	3,268	$ 12.18	per hcf	$ 12.83	5%
16	Bed & Breakfast	20,378	8,939	4,326	33,643	3,779	$ 12.18	per hcf	$ 12.83	5%
20	Comm.General & All Others	42,963	9,119	6,841	58,923	9,908	$ 5.07	per hcf	$ 4.97	-2%
22	Restaurants & Bakery	63,692	90,130	40,568	194,391	9,620	$ 21.64	per hcf	$ 22.03	2%
24	Laundries	16,129	3,424	1,883	21,436	2,361	$ 5.07	per hcf	$ 4.97	-2%
26	Public Buildings	14,270	2,625	1,212	18,107	5,868	$ 5.07	per hcf	$ 4.97	-2%
28	Medical Care	10,250	3,626	1,088	14,965	4,962	$ 5.07	per hcf	$ 4.97	-2%
40	Brewery/Winery	7	14	5	26	80	$ 1.40	per hcf	$ 1.42	1%
43	Schools	15,462	2,844	1,641	19,947	3,894	$ 5.07	per hcf	$ 4.97	-2%
44	Service Stations	1,872	477	556	2,905	403	$ 5.07	per hcf	$ 4.97	-2%
42	Bottling Works									
	Flow	18,761			18,761	2,062,980	$ 9,399.02	Per Million Glns	$ 9,929.06	6%
	BOD		1,168		1,168	757	$ 1.60	Per Lbs	$ 1.62	1%
	SS			956	956	826	$ 1.24	Per Lbs	$ 1.26	2%
	Groundwater Discharge - Cold & Geothermal Wells	-	-	-	-					
	Estimated Spa [2]	57,022	4,035	3,027	64,083	14,254	$ 3.93	per hcf of Water	$ 3.99	2%
	Estimated Residential & Other Use [5]	11,762	832	624	13,219	1,729	$ 8.15	Per hcf Measured	$ 8.28	2%
	Totals	**1,478,252**	**491,247**	**295,806**	**2,265,305**					

[1] Allocation of Flows, Strengths and Growth based on Tables 1, 2 and 3

[2] This rate is calculated based on average water use for Spas in User Categories #11 & 12. It is to be combined with rate calculated from water use effluent. This is a method to recover costs related to Spa Groundwater discharges. Different rates would apply for measured groundwater discharge. If calculated on Measured Groundwater Discharge Flow, then rate would be

Est Measured Groundwater flow from Spa uses	8,383
Est Rate per hcf of measured Groundwater flow	$ 9.22

[3] These estimated flows are used to "calculate" a rate based on water use or measured flows. For Flat Rates, the flow is average winter use and is for information only. For Bottling Works, the amount is an adjusted from FY 11-12 actual flows. . For all others, it is based on actual FY 11-12 annual Water use which is used to determine the wastewater charge.

[4] Rates between SFR, MFR and Mobile Homes generally reflect use ratios as calculated in 2010 Wastewater Rate Study.

[5] This rate is calculated to apply to measured groundwater discharge flow only.

Summary of Wastewater Costs Allocation To Users - FY 15-16

Table 6

Proposed Change in rates with updated projections of users, flows and costs

Wastewater Costs	FY 15-16 Projected	Percentage Allocation			Allocation Amounts		
		FLOW	BOD	SS	FLOW	BOD	SS
Operating Costs							
Collection	486,779	100%	0%	0%	486,779	-	-
Treatment	1,548,315	60%	26%	14%	928,989	402,562	216,764
Depreciation	642,000	80%	13%	7%	513,600	83,460	44,940
Other - Special Studies	-	60%	26%	14%	-	-	-
Other - Equipment	-	80%	13%	7%	-	-	-
Operating Costs	**2,677,094**	**72%**	**18%**	**10%**	**1,929,368**	**486,022**	**261,704**
Capital Improvements							
Water conservation program	-	63%	23%	14%	-	-	-
Collection Capital Projects	4,905,000	100%	0%	0%	4,905,000	-	-
Treatment Capital Projects	-	63%	23%	14%	-	-	-
WasteWater Treatment Plant							
Less Amounts Financed		100%	0%	0%	-	-	-
Net Capital Improvements	**4,905,000**	**100%**	**0%**	**0%**	**4,905,000**	**-**	**-**
Debt Payments	**696,303**	**53%**	**27%**	**20%**	**369,040**	**188,002**	**139,261**
Net Captial Imp Costs from Connection Fee	**(4,905,000)**	**100%**	**0%**	**0%**	**(4,905,000)**	**-**	**-**
Depreciation	**(642,000)**	**80%**	**13%**	**7%**	**(513,600)**	**(83,460)**	**(44,940)**
Operating Grants/Proceeds		**53%**	**27%**	**20%**	**-**	**-**	**-**
Misc Rev & Interest	**(73,223)**	**68%**	**20%**	**12%**	**(49,589)**	**(14,629)**	**(9,005)**
Portion of Connection Fee for Debt	**(556,467)**	**68%**	**20%**	**12%**	**(376,857)**	**(111,172)**	**(68,438)**
Adjustment for Revised Projections	**208,904**	**67%**	**20%**	**13%**	**139,966**	**41,781**	**27,158**
Total Costs to Be Allocated to Users	**2,310,611**	**65%**	**22%**	**13%**	**1,498,328**	**506,544**	**305,738**

Summary of Wastewater Costs Allocation To Users - FY 15-16

Table 6

Proposed Change in rates with updated projections of users, flows and costs

	User Category	FY 15-16 # Accts	# Units	Total Est Flows [1] (avg gpd)	%	Est BOD (lb/d)	%	Est SS (lb/d)	%
	Estimated Annual Growth Rate								
1	SFR Residential [2]	987	987	141,722	31.8%	206.8	23.7%	206.8	29.5%
3/4	Multi Family-Bi-Monthly [2]	106	535	65,492	14.7%	95.6	11.0%	95.6	13.7%
	Total Single & Multi-Family Residential	1,093	1,522	207,214	46.5%	302.4	34.7%	302.4	43.2%
5	Mobile Homes	4	555	52,827	11.9%	77.1	8.8%	77.1	11.0%
10	Transient General	29	406	69,630	15.6%	180.0	20.6%	116.1	16.6%
11	Spa-Geo Water-No Mud	-	-	-	0.0%	-	0.0%	-	0.0%
12	Spa-Geo Water & Mud	11	170	27,437	6.2%	70.9	8.1%	45.8	6.5%
14	Campgrounds	1	62	6,120	1.4%	15.8	1.8%	10.2	1.5%
16	Bed & Breakfast	19	56	6,139	1.4%	15.9	1.8%	10.2	1.5%
20	Comm.General & All Others	79	125	12,943	2.9%	16.2	1.9%	16.2	2.3%
22	Restaurants & Bakery	28	66	19,188	4.3%	160.0	18.3%	96.0	13.7%
24	Laundries	1	1	4,859	1.1%	6.1	0.7%	4.5	0.6%
26	Public Buildings	12	12	4,299	1.0%	4.7	0.5%	2.9	0.4%
28	Medical Care	9	60	3,088	0.7%	6.4	0.7%	2.6	0.4%
40	Brewery/Winery	1	1	2	0.0%	0.0	0.0%	0.0	0.0%
43	Schools	5	5	4,658	1.0%	5.1	0.6%	3.9	0.6%
44	Service Stations	2	2	564	0.1%	0.8	0.1%	1.3	0.2%
42	Bottling Works	1	1	5,652	1.3%	2.1	0.2%	2.3	0.3%
	Groundwater Discharge - Cold & Geothermal Wells								
	Estimated Spa			17,179	3.9%	7.2	0.8%	7.2	1.0%
	Estimated Residential & Other Use			3,543	0.8%	1.5	0.2%	1.5	0.2%
	Totals	1,295	3,044	445,342	100.0%	872.2	100.0%	700.1	100.0%

Summary of Wastewater Costs Allocation To Users - FY 15-16

Table 6

Proposed Change in rates with updated projections of users, flows and costs

	User Category	Cost Allocation FLOW	BOD	SS	Totals	Estimated Measured Base Flows in hcf [3]	FY 14-15 Rates Rates	How Charged	Proposed Rates for FY 15-16 Applied after January 1st	Percent Change
1	SFR Residential	476,816	120,125	90,328	687,269	69,156	$ 62.72	Flat Per Month	63.97	2%
3/4	Multi Family	220,344	55,512	41,742	317,598	31,958	$ 52.77	Flat Per Month	53.83	2%
	Total Single & Multi-Family Residential	697,160	175,637	132,070	1,004,867	101,114				
5	Mobile Homes [4]	177,734	44,777	33,670	256,180	25,778	$ 34.08	Flat Per Month	$ 34.76	2%
10	Transient General	234,266	104,548	50,719	389,534	35,492	$ 12.83	per hcf	$ 13.09	2%
12	Spa-Geo Water & Mud	92,310	41,196	19,985	153,492	14,254	$ 12.83	per hcf	$ 13.09	2%
14	Campgrounds	20,590	9,189	4,458	34,237	3,268	$ 12.83	per hcf	$ 13.09	2%
16	Bed & Breakfast	20,654	9,218	4,472	34,344	3,779	$ 12.83	per hcf	$ 13.09	2%
20	Comm.General & All Others	43,546	9,403	7,071	60,020	10,235	$ 4.97	per hcf	$ 5.07	2%
22	Restaurants & Bakery	64,557	92,937	41,930	199,424	9,620	$ 22.03	per hcf	$ 22.47	2%
24	Laundries	16,348	3,530	1,947	21,825	2,361	$ 4.97	per hcf	$ 5.07	2%
26	Public Buildings	14,464	2,707	1,253	18,423	5,868	$ 4.97	per hcf	$ 5.07	2%
28	Medical Care	10,389	3,739	1,125	15,253	4,962	$ 4.97	per hcf	$ 5.07	2%
40	Brewery/Winery	7	15	5	27	80	$ 1.42	per hcf	$ 1.45	2%
43	Schools	15,672	2,933	1,696	20,301	3,894	$ 4.97	per hcf	$ 5.07	2%
44	Service Stations	1,898	492	575	2,964	403	$ 4.97	per hcf	$ 5.07	2%
42	Bottling Works									
	Flow	19,016			19,016	2,062,980	$ 9,929.06	Per Million Gln	$ 10,127.64	2%
	BOD		1,205		1,205	757	$ 1.62	Per Lbs	$ 1.65	2%
	SS			988	988	826	$ 1.26	Per Lbs	$ 1.29	2%
	Groundwater Discharge - Cold & Geothermal Wells	-	-	-	-					
	Estimated Spa [2]	57,796	4,160	3,128	65,085	14,254	$ 3.99	per hcf of Water	$ 4.07	2%
	Estimated Residential & Other Use [5]	11,922	858	645	13,425	1,729	$ 8.28	Per hcf Measured	$ 8.45	2%
	Totals	**1,498,328**	**506,544**	**305,738**	**2,310,611**					

[1] Allocation of Flows, Strengths and Growth based on Tables 1, 2 and 3

[2] This rate is calculated based on average water use for Spas in User Categories #11 & 12. It is to be combined with rate calculated from water use effluent. This is a method to recover costs related to Spa Groundwater discharges. Different rates would apply for measured groundwater discharge. If calculated on Measured Groundwater Discharge Flow, then rate would be

Est Measured Groundwater flow from Spa uses	8,383
Est Rate per hcf of measured Groundwater flow	$ 9.37

[3] These estimated flows are used to "calculate" a rate based on water use or measured flows. For Flat Rates, the flow is average winter use and is for information only. For Bottling Works, the amount is an adjusted from FY 11-12 actual flows. . For all others, it is based on actual FY 11-12 annual Water use which is used to determine the wastewater charge.

[4] Rates between SFR, MFR and Mobile Homes generally reflect use ratios as calculated in 2010 Wastewater Rate Study.

[5] This rate is calculated to apply to measured groundwater discharge flow only.

Summary of Wastewater Costs Allocation To Users - FY 16-17

Table 7

Proposed Change in rates with updated projections of users, flows and costs

Wastewater Costs	FY 16-17 Projected	Percentage Allocation			Allocation Amounts		
		FLOW	BOD	SS	FLOW	BOD	SS
Operating Costs							
Collection	497,364	100%	0%	0%	497,364	-	-
Treatment	1,591,595	60%	26%	14%	954,957	413,815	222,823
Depreciation	642,000	80%	13%	7%	513,600	83,460	44,940
Other - Special Studies		60%	26%	14%	-	-	-
Other - Equipment	-	80%	13%	7%	-	-	-
Operating Costs	**2,730,959**	**72%**	**18%**	**10%**	**1,965,921**	**497,275**	**267,763**
Capital Improvements							
Water conservation program	-	63%	23%	14%	-	-	-
Collection Capital Projects	-	100%	0%	0%	-	-	-
Treatment Capital Projects	-	63%	23%	14%	-	-	-
WasteWater Treatment Plant							
Less Amounts Financed		100%	0%	0%	-	-	-
Net Capital Improvements	**-**	**0%**	**0%**	**0%**	**-**	**-**	**-**
Debt Payments	**693,540**	**53%**	**27%**	**20%**	**367,576**	**187,256**	**138,708**
Net Captial Imp Costs from Connection Fee	**-**	**0%**	**0%**	**0%**	**-**	**-**	**-**
Depreciation	**(642,000)**	**80%**	**13%**	**7%**	**(513,600)**	**(83,460)**	**(44,940)**
Operating Grants/Proceeds		**53%**	**27%**	**20%**	**-**	**-**	**-**
Misc Rev & Interest	**(74,087)**	**68%**	**20%**	**12%**	**(50,174)**	**(14,801)**	**(9,112)**
Portion of Connection Fee for Debt	**(556,467)**	**68%**	**20%**	**12%**	**(376,857)**	**(111,172)**	**(68,438)**
Adjustment for Revised Projections	**204,878**	**67%**	**20%**	**13%**	**137,268**	**40,976**	**26,634**
Total Costs to Be Allocated to Users	**2,356,823**	**65%**	**22%**	**13%**	**1,530,135**	**516,073**	**310,616**

Summary of Wastewater Costs Allocation To Users - FY 16-17

Table 7

Proposed Change in rates with updated projections of users, flows and costs

	User Category	FY 16-17 # Accts	# Units	Total Est Flows [1] (avg gpd)	%	Est BOD (lb/d)	%	Est SS (lb/d)	%
	Estimated Annual Growth Rate								
1	SFR Residential [2]	987	987	141,722	30.7%	206.8	22.6%	206.8	28.5%
3/4	Multi Family-Bi-Monthly [2]	106	535	65,492	14.2%	95.6	10.5%	95.6	13.2%
	Total Single & Multi-Family Residential	1,093	1,522	207,214	44.9%	302.4	33.1%	302.4	41.6%
5	Mobile Homes	4	555	52,827	11.5%	77.1	8.4%	77.1	10.6%
10	Transient General	31	492	85,645	18.6%	221.4	24.2%	142.9	19.7%
11	Spa-Geo Water-No Mud	-	-	-	0.0%	-	0.0%	-	0.0%
12	Spa-Geo Water & Mud	11	170	27,437	5.9%	70.9	7.8%	45.8	6.3%
14	Campgrounds	1	62	6,120	1.3%	15.8	1.7%	10.2	1.4%
16	Bed & Breakfast	19	56	6,139	1.3%	15.9	1.7%	10.2	1.4%
20	Comm.General & All Others	79	125	12,943	2.8%	16.2	1.8%	16.2	2.2%
22	Restaurants & Bakery	28	66	19,188	4.2%	160.0	17.5%	96.0	13.2%
24	Laundries	1	1	4,859	1.1%	6.1	0.7%	4.5	0.6%
26	Public Buildings	12	12	4,299	0.9%	4.7	0.5%	2.9	0.4%
28	Medical Care	9	60	3,088	0.7%	6.4	0.7%	2.6	0.4%
40	Brewery/Winery	1	1	2	0.0%	0.0	0.0%	0.0	0.0%
43	Schools	5	5	4,658	1.0%	5.1	0.6%	3.9	0.5%
44	Service Stations	2	2	564	0.1%	0.8	0.1%	1.3	0.2%
42	Bottling Works	1	1	5,652	1.2%	2.1	0.2%	2.3	0.3%
	Groundwater Discharge - Cold & Geothermal Wells								
	Estimated Spa			17,179	3.7%	7.2	0.8%	7.2	1.0%
	Estimated Residential & Other Use			3,543	0.8%	1.5	0.2%	1.5	0.2%
	Inflow & Infiltration - Unaccounted	-	-	-	0.0%	-	0.0%	-	0.0%
	Totals	1,297	3,130	461,357	100.0%	913.6	100.0%	726.8	100.0%

Summary of Wastewater Costs Allocation To Users - FY 16-17

Table 7

Proposed Change in rates with updated projections of users, flows and costs

	User Category	Cost Allocation FLOW	BOD	SS	Totals	Estimated Measured Base Flows in hcf [3]	FY 15-16 Rates Rates	How Charged	Proposed Rates for FY 16-17 Applied after January 1st	Percent Change
1	SFR Residential	470,035	116,839	88,396	675,270	69,156	$ 63.97	Flat Per Month	65.25	2%
3/4	Multi Family	217,211	53,993	40,849	312,053	31,958	$ 53.83	Flat Per Month	54.90	2%
	Total Single & Multi-Family Residential	687,245	170,832	129,246	987,323	101,114				
5	Mobile Homes [4]	175,206	43,552	32,950	251,707	25,778	$ 34.76	Flat Per Month	$ 35.46	2%
10	Transient General	284,050	125,076	61,051	470,176	43,333	$ 13.09	per hcf	$ 13.35	2%
12	Spa-Geo Water & Mud	90,997	40,069	19,558	150,625	14,254	$ 13.09	per hcf	$ 13.35	2%
14	Campgrounds	20,298	8,938	4,363	33,598	3,268	$ 13.09	per hcf	$ 13.35	2%
16	Bed & Breakfast	20,361	8,965	4,376	33,702	3,779	$ 13.09	per hcf	$ 13.35	2%
20	Comm.General & All Others	42,927	9,146	6,920	58,993	10,562	$ 5.07	per hcf	$ 5.17	2%
22	Restaurants & Bakery	63,639	90,394	41,034	195,067	9,620	$ 22.47	per hcf	$ 22.92	2%
24	Laundries	16,115	3,434	1,905	21,454	2,361	$ 5.07	per hcf	$ 5.17	2%
26	Public Buildings	14,258	2,633	1,226	18,117	5,868	$ 5.07	per hcf	$ 5.17	2%
28	Medical Care	10,242	3,637	1,101	14,979	4,962	$ 5.07	per hcf	$ 5.17	2%
40	Brewery/Winery	7	14	5	26	80	$ 1.45	per hcf	$ 1.48	2%
43	Schools	15,449	2,853	1,660	19,962	3,894	$ 5.07	per hcf	$ 5.17	2%
44	Service Stations	1,871	478	563	2,912	403	$ 5.07	per hcf	$ 5.17	2%
42	Bottling Works									
	Flow	18,745			18,745	2,062,980	$ 10,127.64	Per Million Glns	$ 10,330.19	2%
	BOD		1,172		1,172	757	$ 1.65	Per Lbs	$ 1.69	2%
	SS			967	967	826	$ 1.29	Per Lbs	$ 1.31	2%
	Groundwater Discharge - Cold & Geothermal Wells	-	-	-	-					
	Estimated Spa [2]	56,974	4,046	3,061	64,082	14,254	$ 4.07	per hcf of Water	$ 4.15	2%
	Estimated Residential & Other Use [5]	11,752	835	631	13,218	1,729	$ 8.45	Per hcf Measured	$ 8.61	2%
	Totals	**1,530,135**	**516,073**	**310,616**	**2,356,823**					

[1] Allocation of Flows, Strengths and Growth based on Tables 1, 2 and 3

[2] This rate is calculated based on average water use for Spas in User Categories #11 & 12. It is to be combined with rate calculated from water use effluent. This is a method to recover costs related to Spa Groundwater discharges. Different rates would apply for measured groundwater discharge. If calculated on Measured Groundwater Discharge Flow, then rate would be

Est Measured Groundwater flow from Spa uses	8,383
Est Rate per hcf of measured Groundwater flow	$ 9.22

[3] These estimated flows are used to "calculate" a rate based on water use or measured flows. For Flat Rates, the flow is average winter use and is for information only. For Bottling Works, the amount is an adjusted from FY 11-12 actual flows. . For all others, it is based on actual FY 11-12 annual Water use which is used to determine the wastewater charge.

[4] Rates between SFR, MFR and Mobile Homes generally reflect use ratios as calculated in 2010 Wastewater Rate Study.

[5] This rate is calculated to apply to measured groundwater discharge flow only.

Calculation of Wastewater Capacity Allocation Charge

Table 8

The 2010 Wastewater Rate Study assumed additional debt service and the operating expenses to generate the adotped rates. The operating expenses have changed and the projected additional debt for capital improvements was not needed. Below is a revised projection of the costs and proposed change in the Capacity Allocation charge

Under the City of Calistoga Municipal Code, properties that have chosen to maintain a wastewater capacity allocation for future development are required to pay a monthly fee to maintain their capacity rights and connection to the wastewater system.

In the 1999 Revenue Program, this charge was set at the minimum monthly charge for wastewater to a single family dwelling. The 2004 Revenue Program created a Wastewater Capacity Allocation charge and calculated this charge on the annual debt service payment and the estimated minimum maintenance costs of the wastewater system treatment and collection facilities. This amount is then divided equally by all users of the wastewater system. The methodology better represents the annual cost to add and maintain the capacity allocation. This monthly charge is in addition any other one time connection or development fees that have been paid in the past.

	Adjustment For Minimum Maintenance [2]	Revised FY 12-13	Budget FY 13-14	Projected FY 14-15	Projected FY 15-16	Projected FY 16-17
Estimated Users		2,971	2,971	3,044	3,044	3,130
Estimated Annual Debt Service Payments		$ 694,076	$ 695,187	$ 695,983	$ 696,303	$ 693,540
Estimated Annual Collection Costs [1]	66%	273,694	307,765	314,444	321,274	328,260
Estimated Annual Treatment Costs [1]	33%	402,445	483,638	497,086	510,944	525,226
Total Estimated Capacity Maintenance Costs		$ 1,370,215	$ 1,486,589	$ 1,507,512	$ 1,528,521	$ 1,547,027
Adopted Capacity Allocation Charge		**$ 44.98**	**$ 44.44**	**$ 44.06**		
Revised Wastewater Capacity Allocation Charge per unit per month			**$ 41.70**	**$ 41.27**	**$ 41.84**	**$ 41.19**

Revised Estimated Annual Revenue From Undeveloped Properties

Current applicable units		73	73	73	73	73
Estimated Annual Revenue		$ 39,515	$ 36,527	$ 36,149	$ 36,653	$ 36,086

[1] Operating costs less depreciation and special studies

[2] Estimate by Public Works of percentage of minimum operating costs to be recovered to maintain capacity.

Table 9

Wastewater Operating Costs

Cost Assumptions			
Sal & Ben	2.0%	2.0%	2.0%
Serv & supp	3.0%	3.0%	3.0%
Energy	5.0%	5.0%	5.0%

Department: Public Works
Program: Wastewater Collection
Account Code: 03-4141

		Actual FY 11-12	Revised FY 12-13	Budget FY 13-14	Projected FY 14-15	Projected FY 15-16	Projected FY 16-17
PERSONNEL SERVICES							
4301	FULL-TIME SALARIES	184,000	197,434	228,414	232,982	237,642	242,395
4302	OVERTIME	10,579	15,000	12,243	12,488	12,738	12,992
4303	BENEFITS	104,189	123,863	141,219	144,043	146,924	149,863
4308	Part time	2,459	2,700	2,700	2,754	2,809	2,865
4309	SPECIAL PAY	8,494	11,000	14,585	14,877	15,174	15,478
	SUBTOTAL	**309,721**	**349,997**	**399,161**	**407,144**	**415,287**	**423,593**
		-19.2%					
SERVICES & SUPPLIES							
4401	MATERIALS & SUPPLIES:	1,463	6,700	6,000	6,180	6,365	6,556
4402	CONTRACT SERVICES:	18,349	18,700	19,600	20,188	20,794	21,417
4403	ELECTRICITY	5,687	5,000	6,100	6,405	6,725	7,062
4404	REPAIRS & MAINTENANCE	3,368	7,000	7,000	7,210	7,426	7,649
4405	TRAINING & SEMINARS: STAFF	422	1,000	1,000	1,030	1,061	1,093
4408	UNIFORM ALLOWANCE	1,104	1,100	1,100	1,133	1,167	1,202
4415	POSTAGE & REPRODUCTION	-	50	50	52	53	55
4417	Fuel & Oil	2,372	1,500	1,800	1,854	1,910	1,967
4424	HEALTH & SAFETY	1,648	2,000	2,000	2,060	2,122	2,185
4430	DUES & SUBSCRIPTIONS	-	100	100	103	106	109
4431	FEES	2,692	1,600	2,850	2,936	3,024	3,114
4434	Vehicle R&M	1,631	-	-	-	-	-
4650	TRAINING & SEMINARS: MGMT	-	1,000	1,000	1,030	1,061	1,093
4510	EQUIPMENT FUND RENTAL	15,872	18,941	18,549	19,105	19,679	20,269
	SUBTOTAL	**54,608**	**64,691**	**67,149**	**69,285**	**71,492**	**73,771**
OTHER							
4505	DEPRECIATION	129,547	150,000	150,000	150,000	150,000	150,000
4821	Miscellaneous Office Equipment			2,500			
4823	Computer Equipment			990			
	SUBTOTAL	**129,547**	**150,000**	**153,490**	**150,000**	**150,000**	**150,000**
TOTAL PROGRAM BUDGET		**493,876**	**564,688**	**619,800**	**626,430**	**636,779**	**647,364**

Department: Public Works
Program: Wastewater Treatment
Account Code: 03-4142

PERSONNEL SERVICES							
4301	FULL-TIME SALARIES	313,538	288,683	325,983	332,503	339,153	345,936
4302	OVERTIME	45,287	35,000	39,218	40,002	40,802	41,618
4303	BENEFITS	173,039	165,419	211,352	215,579	219,891	224,288
4308	Part time	2,459	2,700	3,868	3,945	4,024	4,105
4309	SPECIAL PAY	10,286	11,000	25,159	25,662	26,175	26,699
	SUBTOTAL	**544,609**	**502,802**	**605,580**	**617,692**	**630,045**	**642,646**
SERVICES & SUPPLIES							
4401	MATERIALS & SUPPLIES:	222,008	128,000	200,000	206,000	212,180	218,545
4402	CONTRACT SERVICES:	137,174	133,200	182,310	187,779	193,413	199,215
4403	ELECTRICITY	135,352	135,000	142,000	149,100	156,555	164,383
4404	REPAIRS & MAINTENANCE	47,430	60,000	75,400	77,662	79,992	82,392
4405	TRAINING & SEMINARS: STAFF	1,409	4,000	4,000	4,120	4,244	4,371
4408	UNIFORM ALLOWANCE	2,054	3,000	3,000	3,090	3,183	3,278

Table 9

Wastewater Operating Costs

		Actual FY 11-12	Revised FY 12-13	Budget FY 13-14	Projected FY 14-15	Projected FY 15-16	Projected FY 16-17
4415	POSTAGE & REPRODUCTION	3,884	3,800	3,800	3,914	4,031	4,152
4417	Fuel & Oil	16,416	11,000	12,000	12,360	12,731	13,113
4424	HEALTH & SAFETY	1,212	1,200	1,300	1,339	1,379	1,421
4429	PHONE	-	6,100	6,100	6,283	6,471	6,666
4430	DUES & SUBSCRIPTIONS	612	650	650	670	690	710
4431	FEES	22,615	25,000	25,500	26,265	27,053	27,865
4434	Vehicle R&M	2,405	-	-	-	-	-
4439	CENTRAL SERVICES OVERHEAD	82,500	82,500	82,500	84,975	87,524	90,150
4440	LAB TESTING	58,425	60,000	60,000	61,800	63,654	65,564
4503	WATER.SEWER EXP	4,261	2,600	1,000	1,030	1,061	1,093
4650	TRAINING & SEMINARS: MGMT	-	1,000	1,000	1,030	1,061	1,093
4510	EQUIPMENT FUND RENTAL	19,813	59,679	59,429	61,212	63,048	64,940
	SUBTOTAL	**757,570**	**716,729**	**859,989**	**888,629**	**918,270**	**948,949**
OTHER							
4433	SPECIAL EQUIPMENT						
4505	DEPRECIATION	491,956	492,000	492,000	492,000	492,000	492,000
4821	Miscellaneous Field Equipment	2,855		130,000	82,335		
4821	Miscellaneous Office Equipment			28,500			
4823	Computer Equipment			40,000			
	SUBTOTAL	**494,811**	**492,000**	**690,500**	**574,335**	**492,000**	**492,000**
TOTAL PROGRAM BUDGET		**1,796,990**	**1,711,531**	**2,156,069**	**2,080,655**	**2,040,315**	**2,083,595**

Department: **Public Works**
Program: **Debt Service**
Account Code: **03-4430**

SERVICES & SUPPLIES							
4402	CONTRACT SERVICES	1,422	1,410	1,420	1,420	1,420	1,420
4501	Principal	378,385	379,194	392,241	405,569	418,982	432,885
4502	Interest	325,087	313,472	301,526	288,994	275,901	259,235
	SUBTOTAL	**704,894**	**694,076**	**695,187**	**695,983**	**696,303**	**693,540**
TOTAL PROGRAM BUDGET		**704,894**	**694,076**	**695,187**	**695,983**	**696,303**	**693,540**
TOTAL OPERATIONS		**2,995,760**	**2,970,295**	**3,471,056**	**3,403,068**	**3,373,397**	**3,424,500**

Table 10

Wastewater System Capital Improvements

Fd	Proj	Description	Actual Prior Years	Actual FY 11-12	Revised FY 12-13	Budget FY 13-14	Projected FY 14-15	Projected FY 15-16	Projected FY 16-17	Project Totals	Allocation % Existing	Allocation % New	Est Proj Cost Alloc Existing	Est Proj Cost Alloc New
Wastewater Collection														
13	5326	GIS System	33,840	-	-	25,000	-	-	-	58,840	67%	33%	39,422.80	19,417
13	5333	Palisades Sewer Lift Station Coating Repair	17,148	-	-	100,000	-	-	-	117,148	67%	33%	78,489	38,659
13	5437	Sewer System Assessment & Master Plan	423	-	-	-	-	-	-	423	0%	100%	-	423
13	5452	Sewer Lateral Replacement	10,490	1,500	1,500	5,000	5,000	5,000	-	28,490	67%	33%	19,088	9,402
13	5483	Inflow & Infiltration Improvements	362,273	-	-	-	-	-	-	362,273	67%	33%	242,723	119,550
13	5516	Harley Street Rehabilitation	-	-	-	-	63,250	-	-	63,250	67%	33%	42,378	20,873
13	5514	Pine St Lift Station concrete Coating	-	-	-	100,000	-	-	-	100,000	67%	33%	67,000	33,000
	New	Trunk Line Improvements						4,900,000		4,900,000	67%	33%	3,283,000	1,617,000
		Subtotal Wastewater Collection	**424,174**	**1,500**	**1,500**	**230,000**	**68,250**	**4,905,000**	**0**	**5,630,424**	67%	33%	**3,772,101**	**1,858,323**
Wastewater Treatment														
13	5494	Additional WWTP Alarms			-	30,000	-	-	-	30,000	62%	38%	18,600	11,400
13	5495	Aerator-Mixer WWTP Effluent Storage Pond		15,630	35,000	-	-	-	-	50,630	67%	33%	33,922	16,708
13	5497	Filter Area Spiral Stairway			-	40,000	-	-	-	40,000	67%	33%	26,800	13,200
13	5512	Effluent Disposal Study			-	75,000	-	-	-	75,000	67%	33%	50,250	24,750
13	5518	New Effluent Storage Pond			-	325,000	600,000	-	-	925,000	67%	33%	619,750	305,250
13	5519	HS Reclaimed Water System Upgrade			-	50,000	-	-	-	50,000	67%	33%	33,500	16,500
13	5513	Check Valve replacement			20,000	-	-	-	-	20,000	67%	33%	13,400	6,600
		Subtotal WastewaterTreatment	**0**	**15,630**	**55,000**	**520,000**	**600,000**	**0**	**0**	**1,190,630**	67%	33%	**796,222**	**394,408**
Total Wastewater Capital Improvements			**424,174**	**17,130**	**56,500**	**750,000**	**668,250**	**4,905,000**	**0**	**6,821,054**	**67%**	**33%**	**4,568,323**	**2,252,731**

Funding Sources								
Connection Fees	424,174	17,130	56,500	750,000	668,250	5,000	-	1,921,054
Developer Contributions						4,900,000		4,900,000
Total Funding Sources	**424,174**	**17,130**	**56,500**	**750,000**	**668,250**	**4,905,000**	**-**	**6,821,054**

Wastewater Debt Issues - Current

Table 11

	Actual FY 11-12	Revised FY 12-13	Budget FY 13-14	Projected FY 14-15	Projected FY 15-16	Projected FY 16-17
Existing Debt						
State Revolving Fund Loan (Wastewater Treatment Plant Improvements)						
Original Amount - $4,883,092						
Added Change Order - $567,272						
Accrued Interest - $159,635						
Total Loan - $5,609,999						
Interest Rate - 2.6%						
Matures - October 30, 2023						
Outstanding Balance at 6/30	4,196,075	3,928,881	3,654,740	3,373,471	3,084,889	2,788,804
Annual Payments - Principal	260,423	267,194	274,141	281,269	288,582	296,085
Annual Payments - Interest	103,167	96,396	89,449	82,322	75,009	64,506
Total Annual Payments	**363,590**	**363,590**	**363,590**	**363,591**	**363,591**	**360,591**
CSCDA Revenue Bonds 2001B (Wastewater Treatment Plant Improvements)						
Original Amount - $3,500,000						
Interest Rate - TIC 5.188%						
Matures - October 31, 2031						
Outstanding Balance at 6/30	3,030,000	2,945,000	2,855,000	2,760,000	2,660,000	2,555,000
Annual Payments - Principal	85,000	85,000	90,000	95,000	100,000	105,000
Annual Payments - Interest	141,234	137,665	133,813	129,603	125,068	120,198
Total Annual Payments	**226,234**	**222,665**	**223,813**	**224,603**	**225,068**	**225,198**
2005 USDA Loan (Wastewater Treatement Plant Improvements)						
Original Amount - $2,028,500						
Interest Rate - 4.25%						
Matures - July 1, 2045						
Outstanding Balance at 6/30	1,914,000	1,887,000	1,858,900	1,829,600	1,799,200	1,767,400
Annual Payments - Principal	25,700	27,000	28,100	29,300	30,400	31,800
Annual Payments - Interest	80,504	79,411	78,264	77,070	75,824	74,532
Total Annual Payments	**106,204**	**106,411**	**106,364**	**106,370**	**106,224**	**106,332**
Equipment Lease - SunTrust Master Lease Schedule #2 - Vehicles						
Original Amount - $50,000						
Matures - May 31, 2010						
Outstanding Balance at 6/30	-	-	-	-	-	-
Annual Payments - Principal	7,262					
Annual Payments - Interest	182					
Total Annual Payments	**7,444**	**-**	**-**	**-**	**-**	**-**
Total Debt - Existing and New						
Outstanding Balance at 6/30	**9,140,075**	**8,760,881**	**8,368,640**	**7,963,071**	**7,544,089**	**7,111,204**
Annual Principal Payments	**378,385**	**379,194**	**392,241**	**405,569**	**418,982**	**432,885**
Annual Interest Payments	**325,087**	**313,472**	**301,526**	**288,994**	**275,901**	**259,235**
Total Annual Debt Payments	**703,472**	**692,666**	**693,767**	**694,563**	**694,883**	**692,120**
Total Debt Administration Services	**1,422**	**1,410**	**1,420**	**1,420**	**1,420**	**1,420**
USDA Reserve Requirement	**73,035**	**83,676**	**94,312**	**104,949**	**106,224**	**106,332**

Wastewater Debt Issues - Current

Table 11

	Actual FY 11-12	Revised FY 12-13	Budget FY 13-14	Projected FY 14-15	Projected FY 15-16	Projected FY 16-17
Portion of Debt Service Allocated Expanded Capacity and Development Buy-in (to be funded from Connection Fees)						
Debt Payments Related to Connection Fees						
State Revolving Fund Loan (Wastewater	363,590	363,590	363,590	363,591	363,591	360,591
CSCDA Revenue Bonds 2001B	226,234	222,665	223,813	224,603	225,068	225,198
2005 USDA Loan (Wastewater	106,204	106,411	106,364	106,370	106,224	106,332
Annual Debt related to WWTP	696,028	692,666	693,767	694,563	694,883	692,120
Percent of Project allocated to New	38%	38%	38%	38%	38%	38%
Annual Portion related to Connection Fe	264,491	263,213	263,631	263,934	264,055	263,006
Portion of annual Debt related to New	264,491	263,213	263,631	263,934	264,055	263,006
Expansion	38%	38%	38%	38%	38%	38%
Remaining Debt	438,981	429,453	430,135	430,629	430,827	429,115
Percent of Buy-in connection Fee related to	68%	68%	68%	68%	68%	68%
	298,507	292,028	292,492	292,828	292,962	291,798
Portion of total Debt payments related to	**562,998**	**555,241**	**556,123**	**556,761**	**557,018**	**554,804**
Connection Fees	**80%**	**80%**	**80%**	**80%**	**80%**	**80%**

Connection Fee & Developer Contribution revenue Projections from development projections

Table 12

Updated Development projections with no proposed change in Connection Fee calculation from 2010 Wastewater Rate Study

	Revised FY 12-13	Budget FY 13-14	Projected FY 14-15	Projected FY 15-16	Projected FY 16-17
Connection Fee per Acre Foot of Wastewater Capacity - Based on 2010 Wastewater Rate Study as annually adjusted by ENR index	97,942	100,508	102,518	104,569	106,660
Annual Increase in fee based on actual and projected annual percent change of ENR construction costs		2.6%	2.0%	2.0%	2.0%
Development Projections By Project and Acre Feet of Use					
Indian Springs Resort					
Enchanted Resorts					
Silver Rose	17.0		22.3		
Arden Winery		1.1			
Calistoga Apts		0.5			
Miscellaneous - residential/commercial		1.0	1.0	1.0	1.0
Estimated Development Projections in Acre Feet	**17.0**	**2.7**	**23.3**	**1.0**	**1.0**
Projected Connection Fee Revenues					
Indian Springs Resort	-	-	-	-	-
Enchanted Resorts	-	-	-	-	-
Silver Rose	1,694,745	-	2,286,597	-	-
Arden Winery	-	113,574	-	-	-
Calistoga Apts	-	52,666	-	-	-
Miscellaneous - residential/commercial	-	100,508	102,518	104,569	106,660
Estimated Connection Fee Revenues	**1,694,745**	**266,748**	**2,389,115**	**104,569**	**106,660**
Developer Contribution for Captial Improvements - Trunk Line replacement					
Enchanted Resorts				4,900,000	
Connection Fees Used for					
% of Connection Fee related to Debt [1]	80%	80%	80%	80%	80%
Annual Portion available for Debt	1,355,796	213,399	1,911,292	83,655	85,328
Balance for Equity and Replacement	338,949	53,350	477,823	20,914	21,332

[1] Allocation of Connection fee revenues to current and future debt service is based on portion of project funded by debt service and portion of project allocated between Existing and New/Expanded Development from the 2010 Wastewater Rate Study revised with 2013 updates to CIP. A portion of annual Debt Service payments that should be funded from Connection Fees. The balance of annual connection fee reveneues will be reserved for future years debt payments or periodic one-time debt reduction

Total Annual Debt Service updated projection	694,076	695,187	695,983	696,303	693,540
Protion to be paid from User rates or other revenues	138,815	139,037	139,197	139,261	138,708
Portion allocated from Connection Fee Revenue	**555,260**	**556,149**	**556,786**	**557,042**	**554,832**
Connection Fees used for Debt payment	70,756	556,467	556,467	556,467	556,467
Net Est Annual Connection Fees for Debt (short)/over	1,355,796	(343,069)	1,354,825	(472,812)	(471,139)
Cummulative Net	1,355,796	1,012,727	2,367,552	1,894,740	1,423,601