

# City of Manteca Draft Sewer Rate Study

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## Introduction

In 2003 the City of Manteca adopted revised sewer charges that increased sewer rates over time, with the last scheduled rate increase in July of 2007. It is generally good practice to periodically review the revenue model and billing rate methodology underlying monthly sewer charges to ensure that revenues are keeping pace with expenditures over time.

Since five years has passed since the last rate study analysis, the City wished to review all of the underlying assumptions in the rate analysis. Sewer enterprise expenses were reviewed in detail by City staff, ECO:LOGIC and Nolte Associates, consulting engineers to the City. In addition, the financing needs of the Sewer enterprise funds were also reviewed, as the City is continuing to upgrade the Wastewater Quality Control Facility (WQCF) and will be moving forward with the final schedule of the WQCF Phase III project in the coming months.

This rate analysis uses the same methodology as the 2003 rate analysis. However, all assumptions were reviewed and updated, if needed, to reflect the current requirements of the sewer enterprise fund. This report details the assumptions used in the analysis and provides an explanation of the rate setting methodology.

## SUMMARY OF FINDINGS AND RECOMMENDATIONS

- ***Revenue Bond Financing Needed:*** The City should consider additional revenue bond financing to repay the interfund borrowing that was used to fund cost overruns for the Phase III A, B, and D projects that were recently constructed. This will ensure that the funds borrowed (primarily from the Transportation fund) will be repaid in full in a timely manner. The City will also need to finance the cost of the Phase III, Schedule C project that will be the next project to be constructed.
- ***Depreciation included in Rate Setting Process:*** Since adoption of the prior rate study and rate increases, a new rule has been adopted by the Governmental Accounting Standards Board (GASB 34) that requires public agencies to either include depreciation in their budgeting and rate setting methodology or develop a highly detailed asset management plan. Most public agencies have found it easiest to comply with this new rule by including depreciation in budgeting and the rate setting methodology. Ideally this money should be set aside in a sinking fund to accrue interest. The money can be used to replace fixed capital assets at the end of their useful lives. It should also minimize the need for borrowing money for capital projects in the future and allow the City to operate on more of a pay-as-you-go basis, if so desired.

Fiscal year 2008-09 depreciation is estimated at \$2,000,000 for the sewer enterprise fund. It was determined that to include the full depreciation in the rate calculation

would be too burdensome for rate payers in 2008-09. Therefore, the rate model assumes \$800,000 in 2008-09 increasing each year up to \$1.65 million in 2012-13.

- ***Operating Reserve:*** The City currently does not have an official operating reserve policy regarding the sewer enterprise fund. The rate study recommends that the City build up an operating reserve equal to approximately 4 months of operating expenses (excluding debt service and depreciation). This will allow the City a prudent financial cushion in case of unexpected financial costs, such as unexpected or emergency repair or replacement of facilities.
- ***Expenses are projected to outstrip Revenues in 2008-09:*** The City has been very diligent about keeping expenses in line with projected revenues. However, this has meant that certain personnel positions were not filled or capital outlay projects deferred. The 2008-09 through 2012-13 expenses in this rate analysis include previously unfunded costs or costs that are needed to ensure that the Sewer Enterprise fund is adequately provided for going forward.

For these reasons, the monthly sewer charges need to be increased. The calculated rates are summarized in **Table 1**.

#### **ADDITIONAL RECOMMENDATIONS**

- ***Adopt Policy Guidelines regarding the Depreciation Sinking Fund:*** If revised rates are adopted that allow for the depreciation expense, the City will quickly begin to accumulate money for the future replacement of fixed assets. The City may want to consider adopting policy on what this money can be used for in specific terms. This will help provide clarification to customers that may question why the City would need to accumulate such funds. It will also allow staff to determine what projects are eligible for funding.
- ***Revise Phase III Sewer Connection Fee:*** The Phase III sewer connection fee should be revised in light of the higher costs associated with the actual project construction. Not all of the costs will be able to be recouped via connection fees, as those projects that have already paid the fee, paid at the lower price. However, any future connections should pay their proportionate share of the higher cost. ECO:LOGIC has calculated a revised connection fee, which is summarized in Appendix C.
- ***Automatic Rate Adjustment Factor:*** The City currently has a rate adjustment factor of 5.3 percent that became effective as of July 1, 2007. It is recommended that this rate adjustment factor remain in the City's rate ordinance and would again become effective after year 5, assuming the City adopts the current 5 year rate projections as summarized in **Table 1**.

**Table 1**  
**City of Manteca**  
**Sewer Rate Study Update**  
**Summary of Calculated Rates**

**DRAFT**

	1/1/2009	1/1/2010	1/1/2011	1/1/2012	1/1/2013
<b>Residential &amp; Equivalents - Monthly Cost per Unit</b>	\$39.50	\$43.30	\$46.55	\$48.30	\$51.25
<b>Commercial - Monthly Cost per hcf [1]</b>					
Trailer Park	\$33.36	\$36.57	\$39.32	\$40.82	\$43.32
Rooming Houses	\$25.26	\$27.70	\$29.78	\$30.96	\$32.86
Commercial/Retail	\$28.24	\$30.96	\$33.29	\$34.59	\$36.71
Hotel/Motel	\$30.84	\$33.81	\$36.36	\$37.76	\$40.07
Hotel/Motel (w/kitchen)	\$56.47	\$61.89	\$66.56	\$68.97	\$73.17
Car Washes/Laundromats	\$22.37	\$24.53	\$26.37	\$27.44	\$29.13
Service Stations (metered)	\$31.05	\$34.04	\$36.60	\$38.01	\$40.34
Office/Light Industrial	\$23.12	\$25.35	\$27.26	\$28.36	\$30.10
Restaurants	\$66.09	\$72.42	\$77.88	\$80.68	\$85.58
Markets	\$68.85	\$75.45	\$81.14	\$84.04	\$89.14
Mortuaries	\$68.85	\$75.45	\$81.14	\$84.04	\$89.14
Hospitals	\$29.82	\$32.69	\$35.15	\$36.51	\$38.75
Elementary School	\$21.94	\$24.06	\$25.86	\$26.91	\$28.57
Secondary School	\$21.94	\$24.06	\$25.86	\$26.91	\$28.57
Churches	\$26.18	\$28.71	\$30.87	\$32.09	\$34.06
Non-Profit	\$25.37	\$27.82	\$29.91	\$31.10	\$33.01
Commercial Mixed Use	\$36.70	\$40.23	\$43.26	\$44.90	\$47.64
<b>Industrial - Cost per Year</b>					
Flow - Cost per MG	\$4,512.23	\$4,946.55	\$5,318.80	\$5,521.52	\$5,859.17
BOD - Cost per 1,000 Lbs	\$0.343	\$0.375	\$0.404	\$0.417	\$0.442
SS - Cost per 1,000 Lbs	\$0.649	\$0.711	\$0.765	\$0.790	\$0.838
Nitrogen - Cost per 1,000 lbs	\$0.023	\$0.023	\$0.023	\$0.023	\$0.023
<b>Septage - Cost per 1,000 Gallons</b>	\$150.76	\$165.16	\$177.63	\$183.63	\$194.69
<b>City of Lathrop - Allocated Cost per Year [2]</b>	\$1,095,865	\$1,157,851	\$1,270,553	\$1,356,635	\$1,441,005
Unit cost per million gallons	\$999.24	\$1,055.76	\$1,158.53	\$1,237.02	\$1,313.95
Unit cost per pound of BOD	\$0.303	\$0.320	\$0.351	\$0.375	\$0.398
Unit cost per pound of SS	\$0.535	\$0.566	\$0.621	\$0.663	\$0.704
Unit cost per pound of nitrogen	\$1.437	\$1.518	\$1.666	\$1.779	\$1.889
<b>Raymus Village - Allocated Cost per Year [2]</b>	\$155,935	\$170,929	\$183,799	\$190,695	\$202,333

[1] Hundred cubic feet (hcf) of potable water consumption.

[2] The cost charged to the City of Lathrop and Raymus Village is set by a contract agreement between these entities and the City of Manteca. The rate analysis has tried to reflect those costs as accurately as is possible.

## PURPOSE OF THE REPORT

The purpose of the report is to provide an explanation and justification of the calculated rates for the City. Rates have been calculated for the fiscal years 2008-09 through 2012-13. The rates have been calculated in accordance with the requirements of XIIC et. seq. of the California Constitution, commonly known as Proposition 218, which mandates that the fee or charge imposed is commensurate with the benefit received by those paying the fee.

## SEWER RATE MODEL OVERVIEW

The calculated sewer rates are based on a systematic analysis of the sewer contribution made by various land uses and the costs required to collect and treat sewer influent. Influent is composed of the following components:

- Sewer Flow (Flow)
- Biological Oxygen Demand (BOD)

- Suspended Solids (SS)
- Nitrogen

The sewer rate model allocates costs to the various customer categories based on their relative contribution to the sewer system influent. The allocation of costs between customer categories is based on a combination of estimated usage and actual sewer influent.

Sewer expenditures include the following categories:

- Collection operating and maintenance costs
- Treatment operating and maintenance costs
- Debt service (existing and projected)
- Capital replacement
- Depreciation
- Operating reserves/contingency

Once the costs are allocated to the various customer categories, rates are determined by dividing the allocated costs by the number of users in each category.

## **ORGANIZATION OF THE REPORT**

This report is divided into four chapters. Following this introduction, **Section II** provides an overview of the City and the Sewer Enterprise Fund. **Section III** details the methodology of the sewer rate analysis and the calculated sewer rate charges. **Section IV** provides a comparison of sewer rates charged by other nearby and comparable jurisdictions.

**Appendix A** includes the cost projections for 2008-09 through 2012-13 and the cost analysis summary tables prepared by Nolte Associates and City staff. **Appendix B** includes a summary of the Eckert Cold Storage rate structure as determined by the City. **Appendix C** includes an ECO:LOGIC memo to Phil Govea detailing the update to the WQCF Phase III connection fee.

## The City and the Sewer Maintenance and Operation Fund

The demand for wastewater service is directly related to the number of residential and non-residential customers within the City as well as the additional demand attributed to the City of Lathrop and Raymus Village.

The City has nearly completed a significant facility upgrade and expansion of its wastewater quality control facility (WQCF). Plant upgrades were required to comply with increased State wastewater (discharge) requirements as well as to ensure that the WQCF will be able to continue to serve the existing customers within the City. The facility expansion also provides for additional growth within the City.

The WQCF Phase III project was planned for construction in four phases, or schedules. The City has completed Schedules A, B, and D. The City plans to construct the Schedule C improvements in 2009. Approximately 14.7 percent of the cost was paid by the City of Lathrop to cover its share of the capacity. The remaining cost was funded by the City of Manteca through a combination of grant funding and a revenue bond financing.

The security for the revenue bond is primarily the monthly sewer service charges. However, it was determined that approximately 51 percent of the project was to benefit future users. Therefore, the City established a connection fee related to the Phase III project that is based on new developments' share of the costs. As connection fees are paid, they are used to pay down the revenue bonds, thereby ultimately limiting the amount that existing users will pay for debt service to their share of the costs.

In terms of the WQCF, approximately 70 percent of the wastewater treatment capacity is allocated to residential customers. **Table 2** shows the trends in population and housing since 1991. On average, the City has added approximately 1,250 new people per year and approximately 400 new housing units per year. This represents an annual average of growth rate of approximately 2.8% in population and 2.7% in housing.

The WQCF also serves a portion of the City of Lathrop customers. Since 1991, the City of Lathrop has experienced an average annual growth rate in population of 5.7 percent and an average annual increase in housing units of 5.1 percent as shown in **Table 3**. While this information is include for growth and revenue forecasting, it should be noted that the City of Lathrop is restricted to 14.7 percent of the WQCF treatment capacity.

Commercial accounts represent approximately 15 percent of the treatment capacity of the WQCF. There are currently approximately 700 commercial accounts, including churches and non-profits, but excluding schools.

In addition to these municipal accounts, the WQCF also treats influent for industrial and septage users, as well as the City of Lathrop and Raymus Village. These customers account for the remaining 15 percent in treatment capacity.

**Table 2**  
**City of Manteca**  
**City Growth Trends in Population and Housing**

Year (as of Jan. 1)	Population	Annual Change	Percent Increase	Housing Units	Annual Change	Percent Increase
1991	41,628			14,257		
1992	41,947	319	0.8%	14,326	69	0.5%
1993	42,833	886	2.1%	14,655	329	2.3%
1994	43,509	676	1.6%	14,905	250	1.7%
1995	44,111	602	1.4%	15,086	181	1.2%
1996	44,927	816	1.8%	15,263	177	1.2%
1997	46,136	1,209	2.7%	15,616	353	2.3%
1998	47,256	1,120	2.4%	15,872	256	1.6%
1999	48,027	771	1.6%	16,114	242	1.5%
2000	49,255	1,228	2.6%	16,936	822	5.1%
2001	51,658	2,403	4.9%	17,541	605	3.6%
2002	55,338	3,680	7.1%	18,648	1,107	6.3%
2003	57,596	2,258	4.1%	19,231	583	3.1%
2004	60,285	2,689	4.7%	20,075	844	4.4%
2005	61,981	1,696	2.8%	20,697	622	3.1%
2006	63,716	1,735	2.8%	21,410	713	3.4%
2007	65,076	1,360	2.1%	21,910	500	2.3%
<b>Average Annual</b>		<b>1,246</b>	<b>2.8%</b>		<b>399</b>	<b>2.7%</b>

*"manteca\_pop"*

Source: State Department of Finance

**Table 3**  
**City of Lathrop**  
**Growth Trends in Population and Housing**

Year (as of Jan. 1)	Population	Annual Change	Percent Increase	Housing Units	Annual Change	Percent Increase
1991	6,775			2,098		
1992	7,025	250	3.7%	2,097	(1)	0.0%
1993	7,050	25	0.4%	2,196	99	4.7%
1994	7,453	403	5.7%	2,510	314	14.3%
1995	8,290	837	11.2%	2,621	111	4.4%
1996	8,550	260	3.1%	2,690	69	2.6%
1997	8,850	300	3.5%	2,718	28	1.0%
1998	9,303	453	5.1%	2,794	76	2.8%
1999	9,513	210	2.3%	2,854	60	2.1%
2000	10,445	932	9.8%	2,991	137	4.8%
2001	10,824	379	3.6%	3,063	72	2.4%
2002	11,655	831	7.7%	3,271	208	6.8%
2003	12,135	480	4.1%	3,377	106	3.2%
2004	12,530	395	3.3%	3,476	99	2.9%
2005	12,849	319	2.5%	3,577	101	2.9%
2006	14,627	1,778	13.8%	4,092	515	14.4%
2007	16,479	1,852	12.7%	4,652	560	13.7%
<b>Average</b>		<b>444</b>	<b>5.7%</b>		<b>160</b>	<b>5.1%</b>

*"Lathrop\_pop"*

Source: State Department of Finance

## RECENT AND PLANNED UPGRADES/EXPANSION TO WASTEWATER FACILITIES

As noted above, the WQCF is a regional plant serving the Cities of Manteca and Lathrop. Treated wastewater from the plant is either applied to the City-owned/leased land for agricultural irrigation or discharged to the San Joaquin River. Discharges from the plant are regulated by the California Regional Water Quality Control Board.

In 2003 the City issued \$43.8 million in bonds to construct improvements to the WQCF, the Phase III project. The improvements were necessary to meet state discharge requirements issued by the Regional Board that required tertiary treatment prior to discharge to the San Joaquin River.

The WQCF Phase III project has one remaining phase or schedule to be completed, Schedule C. While the Schedule C project does not provide additional liquid treatment capacity, it is needed to address deficiencies in the existing solids handling facilities to accommodate the additional solids that will accompany increased flows up to approximately 10 MGD. The estimated cost for the Schedule C improvements is approximately \$8.8 million. Manteca's share is approximately \$7.5 million.

The actual cost for the three schedules, A, B, and D, which have been completed exceeded the original cost estimate by approximately \$9 million. The City funded these additional costs through interfund borrowing.

The City is planning on issuing additional bonds to fund the costs of the Schedule C improvements as well as to repay the interfund borrowing that was used to pay for the higher costs associated with Schedules A, B, and D improvements.

After the WQCF Phase III project is completed, the City is considering a pay-as-you-go (PAYG) system to fund future WQCF expansions. As this PAYG system is developed, additional details about this system will be available in a separate report.

For replacement of existing capital assets, the City will be able to draw down on the depreciation fund to pay for projects, thereby minimizing the need to finance projects in the future.

## **COMPARISON OF REVENUES AND EXPENSES**

**Table 4** summarizes actual and budgeted revenues and expenses for the Sewer Maintenance and Operation Enterprise Fund. An enterprise fund is a fund that is intended to cover its costs through user fees.

Revenues have generally exceeded O&M expenses since 2004-05. However, 2007-08 expenses are estimated to exceed revenues, particularly when depreciation is considered an actual expense in the rate setting process (as recommended by GASB 34).

In addition, the City intends to issue additional bonds to cover the next phase of improvements as well as repay the interfund loans, the rates will need to be adjusted upward in order to have sufficient revenue to pay debt service.

The sewer rate analysis, which is described in the following chapter, uses the budgeted FY 2007-08 expenditures as the basis for calculating the Base Year sewer rate charges.

**Table 4**  
**City of Manteca**  
**Sewer Rate Study Update**  
**Historical & Budgeted Revenues and Expenses - Fund 064**

	Actual				Budget
	2003-04	2004-05	2005-06	2006-07	2007-08
<b>Revenues</b>					
Sewer Service Charges					
Sewer Service Charges - General	\$4,974,264	\$7,417,866	\$8,267,017	\$9,493,848	\$9,546,000
Outside Sewer Service Charges	\$93,245	\$105,736	\$112,543	\$128,705	\$125,000
City of Lathrop Charges	\$367,721	\$1,250,965	\$692,488	\$618,625	\$700,000
Penalties	\$53,409	\$81,596	\$90,442	\$90,000	\$120,000
<b>Subtotal Sewer Serv. Charges</b>	<b>\$5,488,639</b>	<b>\$8,856,163</b>	<b>\$9,162,490</b>	<b>\$10,331,178</b>	<b>\$10,491,000</b>
Other Revenues					
Use of Money & Property	\$72,193	\$639,282	\$519,016	\$576,423	\$398,400
Other Revenues	\$0	\$85	\$1,299	\$0	\$0
<b>Subtotal Other Revenues</b>	<b>\$72,193</b>	<b>\$639,367</b>	<b>\$520,315</b>	<b>\$576,423</b>	<b>\$398,400</b>
<b>Total Revenues</b>	<b>\$5,560,832</b>	<b>\$9,495,530</b>	<b>\$9,682,805</b>	<b>\$10,907,601</b>	<b>\$10,889,400</b>
<b>Expenses</b>					
Personel Services	1,703,042	1,980,192	2,129,079	2,576,716	3,261,658
Support Services	784,200	892,700	953,000	956,039	1,032,300
Utilities	294,955	487,398	722,731	699,645	962,720
Materials and Supplies	939,569	1,231,789	1,962,989	1,788,402	3,009,519
WQCF O&M and Capital Costs [1]	91,068	-	-	-	2,660,725
Collection O&M and Capital Costs	42,044	64,809	182,285	141,972	1,155,013
Debt Service	1,245,604	2,127,079	2,023,092	1,907,317	1,940,609
Depreciation	-	-	-	-	-
<b>Subtotal Expenses</b>	<b>\$5,100,483</b>	<b>\$6,783,968</b>	<b>\$7,973,176</b>	<b>\$8,070,091</b>	<b>\$14,022,544</b>
<b>Revenues Less Expenses</b>	<b>\$460,349</b>	<b>\$2,711,562</b>	<b>\$1,709,629</b>	<b>\$2,837,510</b>	<b>(\$3,133,144)</b>

[1] Excludes expenses for WQCF Phase III Improvements, which were funded through a combination of revenue sources.

## Sewer Rate Analysis

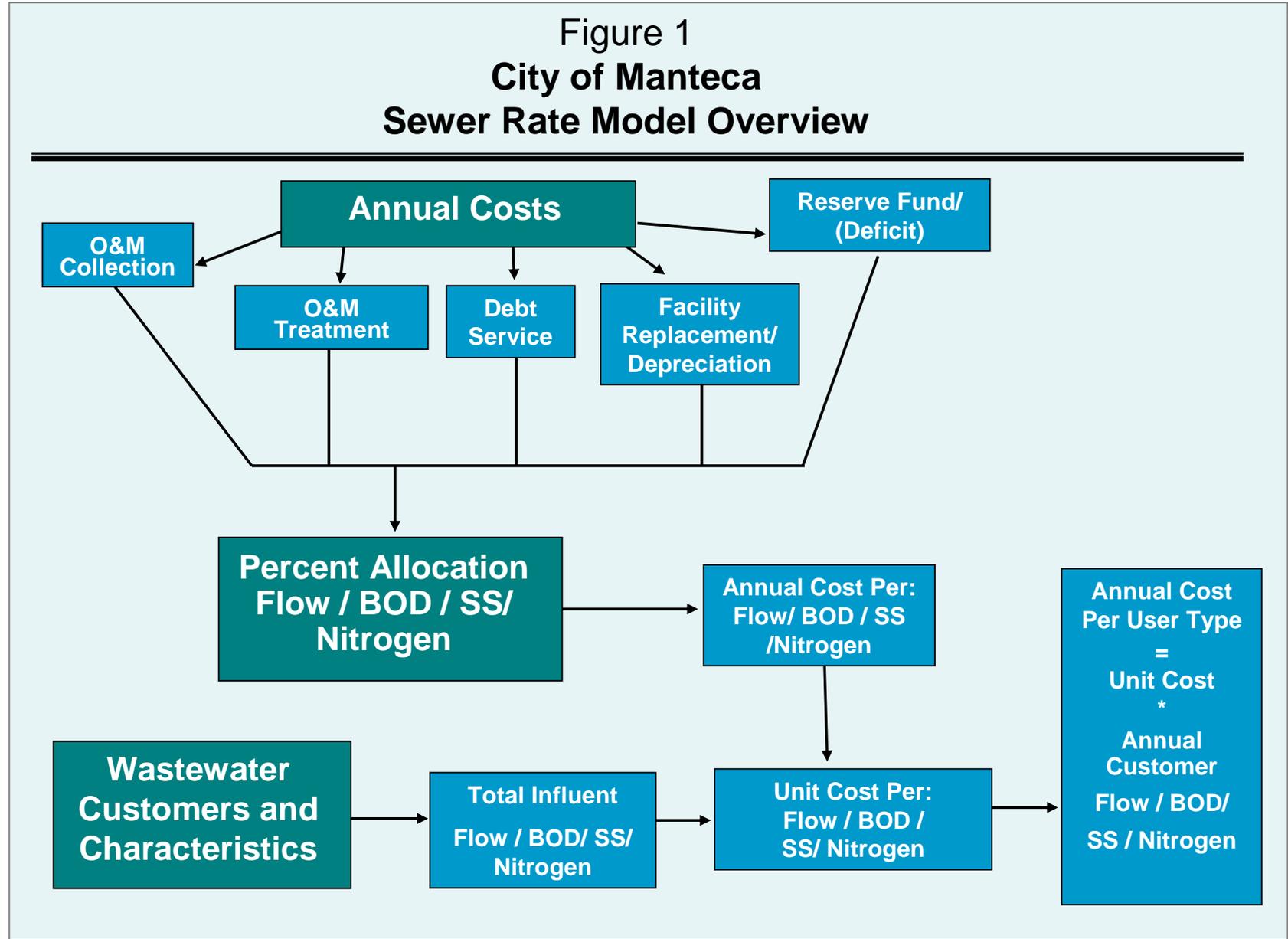
The sewer rate model was used as the basis to adopt revised rates in 2003. This same model has been updated with current information and rates are calculated for fiscal years 2008-09 through 2012-13. The sewer model consists of several steps that systematically lead to the recommended sewer rates by customer category.

**Figure 1** graphically depicts the Sewer Rate Model. The primary steps in computing the rates are as follows:

1. ***Establish the Wastewater Customer Base and User Characteristics***—The wastewater customer base includes residential, commercial, industrial, septage and other municipal users. User characteristics are comprised of wastewater flow, BOD, suspended solids, and nitrogen. The flow and concentration of the influent varies by customer type.
2. ***Establish the Annual Costs to be Funded***—Annual Costs include Treatment Operations and Maintenance (O&M), Collection O&M, Debt Service, Facility Replacement, and a Contingency or Reserve Fund.
3. ***Allocate the Annual Costs to Either Flow, BOD, SS or Nitrogen***—The Annual Costs are distributed to either Flow, BOD, SS or nitrogen depending on a percentage distribution of O&M operations (or Project capital expenditures) attributed to flow, BOD, SS and nitrogen as determined by Nolte and the City. Nitrogen is an additional user characteristic considered in this analysis that wasn't considered in the 2003 rate analysis.
4. ***Determine the Unit Cost per Flow, BOD, SS or Nitrogen***—The Unit Cost is determined by dividing the allocated cost per flow or concentration category by the total system demand for that category. This is determined for each Cost Category (as described under Step 1 above)
5. ***Determine the Annual Cost per Customer Type***—The Unit Costs (for Flow, BOD, SS and nitrogen by Cost Category) are then multiplied by number of customers to determine the annual cost per customer type. The annual amount per customer type can be divided by 12 to establish the monthly charge per customer type.

Each of these steps is described in greater detail below. In addition, the next section of this chapter describes some of the major assumptions used in calculating the sewer rate user charges.

**Figure 1  
City of Manteca  
Sewer Rate Model Overview**



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Rates were computed for every year using the model, however only the year 2008-09 tables are shown in the report.

## OVERVIEW OF MAJOR ASSUMPTIONS

The following describes the major assumptions used in calculating the sewer rates for the City.

- **Costs** – the projected costs were looked at in detail by City staff and Nolte Associates. Appendix A provides additional information, such as line item costs for each fiscal year projected.
- **Nitrogen** – City staff determined that in addition to flow, BOD, and SS, the rate structure should also take into consideration the impact of treating for nitrogen.
- **Additional Borrowing** – the rate model and calculations also factor in approximately \$16.6 million in revenue bond proceeds to fund Schedule C of the Phase III project and interfund borrowing that was needed to fund earlier schedules of the Phase III project.

## SEWER RATE MODEL

The following describes the steps in the model used to compute the sewer rate charges.

### WASTEWATER CUSTOMERS AND CHARACTERISTICS

**Table 5** summarizes the wastewater customers, the number of customers in each category, and their respective wastewater characteristics in terms of flow and concentration (BOD, SS, and nitrogen).

The residential flow factor is assumed to be 250 gallons per day based on City data that indicates that this is the average flow per customer per day. The non-residential flow factors were also determined by looking at consumption data for the past fiscal year by each user group category. The BOD, SS and Nitrogen factors were assumed based on industry averages.

These characteristics are translated into daily existing treatment capacity and design capacity. In the sewer rate model, there is no distinction made between existing capacity and design capacity. The daily treatment capacity is then translated into total annual capacity. Total annual capacity is estimated at 2.6 billion gallons of flow per year, 6.9 million pounds per year of BOD, 6.5 million pounds per year of SS, and 920,369 pounds per year of nitrogen.

**Table 5**  
**City of Manteca**  
**Sewer Rate Study Update**  
**Summary of Wastewater Users and Characteristics**

**DRAFT**

Customer Category	Estimated Number of Customers Basis		Wastewater Characteristics [1]				Existing & Design Treatment Capacity				Total Annual Capacity			
			ADWF/User	BOD	SS	Nitrogen	Flow	BOD	SS	Nitrogen	Flow	BOD	SS	Nitrogen
			GPD	PPM	PPM	MG/L	MGD	Lbs/Day	Lbs/Day	Lbs/Day	MG	Lbs/Year	Lbs/Year	Lbs/Year
(A)	(B)	(C)	(D)	(E)	(F)=(A)x(B)	(G)= (C)x(F)x8.34	(H)= (D)x(F)x8.35	(I)= (E)x(F)x8.36	(J)=(F)x365	(K)=(C)x(J)x8.34	(L)=(D)x(J)x8.35	(M)=(E)x(J)x8.36		
<b>Residential EDUs</b>														
Single Family	17,064	units	250	325	310	43	4.2660	11,563	11,029	1,530	1,557.09	4,220,492	4,025,700	558,404
Duplex	556	units	250	325	310	43	0.1390	377	359	50	50.74	137,517	131,170	18,195
Triplex	265	units	250	325	310	43	0.0663	180	171	24	24.18	65,543	62,518	8,672
Multiples	3,002	units	250	325	310	43	0.7505	2,034	1,940	269	273.93	742,494	708,225	98,238
<b>Subtotal Residential EDUs</b>	<b>20,887</b>	<b>units</b>					<b>5.2218</b>	<b>14,154</b>	<b>13,500</b>	<b>1,873</b>	<b>1,905.94</b>	<b>5,166,047</b>	<b>4,927,614</b>	<b>683,508</b>
<b>Commercial</b>														
Trailer Park	286	spaces	250	250	300	20	0.0715	149	179	12	26.10	54,413	65,296	4,353
Rooming Houses	2	accounts	317	250	100	20	0.0006	1	1	0	0.23	482	193	39
Commercial/Retail	295	accounts	23	200	200	20	0.0066	11	11	1	2.42	4,041	4,041	404
Hotel/Motel	7	accounts	4888	310	120	43	0.0342	88	34	12	12.49	32,292	12,500	4,479
Hotel/Motel (w/kitchen)	3	accounts	3025	600	600	43	0.0091	45	45	3	3.31	16,577	16,577	1,188
Car Washes/Laundromats	10	accounts	3440	20	150	20	0.0344	6	43	6	12.56	2,094	15,707	2,094
Service Stations (metered)	16	accounts	1564	180	280	20	0.0250	38	58	4	9.13	13,711	21,329	1,523
Office/Light Industrial	215	accounts	1270	150	100	20	0.2730	342	228	46	99.65	124,659	83,106	16,621
Restaurants	64	accounts	1645	1000	600	50	0.1053	878	527	44	38.42	320,459	192,275	16,023
Markets	10	accounts	3969	800	800	43	0.0397	265	265	14	14.49	96,653	96,653	5,195
Mortuaries	1	accounts	1500	800	800	43	0.0015	10	10	1	0.55	3,653	3,653	196
Hospitals	9	accounts	10610	300	100	43	0.0955	239	80	34	34.85	87,203	29,068	12,499
Elementary School w/o Cafeteria	6425	students	8	130	100	15	0.0514	56	43	6	18.76	20,341	15,647	2,347
Elementary School w/ Cafeteria	2340	students	13	130	100	15	0.0304	33	25	4	11.10	12,038	9,260	1,389
Secondary School w/o Cafeteria	54	students	18	130	100	15	0.0010	1	1	0	0.35	385	296	44
Secondary School w/Cafeteria	5186	students	23	130	100	15	0.1193	129	99	15	43.54	47,202	36,309	5,446
Churches	32	accounts	1294	130	100	43	0.0414	45	35	15	15.12	16,389	12,607	5,421
Non-Profit	12	accounts	790	130	80	43	0.0095	10	6	3	3.46	3,752	2,309	1,241
Commercial Mixed Use	33	accounts	843	394	278	28	0.0278	91	64	6	10.16	33,337	23,512	2,355
<b>Subtotal Commercial</b>							<b>0.9772</b>	<b>2,437</b>	<b>1,754</b>	<b>227</b>	<b>356.69</b>	<b>889,681</b>	<b>640,337</b>	<b>82,859</b>
<b>Industrial</b>	18	accounts	3426	200	250	43	0.0617	103	129	22	22.51	37,546	46,933	8,072
<b>Septage</b>														
Septage	5	accounts	Metered	3-year average 5,046	23,000	500	0.00078	33	149	3	0.28	11,943	54,439	1,183
<b>Subtotal Septage</b>														
<b>Total Manteca</b>														
City of Lathrop			Metered	268	267	51	0.8630	1,930	1,920	367	315.00	704,577	700,899	133,980
Raymus Village (Residential Acc)	329	units	250	325	310	43	0.0823	223	213	29	30.02	81,373	77,617	10,766
<b>ESTIMATED TOTAL – ALL CUSTOMERS</b>							<b>7.2067</b>	<b>18,880</b>	<b>17,665</b>	<b>2,522</b>	<b>2,630.44</b>	<b>6,891,167</b>	<b>6,447,839</b>	<b>920,369</b>
<b>ESTIMATED TOTAL – EXCLUDING LATHROP</b>							<b>6.3437</b>	<b>16,950</b>	<b>15,745</b>	<b>2,154</b>	<b>2,315.44</b>	<b>6,186,590</b>	<b>5,746,940</b>	<b>786,389</b>

[1] Usage factors have been verified by Nolte Associates

## PROJECTED COSTS

**Table 6** summarizes the projected costs through 2012-13. The projected costs are based on the budgeted costs for 2007-08 and an analysis by Nolte Associates. Nolte Associates, working with City staff, looked in depth at the projected operating and maintenance costs over the next five years. The detailed analysis is included in **Appendix A**.

**Table 6**  
**City of Manteca**  
**Sewer Rate Study Update**  
**Projected Expenses**

**DRAFT**

	Budgeted	Projected [1]			
	2008-09	2009-10	2010-11	2011-12	2012-13
<b>Expenses</b>					
Personnel Services					
Existing Salaries and Benefits	\$3,490,422	\$4,219,006	\$4,670,796	\$5,331,188	\$5,868,234
Additional Personnel Costs	\$506,060	\$109,498	\$328,448	\$115,294	\$0
Support Services	\$1,075,800	\$1,129,590	\$1,186,070	\$1,245,373	\$1,307,642
Utilities	\$1,179,440	\$1,238,412	\$1,300,333	\$1,365,349	\$1,433,617
Materials and Supplies	\$1,929,873	\$1,968,767	\$2,067,205	\$2,170,565	\$2,279,093
Capital Outlay					
WQCF O&M and Capital Costs	\$262,655	\$273,161	\$284,088	\$295,451	\$307,269
Collection O&M and Capital Costs	\$323,625	\$336,570	\$350,033	\$364,034	\$378,595
Debt Service					
Existing Debt Service	\$2,347,933	\$2,736,599	\$2,772,504	\$2,524,994	\$2,563,187
New Debt Service	\$1,355,000	\$1,355,000	\$1,355,000	\$1,355,000	\$1,355,000
Depreciation	\$800,000	\$1,100,000	\$1,250,000	\$1,400,000	\$1,650,000
<b>Subtotal Expenses</b>	<b>\$13,270,808</b>	<b>\$14,466,603</b>	<b>\$15,564,476</b>	<b>\$16,167,249</b>	<b>\$17,142,637</b>
<b>Percent Escalation</b>		<b>9.0%</b>	<b>7.6%</b>	<b>3.9%</b>	<b>6.0%</b>

[1] See Appendix A

The costs in **Table 6** also include an estimate for new debt service. This new debt service is based on an estimated project borrowing of \$16.6 million. The use of funds is shown in **Table 7**. The Schedule C amount is for the last component of the Phase III WQCF expansion and upgrade project. **Table 7** also shows the distribution of costs between new and existing users. This is important because it is assumed that the share that is attributable to new development (51.5%) will ultimately be paid by new development via connection fees.

**Table 8** shows the calculated debt service on the \$18.7 million financing (\$16.6 million in proceeds). The debt service calculation assumes a 6 percent interest rate and a 30-year term. The interest rate at 6 percent is intended to be conservative, given current market conditions and a trend toward rising interest rates.

**Table 7**  
**City of Manteca**  
**Sewer Rate Study Update**  
**Items Included in Assumed Revenue Bond Financing**

Item	Estimated Cost	Cost Allocation			
		% New	% Existing	Cost to New	Cost to Existing
Schedule C (Manteca Share)	\$7,540,520	51.5%	48.5%	\$3,883,368	\$3,657,152
Interfund borrowing [1]	\$9,067,000	51.5%	48.5%	\$4,669,505	\$4,397,495
<b>Total</b>	<b>\$16,607,520</b>			<b>\$8,552,873</b>	<b>\$8,054,647</b>
<b>Total Rounded</b>	<b>\$16,608,000</b>			<b>\$8,553,000</b>	<b>\$8,055,000</b>
<i>Percent Allocation</i>				51.5%	48.5%

[1] Cost overruns for Schedule B and D and other facility improvements that were funded through interfund borrowing.

**Table 8**  
**City of Manteca**  
**Sewer Rate Study Update**  
**Estimated Debt Service for Additional Financing**

**DRAFT**

Item	Assumptions	Est. Additional Financing
		for Phase III & Additional One-time Cap. Improvments
<b>Total Loan/Bonds</b>		
Total Estimated Project Costs		\$16,608,000
Capitalized Interest	0 Months	\$0
Issuance Costs	4.0%	\$664,320
Bond Reserve Fund		\$1,355,000
<b>Loan/Bond Size</b>		<b>\$18,627,320</b>
<i>Adjustment for Rounding</i>		\$23,680
<b>Total Loan/Bond Size</b>		<b>\$18,651,000</b>
<b>Annual Costs</b>		
Estimated Gross Debt Service		\$1,354,975
<b>Estimated Gross Debt Service - Rounded</b>		<b>\$1,355,000</b>
Share of Costs:		
<b>Existing Development</b>	48.5%	<b>\$657,175</b>
<b>New Development</b>	51.5%	<b>\$697,825</b>
<b>Assumptions</b> <sup>[1]</sup>		
Interest Rate		6.00%
Term		30 Years
Bond Load Factor		1.1230

[1] Bond issuance assumptions are estimates only. Actual bond pricing will be determined based on market conditions at the time of bond issuance.

## COST ALLOCATION

Costs are allocated to customer categories and ultimately rate payers in two phases as follows:

1. Allocate the costs
  - To cost category (treatment vs. collection, etc.)
  - To Flow, BOD, SS and Nitrogen
2. Determine the unit cost by cost category
3. Use the unit costs to determine the costs allocated to customer types based on the flow and concentration of influent (BOD, SS and Nitrogen)

Each of these steps is described in greater detail below.

## Cost Allocation

**Table 9** shows the cost allocation to each cost category for 2008-09, and in particular to collection vs. treatment. These costs are then carried forward to **Table 10**.

**Table 9**  
**City of Manteca**  
**Sewer Rate Study Update**  
**Allocation to Treatment and Collection**

**DRAFT**

**2008-09**

	Allocation		Year 2008-09	Cost Allocation	
	Collection	Treatment		Collection	Treatment
<b>Expenses</b>					
Personnel Services					
On-going Salaries and Benefits	10%	90%	\$3,490,422	\$349,042	\$3,141,380
Add'l Personnel Costs associated with Project	0%	100%	\$506,060	\$0	\$506,060
Support Services	4%	96%	\$1,075,800	\$43,032	\$1,032,768
Utilities	4%	96%	\$1,179,440	\$47,178	\$1,132,262
Materials and Supplies	4%	96%	\$1,929,873	\$77,195	\$1,852,678
Capital Outlay					
WQCF O&M and Capital Costs	0%	100%	\$262,655	\$0	\$262,655
Collection O&M and Capital Costs	100%	0%	\$323,625	\$323,625	\$0
<b>Subtotal</b>			<b>\$8,767,875</b>	<b>\$840,072</b>	<b>\$7,927,803</b>
Existing Debt Service			\$2,347,933		
New Debt Service			\$1,355,000		
Depreciation			\$800,000		
<b>Subtotal</b>			<b>\$13,270,808</b>		
<b>Additional revenue needed for rate calculation [1]</b>					<b>(\$441,133)</b>
<b>Total</b>			<b>\$12,829,675</b>		

[1] Additional Revenue is comprised of following:

Operating Reserve/Deficit	\$500,000.00
Offsetting Revenue	(\$999,133.06)
Add'l Coverage/Rounding	\$58,000.00
Total	(\$441,133.06)

In **Table 10**, costs are allocated to flow, BOD, SS and nitrogen based on percentage allocation or distribution factors. These factors were determined by Nolte Associates based on their in-depth review of operations and projected costs. The summary of the analysis is included in **Appendix A**.

The allocated costs are then divided by the total influent to determine the unit cost per flow, BOD, SS, and nitrogen. These unit costs are then used to determine the cost allocated to each customer type and ultimately the calculated rates for each customer.

The cost allocated to the City of Lathrop is based on contract terms between the City and the City of Lathrop. **Table 11** shows the cost allocated to Lathrop. **Table 10** shows an adjustment based on the costs allocated to the City of Lathrop.

### **Cost Allocation by Customer Category**

**Table 12** shows the cost allocated to flow, BOD, SS and nitrogen by customer category. The unit costs determined in **Table 10** are multiplied the flow, BOD, SS and Nitrogen for each customer type. These costs are then summed to determine the total cost allocation by customer type. For example, residential customers are allocated \$8.7 million of the \$13.9 million in costs.

### **CALCULATED RATES**

Based on the costs allocated to each customer type, **Table 13** presents the calculated rates for 2008-09 for municipal customers. The rates for residential customers are charged on a monthly basis per unit. Residential users pay a flat service charge per month. The other municipal users, which are metered, are charged on a per 1,000 cubic feet basis of potable water consumption. **Table 13** also shows the calculated rates in comparison to the rates currently charged by the City.

The calculated rates for industrial and septage users are presented in **Table 14**.

### **Comparison of Projected Revenues and Expenditures**

**Table 15** provides a comparison of projected revenue and expenditures for FY 2008-09 through 2012-13. The rates are structured so that in addition to covering O&M expenses, revenues are sufficient to fund an operating reserve. A target reserve, representing 4 months of operating expenses is shown.

Included in the projected revenues is a line item for Eckert Cold Storage (Eckert), which is a food processor in the City that has historically discharged its wastewater to the City's sanitary collection system. A separate collection and disposal system was recently constructed that conveys Eckert's wastewater around the City's sanitary system and the WQCF for direct disposal on City farmland. This separate system is now operational, and City staff has prepared a sewer rate structure to recover the costs associated with this independent wastewater system. This independent rate structure is included in this report as Appendix B, and the anticipated revenue from Eckert is factored into the rate model.

Table 10  
City of Manteca  
Sewer Rate Study Update  
Allocation of Costs to Flow, BOD, SS and Nitrogen

2008-09

DRAFT

Cost Category	Allocated Operating Costs	Percent Allocation [1]				Cost				Total Influent				Unit Cost Per:			
		Flow	BOD	SS	Nitrogen	Flow	BOD	SS	Nitrogen	Flow MG	BOD Klbs	SS Klbs	Nitrogen	Mgal of Flow (\$/Mgal)	Klb of BOD (\$/Klb)	Klb of SS (\$/Klb)	Nitrogen
<b>Collection System O&amp;M Costs [1] [2]</b>	\$840,072	100.00%	0.00%	0.00%	0.00%	\$840,072	\$0	\$0	\$0	2,315	6,187	5,747	786	\$362.81	-	-	-
<b>Treatment O&amp;M Costs (All Users)</b>	\$7,927,803	29%	19%	34%	18%	\$2,277,034	\$1,543,148	\$2,714,946	\$1,392,676	2,315	6,187	5,747	786	\$983.41	\$249.43	\$472.42	\$1,770.98
Lathrop Allocation	\$1,095,865	29%	19%	34%	18%	\$314,756	\$213,310	\$375,288	\$192,510	315	705	701	134	\$999.24	\$302.75	\$535.44	\$1,436.86
Lathrop Adjustment -- All Users	(\$1,095,865)	29%	19%	34%	18%	(\$314,756)	(\$213,310)	(\$375,288)	(\$192,510)	2,315	6,187	5,747	786	(\$135.94)	(\$34.48)	(\$65.30)	(\$244.80)
<b>Adjusted Unit Cost-Treatment: Lathrop All Users</b>														<b>\$999.24</b>	<b>\$302.75</b>	<b>\$535.44</b>	<b>\$1,436.86</b>
														<b>\$847.47</b>	<b>\$214.95</b>	<b>\$407.11</b>	<b>\$1,526.17</b>
<b>Debt Service (All Users)</b>	\$3,702,933	29%	19%	34%	18%	\$1,063,561	\$720,776	\$1,268,102	\$650,494	2,315	6,187	5,747	786	\$459.33	\$116.51	\$220.66	\$827.19
<b>Depreciation/Facility Rep. [1]</b>	\$800,000	29%	19%	34%	18%	\$229,777	\$155,720	\$273,967	\$140,536	2,315	6,187	5,747	786	\$99.24	\$25.17	\$47.67	\$178.71
<b>Other Revenues</b>	(\$441,133)	29%	19%	34%	18%	(\$126,703)	(\$85,867)	(\$151,070)	(\$77,494)	2,315	6,187	5,747	786	(\$54.72)	(\$13.88)	(\$26.29)	(\$98.54)
<b>TOTAL</b>	<b>\$12,829,675</b>																

[1] Costs are not allocated to Lathrop as determined by City of Manteca.

[2] The City of Lathrop provides its own collection system for influent and therefore no collection costs are allocated to Lathrop.

**Table 11**  
**City of Manteca**  
**Sewer Rate Study Update**  
**Allocation of Costs to Lathrop**

**DRAFT**

	2008-09	Percent					Cost					Allocation to Lathrop				
		Flow	Coll Flow	BOD	SS	Nitrogen	Flow	Coll Flow	BOD	SS	Nitrogen	Flow	Coll Flow	BOD	SS	Nitrogen
Lathrop Allocation [1]											11.97%	0	10.22%	10.87%	14.56%	
Monthly Operational Expenses																
Personnel Costs	\$3,996,482															
Less: Billing Personnel	(\$112,500)															
Net Costs Allocated	\$3,883,982	19.93%	6.74%	20.07%	34.83%	18.43%	\$773,936	\$261,942	\$779,598	\$1,352,684	\$715,822	\$92,679	\$79,709	\$147,041	\$104,204	
Materials, Supplies & Services	\$4,185,113															
Capital Outlay	\$262,655															
Less: Support Services	(\$1,095,050)															
Depreciation	\$1,500,000															
Net Costs Allocated	\$4,852,718	19.93%	6.74%	20.07%	34.83%	18.43%	\$966,970	\$327,275	\$974,044	\$1,690,068	\$894,361	\$115,795	\$99,590	\$183,715	\$130,194	
<b>Total Net Expenses</b>	<b>\$8,736,700</b>						<b>\$1,740,907</b>	<b>\$589,218</b>	<b>\$1,753,642</b>	<b>\$3,042,751</b>	<b>\$1,610,183</b>	<b>\$208,474</b>	<b>\$179,298</b>	<b>\$330,756</b>	<b>\$234,398</b>	
															\$952,926	
													<i>Admin Charge</i>	15%	\$142,939	
													<i>Total Charge</i>		\$1,095,865	

[1] Based on Lathrop's share of the total WQCF system flow, BOD, SS, and Nitrogen.

**Table 12**  
**City of Manteca**  
**Sewer Rate Study Update**  
**Allocation of Costs to Flow, BOD, SS and Nitrogen by Customer Category**

**DRAFT**

**2008-09**

Unit Cost/Customer Category	Flow MG, BOD Klb/Yr, SS Klb/Yr, Nitrogen				Operating Costs					Capital Costs			
					Collection		Treatment			Debt Service			
					Flow (\$/Mgal)	Flow (\$/Mgal)	BOD (\$/Klb)	SS (\$/Klb)	Nitrogen (\$/Klb)	Flow (\$/Mgal)	BOD (\$/Klb)	SS (\$/Klb)	Nitrogen (\$/Klb)
<b>Unit Cost</b>					<b>\$362.81</b>	<b>\$847.47</b>	<b>\$214.95</b>	<b>\$407.11</b>	<b>\$1,526.17</b>	<b>\$459.33</b>	<b>\$116.51</b>	<b>\$220.66</b>	<b>\$827.19</b>
<b>Residential EDUs</b>													
Single Family	1,557	4,220	4,026	558	\$564,932	\$1,319,593	\$907,215	\$1,638,918	\$852,221	\$715,224	\$491,714	\$888,299	\$461,906
Duplex	51	138	131	18	\$18,407	\$42,997	\$29,560	\$53,401	\$27,768	\$23,304	\$16,022	\$28,944	\$15,050
Triplex	24	66	63	9	\$8,773	\$20,493	\$14,089	\$25,452	\$13,235	\$11,107	\$7,636	\$13,795	\$7,173
Multiples	274	742	708	98	\$99,386	\$232,151	\$159,603	\$288,328	\$149,928	\$125,826	\$86,505	\$156,275	\$81,261
<b>Subtotal Residential</b>	<b>1,906</b>	<b>5,166</b>	<b>4,928</b>	<b>684</b>	<b>\$691,498</b>	<b>\$1,615,234</b>	<b>\$1,110,467</b>	<b>\$2,006,099</b>	<b>\$1,043,151</b>	<b>\$875,462</b>	<b>\$601,877</b>	<b>\$1,087,312</b>	<b>\$565,391</b>
<b>Commercial</b>													
Trailer Park	26	54	65	4	\$9,468	\$22,117	\$11,696	\$26,583	\$6,644	\$11,987	\$6,339	\$14,408	\$3,601
Rooming Houses	0	0	0	0	\$84	\$196	\$104	\$79	\$59	\$106	\$56	\$43	\$32
Commercial/Retail	2	4	4	0	\$879	\$2,053	\$869	\$1,645	\$617	\$1,113	\$471	\$892	\$334
Hotel/Motel	12	32	13	4	\$4,532	\$10,585	\$6,941	\$5,089	\$6,836	\$5,737	\$3,762	\$2,758	\$3,705
Hotel/Motel (w/kitchen)	3	17	17	1	\$1,202	\$2,807	\$3,563	\$6,749	\$1,813	\$1,522	\$1,931	\$3,658	\$983
Car Washes/Laundromats	13	2	16	2	\$4,555	\$10,640	\$450	\$6,394	\$3,196	\$5,767	\$244	\$3,466	\$1,732
Service Stations (metered)	9	14	21	2	\$3,314	\$7,741	\$2,947	\$8,683	\$2,325	\$4,195	\$1,597	\$4,706	\$1,260
Office/Light Industrial	100	125	83	17	\$36,153	\$84,449	\$26,796	\$33,834	\$25,367	\$45,771	\$14,524	\$18,338	\$13,749
Restaurants	38	320	192	16	\$13,941	\$32,564	\$68,884	\$78,278	\$24,454	\$17,650	\$37,335	\$42,427	\$13,254
Markets	14	97	97	5	\$5,256	\$12,277	\$20,776	\$39,349	\$7,929	\$6,654	\$11,261	\$21,327	\$4,297
Mortuaries	1	4	4	0	\$199	\$464	\$785	\$1,487	\$300	\$251	\$426	\$806	\$162
Hospitals	35	87	29	12	\$12,645	\$29,537	\$18,745	\$11,834	\$19,076	\$16,009	\$10,160	\$6,414	\$10,339
Elementary School w/o Cafeteria	19	20	16	2	\$6,807	\$15,899	\$4,372	\$6,370	\$3,582	\$8,618	\$2,370	\$3,453	\$1,941
Elementary School w/ Cafeteria	11	12	9	1	\$4,028	\$9,410	\$2,588	\$3,770	\$2,120	\$5,100	\$1,403	\$2,043	\$1,149
Secondary School w/o Cafeteria	0	0	0	0	\$129	\$301	\$83	\$120	\$68	\$163	\$45	\$65	\$37
Secondary School w/Cafeteria	44	47	36	5	\$15,796	\$36,896	\$10,146	\$14,782	\$8,312	\$19,998	\$5,499	\$8,012	\$4,505
Churches	15	16	13	5	\$5,484	\$12,810	\$3,523	\$5,132	\$8,273	\$6,943	\$1,909	\$2,782	\$4,484
Non-Profit	3	4	2	1	\$1,256	\$2,933	\$807	\$940	\$1,894	\$1,590	\$437	\$510	\$1,027
Commercial Mixed Use	10	33	24	2	\$3,685	\$8,607	\$7,166	\$9,572	\$3,594	\$4,665	\$3,884	\$5,188	\$1,948
<b>Subtotal Commercial</b>	<b>347</b>	<b>856</b>	<b>617</b>	<b>81</b>	<b>\$129,412</b>	<b>\$302,286</b>	<b>\$191,241</b>	<b>\$260,690</b>	<b>\$126,457</b>	<b>\$163,840</b>	<b>\$103,653</b>	<b>\$141,295</b>	<b>\$68,540</b>
<b>Industrial</b>	23	38	47	8	\$8,167	\$19,077	\$8,071	\$19,107	\$12,320	\$10,340	\$4,374	\$10,356	\$6,677
<b>Septage</b>													
Septage Customers	0.28	12	54	1	\$103	\$241	\$2,567	\$22,163	\$1,806	\$130	\$1,391	\$12,012	\$979
<b>Subtotal Septage</b>	<b>0.28</b>	<b>12</b>	<b>54</b>	<b>1</b>	<b>\$103</b>	<b>\$241</b>	<b>\$2,567</b>	<b>\$22,163</b>	<b>\$1,806</b>	<b>\$130</b>	<b>\$1,391</b>	<b>\$12,012</b>	<b>\$979</b>
<b>Total Manteca</b>													
Raymus Village (Residential Accts)	30	81	78	11	\$10,892	\$25,442	\$17,491	\$31,599	\$16,431	\$13,790	\$9,480	\$17,127	\$8,906
Adjusted Unit Cost						\$999	\$303	\$535	\$1,437				
City of Lathrop	315	705	701	134		\$314,756	\$213,310	\$375,288	\$192,510	n/a	n/a	n/a	n/a
<b>ESTIMATED TOTAL -- ALL CUSTOMERS</b>					<b>\$840,072</b>	<b>\$2,277,034</b>	<b>\$1,543,148</b>	<b>\$2,714,946</b>	<b>\$1,392,676</b>	<b>\$1,063,561</b>	<b>\$720,776</b>	<b>\$1,268,102</b>	<b>\$650,494</b>

Table 12

City of Manteca

Sewer Rate Study Update

Allocation of Costs to Flow, BOD, SS and Nitrogen by Customer Category

Continued

Unit Cost/Customer Category	Flow MG    BOD Klb/Yr    SS Klb/Yr    Nitrogen				Capital Costs				Subtotal	Other Revenues				Total				
					Depreciation/Facility Replacement					Flow (\$/Mgal)	BOD (\$/Klb)	SS (\$/Klb)	Nitrogen (\$/Klb)		Flow (\$/Mgal)	BOD (\$/Klb)	SS (\$/Klb)	Nitrogen
					Flow (\$/Mgal)	BOD (\$/Klb)	SS (\$/Klb)	Nitrogen (\$/Klb)										
<b>Unit Cost</b>					<b>\$99.24</b>	<b>\$25.17</b>	<b>\$47.67</b>	<b>\$178.71</b>	<b>\$5,333</b>	<b>(\$54.72)</b>	<b>(\$13.88)</b>	<b>(\$26.29)</b>	<b>(\$98.54)</b>	<b>\$5,140</b>				
<b>Residential EDUs</b>																		
Single Family	1,557	4,220	4,026	558	\$154,521	\$106,232	\$191,912	\$99,793	<b>\$8,392,479</b>	(\$85,205)	(\$58,578)	(\$105,824)	(\$55,027)	<b>\$8,087,844</b>				
Duplex	51	138	131	18	\$5,035	\$3,461	\$6,253	\$3,252	<b>\$273,454</b>	(\$2,776)	(\$1,909)	(\$3,448)	(\$1,793)	<b>\$263,528</b>				
Triplex	24	66	63	9	\$2,400	\$1,650	\$2,980	\$1,550	<b>\$130,333</b>	(\$1,323)	(\$910)	(\$1,643)	(\$855)	<b>\$125,602</b>				
Multiples	274	742	708	98	\$27,184	\$18,689	\$33,762	\$17,556	<b>\$1,476,455</b>	(\$14,990)	(\$10,305)	(\$18,617)	(\$9,681)	<b>\$1,422,862</b>				
<b>Subtotal Residential</b>	<b>1,906</b>	<b>5,166</b>	<b>4,928</b>	<b>684</b>	<b>\$189,139</b>	<b>\$130,032</b>	<b>\$234,908</b>	<b>\$122,150</b>	<b>\$10,272,720</b>	<b>(\$104,294)</b>	<b>(\$71,702)</b>	<b>(\$129,532)</b>	<b>(\$67,355)</b>	<b>\$9,899,836</b>				
<b>Commercial</b>																		
Trailer Park	26	54	65	4	\$2,590	\$1,370	\$3,113	\$778	<b>\$120,694</b>	(\$1,428)	(\$755)	(\$1,716)	(\$429)	<b>\$116,365</b>				
Rooming Houses	0	0	0	0	\$23	\$12	\$9	\$7	<b>\$809</b>	(\$13)	(\$7)	(\$5)	(\$4)	<b>\$781</b>				
Commercial/Retail	2	4	4	0	\$240	\$102	\$193	\$72	<b>\$9,479</b>	(\$133)	(\$56)	(\$106)	(\$40)	<b>\$9,145</b>				
Hotel/Motel	12	32	13	4	\$1,239	\$813	\$596	\$800	<b>\$53,394</b>	(\$683)	(\$448)	(\$329)	(\$441)	<b>\$51,493</b>				
Hotel/Motel (w/kitchen)	3	17	17	1	\$329	\$417	\$790	\$212	<b>\$25,976</b>	(\$181)	(\$230)	(\$436)	(\$117)	<b>\$25,012</b>				
Car Washes/Laundromats	13	2	16	2	\$1,246	\$53	\$749	\$374	<b>\$38,868</b>	(\$687)	(\$29)	(\$413)	(\$206)	<b>\$37,532</b>				
Service Stations (metered)	9	14	21	2	\$906	\$345	\$1,017	\$272	<b>\$39,310</b>	(\$500)	(\$190)	(\$561)	(\$150)	<b>\$37,909</b>				
Office/Light Industrial	100	125	83	17	\$9,889	\$3,138	\$3,962	\$2,970	<b>\$318,939</b>	(\$5,453)	(\$1,730)	(\$2,185)	(\$1,638)	<b>\$307,933</b>				
Restaurants	38	320	192	16	\$3,813	\$8,066	\$9,166	\$2,863	<b>\$352,695</b>	(\$2,103)	(\$4,448)	(\$5,054)	(\$1,579)	<b>\$339,511</b>				
Markets	14	97	97	5	\$1,438	\$2,433	\$4,608	\$928	<b>\$138,531</b>	(\$793)	(\$1,341)	(\$2,541)	(\$512)	<b>\$133,345</b>				
Mortuaries	1	4	4	0	\$54	\$92	\$174	\$35	<b>\$5,236</b>	(\$30)	(\$51)	(\$96)	(\$19)	<b>\$5,040</b>				
Hospitals	35	87	29	12	\$3,459	\$2,195	\$1,386	\$2,234	<b>\$144,031</b>	(\$1,907)	(\$1,210)	(\$764)	(\$1,232)	<b>\$138,918</b>				
Elementary School w/o Cafeteria	19	20	16	2	\$1,862	\$512	\$746	\$419	<b>\$56,951</b>	(\$1,027)	(\$282)	(\$411)	(\$231)	<b>\$54,999</b>				
Elementary School w/ Cafeteria	11	12	9	1	\$1,102	\$303	\$441	\$248	<b>\$33,705</b>	(\$608)	(\$167)	(\$243)	(\$137)	<b>\$32,550</b>				
Secondary School w/o Cafeteria	0	0	0	0	\$35	\$10	\$14	\$8	<b>\$1,077</b>	(\$19)	(\$5)	(\$8)	(\$4)	<b>\$1,040</b>				
Secondary School w/Cafeteria	44	47	36	5	\$4,320	\$1,188	\$1,731	\$973	<b>\$132,159</b>	(\$2,382)	(\$655)	(\$954)	(\$537)	<b>\$127,631</b>				
Churches	15	16	13	5	\$1,500	\$413	\$601	\$969	<b>\$54,824</b>	(\$827)	(\$227)	(\$331)	(\$534)	<b>\$52,904</b>				
Non-Profit	3	4	2	1	\$343	\$94	\$110	\$222	<b>\$12,162</b>	(\$189)	(\$52)	(\$61)	(\$122)	<b>\$11,738</b>				
Commercial Mixed Use	10	33	24	2	\$1,008	\$839	\$1,121	\$421	<b>\$51,697</b>	(\$556)	(\$463)	(\$618)	(\$232)	<b>\$49,828</b>				
<b>Subtotal Commercial</b>	<b>347</b>	<b>856</b>	<b>617</b>	<b>81</b>	<b>\$35,397</b>	<b>\$22,394</b>	<b>\$30,526</b>	<b>\$14,808</b>	<b>\$1,590,537</b>	<b>(\$19,518)</b>	<b>(\$12,348)</b>	<b>(\$16,833)</b>	<b>(\$8,165)</b>	<b>\$1,533,673</b>				
<b>Industrial</b>	23	38	47	8	\$2,234	\$945	\$2,237	\$1,443	<b>\$105,348</b>	(\$1,232)	(\$521)	(\$1,234)	(\$795)	<b>\$101,566</b>				
<b>Septage</b>																		
Septage Customers	0.28	12	54	1	\$28	\$301	\$2,595	\$211	<b>\$44,528</b>	(\$16)	(\$166)	(\$1,431)	(\$117)	<b>\$42,799</b>				
<b>Subtotal Septage</b>	<b>0.28</b>	<b>12</b>	<b>54</b>	<b>1</b>	<b>\$28</b>	<b>\$301</b>	<b>\$2,595</b>	<b>\$211</b>	<b>\$44,528</b>	<b>(\$16)</b>	<b>(\$166)</b>	<b>(\$1,431)</b>	<b>(\$117)</b>	<b>\$42,799</b>				
<b>Total Manteca</b>																		
Raymus Village (Residential Accts)	30	81	78	11	\$2,979	\$2,048	\$3,700	\$1,924	<b>\$161,810</b>	(\$1,643)	(\$1,129)	(\$2,040)	(\$1,061)	<b>\$155,937</b>				
Adjusted Unit Cost City of Lathrop	315	705	701	134	n/a	n/a	n/a	n/a	<b>\$1,095,865</b>	n/a	n/a	n/a	n/a	<b>\$1,095,865</b>				
<b>ESTIMATED TOTAL -- ALL CUSTOMERS</b>					<b>\$229,777</b>	<b>\$155,720</b>	<b>\$273,967</b>	<b>\$140,536</b>	<b>\$13,270,808</b>	<b>(\$126,703)</b>	<b>(\$85,867)</b>	<b>(\$151,070)</b>	<b>(\$77,494)</b>	<b>\$12,829,675</b>				

**Table 13**  
**City of Manteca**  
**Sewer Rate Study Update**  
**Detailed Sewer Rate Calculation**  
**Manteca Residential/Commercial Users**

2008-09

**DRAFT**

Customer Category	Number of Customers	Allocated Cost	Annual Cost Per Customer	Monthly Cost Per Customer			Current Rates as of 7/1/2008 [1]	
				Calculated Monthly Rates	Per 1,000 Cubic Feet Rates			
					Annual Flow	Cost/Gallon		Cost/1,000 cf
				MG				
<b>Residential EDUs</b>								
Single Family	17,064 units	\$8,087,844	\$473.97	\$39.50			\$34.80	
Duplex	556 units	\$263,528	\$473.97	\$39.50			\$34.80	
Triplex	265 units	\$125,602	\$473.97	\$39.50			\$34.80	
Multiples	3,002 units	\$1,422,862	\$473.97	\$39.50			\$34.80	
<b>Subtotal Residential</b>	20,887 units	<b>\$9,899,836</b>						
<b>Commercial</b>								
Trailer Park	286 spaces	\$116,365	\$406.87		26.10	\$0.00446	\$33.35	\$32.69
Rooming Houses	2 accounts	\$781	\$390.29		0.23	\$0.00338	\$25.25	\$31.02
Commercial/Retail	295 accounts	\$9,145	\$31.00		2.42	\$0.00377	\$28.24	\$18.00
Hotel/Motel	7 accounts	\$51,493	\$7,356.10		12.49	\$0.00412	\$30.84	\$33.33
Hotel/Motel (w/kitchen)	3 accounts	\$25,012	\$8,337.28		3.31	\$0.00755	\$56.48	\$52.25
Car Washes/Laundromats	10 accounts	\$37,532	\$3,753.22		12.56	\$0.00299	\$22.36	\$25.71
Service Stations (metered)	16 accounts	\$37,909	\$2,369.32		9.13	\$0.00415	\$31.05	\$34.00
Office/Light Industrial	215 accounts	\$307,933	\$1,432.25		99.65	\$0.00309	\$23.12	\$26.97
Restaurants	64 accounts	\$339,511	\$5,304.87		38.42	\$0.00884	\$66.10	\$66.82
Markets	10 accounts	\$133,345	\$13,334.46		14.49	\$0.00920	\$68.86	\$66.56
Mortuaries	1 accounts	\$5,040	\$5,039.66		0.55	\$0.00920	\$68.86	\$66.56
Hospitals	9 accounts	\$138,918	\$15,435.33		34.85	\$0.00399	\$29.82	\$31.02
Elementary School w/o Cafeteria	6,425 students	\$54,999	\$8.56		18.76	\$0.00293	\$21.93	\$27.53
Elementary School w/ Cafeteria	2,340 students	\$32,550	\$13.91		11.10	\$0.00293	\$21.93	\$27.53
Secondary School w/o Cafeteria	54 students	\$1,040	\$19.26		0.35	\$0.00293	\$21.93	\$27.53
Secondary School w/Cafeteria	5,186 students	\$127,631	\$24.61		43.54	\$0.00293	\$21.93	\$27.53
Churches	32 accounts	\$52,904	\$1,653.24		15.12	\$0.00350	\$26.18	\$27.53
Non-Profit	12 accounts	\$11,738	\$978.15		3.46	\$0.00339	\$25.37	\$26.97
Commercial Mixed Use	33 accounts	\$49,828	\$1,509.94		10.16	\$0.00491	\$36.70	
<b>Subtotal Commercial</b>		<b>\$1,483,845</b>						
<b>ESTIMATED TOTAL -- RESIDENTIAL AND COMMERCIAL</b>		<b>\$11,433,509</b>						

[1] Estimated based on 5.3% annual increase beginning July 1, 2007.

Table 14

City of Manteca

Sewer Rate Study Update

Detailed Sewer Rate Calculation

Manteca Industrial Users, Lathrop, and Raymus Village

DRAFT

2008-09

	Costs					Estimated Influent				Cost Per:				
	Flow	BOD	SS	Nitrogen	TOTAL	Flow (Mgal)	BOD (Klbs)	SS (Klbs)	Nitrogen	Mgal of Flow (\$/Mgal)	Thousand Gal. of Flow	Lb of BOD (\$/lb)	Lb of SS (\$/lb)	Lb of Nit. (\$/lb)
<b>Manteca Industrial/Septage Users</b>														
Industrial	\$38,585	\$12,869	\$30,467	\$19,645	<b>\$101,566</b>	22.51	37.55	46.93	8.07	\$4,512.05	n/a	\$0.3428	\$0.6492	\$0.0225
Septage Customers	\$486	\$4,094	\$35,339	\$2,880	<b>\$42,799</b>	0.28	11.94	54.44	1.18	n/a	\$150.81			
<b>Total Industrial</b>	<b>\$39,071</b>	<b>\$16,963</b>	<b>\$65,806</b>	<b>\$22,525</b>	<b>\$144,365</b>	<b>22.79</b>	<b>49.49</b>	<b>101.37</b>	<b>9.26</b>					
<b>Lathrop [1]</b>	\$314,756	\$213,310	\$375,288	\$192,510	<b>\$1,095,865</b>	315.00	704.58	700.90	133.98	\$999.24	n/a	\$0.3027	\$0.5354	\$1.4369
<b>Raymus Village</b>	\$51,461	\$27,891	\$50,385	\$26,200	<b>\$155,937</b>	30.02	81.37	77.62	10.77	\$1,714.14	n/a	\$0.3428	\$0.6492	\$0.0910
<b>TOTAL</b>					<b>\$1,396,166</b>									

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[1] Lathrop provides its own sewer collection facilities; therefore, it is not allocated collection facility cost. This results in a lower flow cost.

**Table 15**  
**City of Manteca**  
**Sewer Rate Study Update**  
**Projected Operating Revenues and Expenditures**

**DRAFT**

	Assumptions	Fiscal Year Ending				
		2009	2010	2011	2012	2013
<b>Revenues</b>						
Calculated Single-Family Sewer Rates		\$39.50	\$43.30	\$46.55	\$48.30	\$51.25
City of Manteca Sewer Rates	see note [1]	\$11,577,875	\$12,691,349	\$13,645,650	\$14,159,550	\$15,025,159
City of Lathrop Sewer Charge	see note [1]	\$1,095,865	\$1,157,851	\$1,270,384	\$1,356,968	\$1,441,365
Raymus Village Sewer Charge	see note [1]	\$155,935	\$170,929	\$183,779	\$190,686	\$202,339
Eckert Sewer Charge		\$211,308	\$221,648	\$232,497	\$243,878	\$255,820
Penalties	no change	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000
Interest Income	no change					
<b>Projected Operating Revenues</b>		<b>\$13,130,983</b>	<b>\$14,331,778</b>	<b>\$15,422,310</b>	<b>\$16,041,082</b>	<b>\$17,014,683</b>
Transfer Fee Rev from Capital Fund for New Dev. D/S [2]		\$697,825	\$697,825	\$697,825	\$697,825	\$697,825
<b>Total Revenue</b>		<b>\$13,828,808</b>	<b>\$15,029,603</b>	<b>\$16,120,135</b>	<b>\$16,738,907</b>	<b>\$17,712,508</b>
<i>Annual Change</i>				7.3%	3.8%	5.8%
<b>Expenses</b>						
Personel Services						
On-going Salaries and Benefits		\$3,490,422	\$4,219,006	\$4,670,796	\$5,331,188	\$5,868,234
Additional Personel Costs associated with Project		\$506,060	\$109,498	\$328,448	\$115,294	\$0
Support Services		\$1,075,800	\$1,129,590	\$1,186,070	\$1,245,373	\$1,307,642
Utilities		\$1,179,440	\$1,238,412	\$1,300,333	\$1,365,349	\$1,433,617
Materials and Supplies		\$1,929,873	\$1,968,767	\$2,067,205	\$2,170,565	\$2,279,093
Capital Outlay						
WQCF O&M and Capital Costs		\$262,655	\$273,161	\$284,088	\$295,451	\$307,269
Collection O&M and Capital Costs		\$323,625	\$336,570	\$350,033	\$364,034	\$378,595
<b>Projected Operating Expenses</b>		<b>\$8,767,875</b>	<b>\$9,275,004</b>	<b>\$10,186,971</b>	<b>\$10,887,254</b>	<b>\$11,574,450</b>
<i>Annual Change</i>			5.8%	9.8%	6.9%	6.3%
<i>Net Revenues before Depreciation and Debt Service</i>		\$5,060,933	\$5,754,599	\$5,933,163	\$5,851,653	\$6,138,058
Existing Debt Service		\$2,347,933	\$2,736,599	\$2,772,504	\$2,524,994	\$2,563,187
New Debt Service		\$1,355,000	\$1,355,000	\$1,355,000	\$1,355,000	\$1,355,000
<b>Total Debt Service</b>		<b>\$3,702,933</b>	<b>\$4,091,599</b>	<b>\$4,127,504</b>	<b>\$3,879,994</b>	<b>\$3,918,187</b>
<i>Debt Service Coverage</i>		1.37	1.41	1.44	1.51	1.57
Depreciation/Facility Replacement		\$800,000	\$1,100,000	\$1,250,000	\$1,400,000	\$1,650,000
Total Expenses		<b>\$13,270,808</b>	<b>\$14,466,603</b>	<b>\$15,564,476</b>	<b>\$16,167,249</b>	<b>\$17,142,637</b>
<b>Net Revenues/(Deficit)</b>		<b>\$558,000</b>	<b>\$563,000</b>	<b>\$555,659</b>	<b>\$571,659</b>	<b>\$569,871</b>
<b>Beginning Fund Balance</b>						
Net Revenues After Debt Service and Depreciation		\$558,000	\$563,000	\$555,659	\$571,659	\$569,871
2008-09 Bond Proceeds [3]		\$4,247,385				
Add Back-In Depreciation		\$800,000	\$1,100,000	\$1,250,000	\$1,400,000	\$1,650,000
Capital Projects PAYG [4]						
One time collection improvements costs		(\$1,644,070)				
One time WQCF improvements		(\$2,603,315)				
Central Trunk Line						(\$7,452,000)
<b>Ending Fund Balance</b>		<b>\$3,358,000</b>	<b>\$5,021,000</b>	<b>\$6,826,659</b>	<b>\$8,798,317</b>	<b>\$3,566,189</b>
<i>Target Operating Reserve [5]</i>		<i>\$2,923,000</i>	<i>\$3,092,000</i>	<i>\$3,396,000</i>	<i>\$3,629,000</i>	<i>\$3,858,000</i>

[1] Amounts based on calculated rates.

[2] Assumes that 51.5 percent of new debt service costs are funded by new users per Table 7.

[3] The City plans to issue revenues bonds in 2008-09 to pay for Schedule C and repay the interfund borrowing that was needed to pay for Phase III improvements to date. A portion of these costs has already been fronted by Fund 64, so it is assumed the proceeds will be repaid to Fund 64.

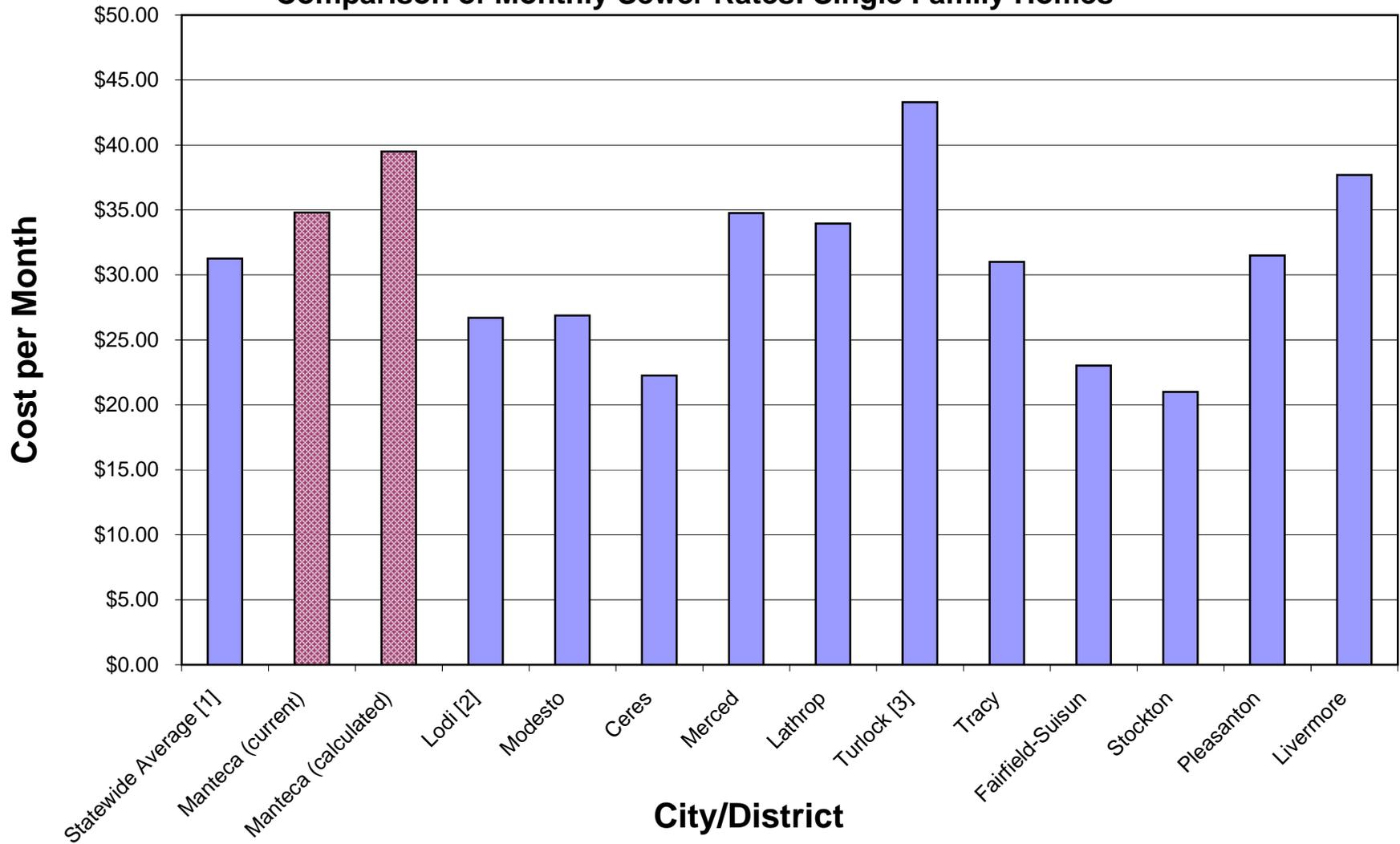
[4] See Appendix A for detailed list of one-time collection and WQCF improvements.

[5] Assumes 4 months of Operating Expenses.

## Sewer Rate Comparison

**Figure 2** provides a comparison of single family sewer rate charges. The rates as calculated are comparable to the City of Turlock, which has also made significant upgrades to its wastewater treatment facilities.

**Figure 2  
Comparison of Monthly Sewer Rates: Single Family Homes**



[1] Wastewater User Charge Survey Report, 2007-08, CA State Water Resources Control Board.

[2] Rates are based on number of bedrooms. Rate shown is for a 3 bedroom home.

[3] Rate is based on fixture. Rate shown assumes 26-30 fixtures.

Appendix A

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## Sewer Enterprise Cost Projections

**CITY OF MANTECA - SEWER RATE STUDY**

**EXPENSES AND COST ALLOCATION**

**July 2008**

<b>ACCOUNT NUMBER</b>	<b>ACCOUNT DESCRIPTION</b>	<b>FY 2008-2009</b>	<b>FY 2009-2010</b>	<b>FY 2010-2011</b>	<b>FY 2011-2012</b>	<b>FY 2012-2013</b>
<b>PERSONNEL</b>						
064-2404-481.10-01	Regular	2,152,550	-	-	-	-
064-2404-481.10-02	Part Time	17,600	-	-	-	-
064-2404-481.10-03	Overtime	99,300	-	-	-	-
064-2404-481.10-04	Holiday Pay	20,000	-	-	-	-
064-2404-481.10-07	Out Of Class	3,000	-	-	-	-
064-2404-481.10-10	Admin Leave Pay	21,100	-	-	-	-
064-2404-481.10-11	Longevity Pay	6,000	-	-	-	-
064-2404-481.10-55	Workers Comp	-	-	-	-	-
064-2404-481.10-99	Compensated Absences	-	-	-	-	-
064-2404-481.11-00	New Requests/Sal & Benefit	10,937	-	-	-	-
064-2404-481.12-01	Retirement	480,000	-	-	-	-
064-2404-481.12-02	Health Insurance	434,910	-	-	-	-
064-2404-481.12-03	Dental Insurance	47,715	-	-	-	-
064-2404-481.12-04	Vision Insurance	8,500	-	-	-	-
064-2404-481.12-05	Life Insurance	4,000	-	-	-	-
064-2404-481.12-06	Workers Comp	61,150	-	-	-	-
064-2404-481.12-07	Long Term Disability Ins	10,100	-	-	-	-
064-2404-481.12-08	Deferred Compensation	72,210	-	-	-	-
064-2404-481.12-16	Cell Phone	4,350	-	-	-	-
064-2404-481.12-10	Uniform Allowance	3,300	-	-	-	-
064-2404-481.12-11	Medicare	31,700	-	-	-	-
064-2404-481.12-12	Annual Physical Exam	2,000	-	-	-	-
THIS LINE ITEM IS FOR NEW PERSONNEL		416,065	-	167,774	102,362	-
THIS LINE ITEM FOR ESCALATED PERSONNEL TOTAL		-	4,417,567	4,770,973	5,333,846	5,871,105
<b>Subtotal Personnel</b>		<b>3,906,487</b>	<b>4,417,567</b>	<b>4,938,747</b>	<b>5,436,208</b>	<b>5,871,105</b>
<b>MATERIALS, SUPPLIES, AND SERVICES</b>						
THE LINE ITEM IS FOR NEW PERSONNEL ONE-TIME EQUIP. COSTS		89,995	-	59,156	12,932	-
064-2404-482.14-00	Utilities	1,179,440	1,238,412	1,300,333	1,365,349	1,433,617
064-2404-482.15-00	Telephone	6,200	6,510	6,836	7,177	7,536
064-2404-482.15-01	Telephone Related Repairs	2,500	2,625	2,756	2,894	3,039
064-2404-482.17-00	Office Supplies	4,200	4,410	4,631	4,862	5,105
064-2404-482.17-01	Postage	6,100	6,405	6,725	7,062	7,415
064-2404-482.17-02	Copier Maint.	4,000	4,200	4,410	4,631	4,862
064-2404-482.18-00	Meetings	2,000	2,100	2,205	2,315	2,431
064-2404-482.19-00	Vehicle Eqpt Maint & Oper	21,000	22,050	23,153	24,310	25,526
064-2404-482.19-01	Smog Retrofit	-	-	-	-	-
064-2404-482.19-02	Gasoline/Petroleum Prod	49,800	52,290	54,905	57,650	60,532
064-2404-482.19-05	Breathing Apparatus Reprs	500	525	551	579	608
064-2404-482.19-15	Mileage Reimbursement	200	210	221	232	243
064-2404-482.20-00	Support Services	1,075,800	1,129,590	1,186,070	1,245,373	1,307,642
064-2404-482.21-00	Employee Recruitment	5,400	5,670	5,954	6,251	6,564
064-2404-482.22-00	Legal Adv & Publications	-	-	-	-	-
064-2404-482.23-00	Special Dept Supplies	90,000	94,500	99,225	104,186	109,396
064-2404-482.23-07	Chemicals	133,000	139,650	146,633	153,964	161,662
064-2404-482.23-08	Laboratory Supplies	63,000	66,150	69,458	72,930	76,577
064-2404-482.23-10	Mechanics Tools	5,000	5,250	5,513	5,788	6,078
064-2404-482.23-17	Industrial Waste supplies	4,125	4,331	4,548	4,775	5,014
064-2404-482.23-25	Support Dept Supplies	8,450	8,873	9,316	9,782	10,271
064-2404-482.24-00	Maint Repairs-Land & Bldg	163,000	171,150	179,708	188,693	198,128
064-2404-482.24-15	Building Maintenance	8,000	8,400	8,820	9,261	9,724
064-2404-482.25-00	Rent Of Property & Equipt	11,500	12,075	12,679	13,313	13,978
064-2404-482.26-00	Radio Comm & Maintenance	2,000	2,100	2,205	2,315	2,431
064-2404-482.27-00	Other Servcs-Professional	149,600	157,080	164,934	173,181	181,840
064-2404-482.27-01	Contract Services	141,500	148,575	156,004	163,804	171,994
064-2404-482.27-03	Compliance Monitoring	213,800	224,490	235,715	247,500	259,875
064-2404-482.27-04	I.W. Monitoring	10,125	10,631	11,163	11,721	12,307
064-2404-482.27-06	Sludge Disposal	162,000	170,100	178,605	187,535	196,912
064-2404-482.27-25	Utility Stmt Processing	56,100	58,905	61,850	64,943	68,190
064-2404-482.27-29	Uniforms	4,500	4,725	4,961	5,209	5,470
064-2404-482.28-00	Dues & Subscription	28,248	29,660	31,143	32,701	34,336
064-2404-482.28-01	Operating Permits	6,500	6,825	7,166	7,525	7,901
064-2404-482.28-02	Annual Waste Dischrgr Fee	66,000	69,300	72,765	76,403	80,223
064-2404-482.28-04	Permit Fee	15,000	15,750	16,538	17,364	18,233
064-2404-482.28-05	NPDES Permit Renewal	-	-	-	-	-
064-2404-482.28-06	NPDES Compliance	50,000	52,500	55,125	57,881	60,775
064-2404-482.29-00	Maint Repairs - Equipment	58,850	61,793	64,882	68,126	71,533
064-2404-482.29-01	Developer Lift Station	-	-	-	-	-
064-2404-482.30-00	Special Dept Training	28,625	30,056	31,559	33,137	34,794
064-2404-482.30-25	Support Departments	3,500	3,675	3,859	4,052	4,254
064-2404-482.31-32	Property Tax Assessment	12,000	12,600	13,230	13,892	14,586
064-2404-482.34-00	Insurance Premiums	69,350	72,818	76,458	80,281	84,295
064-2404-482.35-00	Insurance Sir	125,000	131,250	137,813	144,703	151,938
064-2404-482.38-00	Data Processing	112,000	60,000	63,000	66,150	69,458
064-2404-484.44-03	Computers/Software	27,200	28,560	29,988	31,487	33,062
<b>Subtotal Materials, Supplies, and Services</b>		<b>4,275,108</b>	<b>4,336,769</b>	<b>4,612,763</b>	<b>4,794,219</b>	<b>5,020,352</b>
<b>Subtotal Before Capital Expenditures</b>		<b>8,181,595</b>	<b>8,754,336</b>	<b>9,551,510</b>	<b>10,230,428</b>	<b>10,891,457</b>
<b>CAPITAL EXPENDITURES</b>						
<i>PAY-AS-YOU-GO: Recurring WQCF O&amp;M and Capital Replacement Costs:</i>						
	IPS	6,300	6,552	6,814	7,087	7,370
	Primary	33,400	34,736	36,125	37,570	39,073
	Aeration	26,860	27,934	29,052	30,214	31,422
	Secondary	3,750	3,900	4,056	4,218	4,387
	DAF	7,600	7,904	8,220	8,549	8,891
	Digester	16,200	16,848	17,522	18,223	18,952
	Filters	17,671	18,378	19,113	19,878	20,673
	UV	82,070	85,353	88,767	92,318	96,010
	Title 22	400	416	433	450	468

**CITY OF MANTECA - SEWER RATE STUDY**

**EXPENSES AND COST ALLOCATION**

**July 2008**

<b>ACCOUNT NUMBER</b>	<b>ACCOUNT DESCRIPTION</b>	<b>FY 2008-2009</b>	<b>FY 2009-2010</b>	<b>FY 2010-2011</b>	<b>FY 2011-2012</b>	<b>FY 2012-2013</b>
	3 Water System	714	743	773	803	836
	SCADA	12,273	12,764	13,274	13,805	14,357
	Lab	-	-	-	-	-
	Vehicle	48,750	50,700	52,728	54,837	57,031
	Cogen	-	-	-	-	-
	Emergency Gen.	6,667	6,933	7,211	7,499	7,799
	Regulatory	-	-	-	-	-
	Cooling Facility	-	-	-	-	-
	<b>Subtotal Recurring WQCF</b>	<b>262,655</b>	<b>273,161</b>	<b>284,088</b>	<b>295,451</b>	<b>307,269</b>
<i>PAY-AS-YOU-GO: Recurring Collection System O&amp;M and Capital Replacement Costs:</i>						
	Pipe Cleaning Services	75,000	78,000	81,120	84,365	87,739
	Video Inspection Services	30,000	31,200	32,448	33,746	35,096
	Pipe Rehab/Point Repair	160,000	166,400	173,056	179,978	187,177
	Pump Station: Pump Replacement/Upgrade	36,000	37,440	38,938	40,495	42,115
	Pump Station: VFD Replacement	5,000	5,200	5,408	5,624	5,849
	ARV Replacement	4,000	4,160	4,326	4,499	4,679
	Line Extensions	-	-	-	-	-
	FOG Program	13,625	14,170	14,737	15,326	15,939
	0	-	-	-	-	-
	<b>Subtotal Recurring Collection System</b>	<b>323,625</b>	<b>336,570</b>	<b>350,033</b>	<b>364,034</b>	<b>378,595</b>
<i>PAY-AS-YOU-GO: One-Time Collection System Capital Costs</i>						
	Central Trunk [1]	-	-	-	-	7,451,608
	<b>Subtotal One Time Capital</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>7,451,608</b>
	<b>Subtotal Pay-As-You-Go Capital Costs</b>	<b>586,280</b>	<b>609,731</b>	<b>634,121</b>	<b>659,485</b>	<b>8,137,473</b>
<i>DEBT FINANCED: One-Time WQCF Capital Costs</i>						
	Schedule C [2]	-	-	-	-	-
	Northside RAS valve replacement	45,465	-	-	-	-
	Digester flow meters	30,000	-	-	-	-
	WQCF security	307,000	-	-	-	-
	IPS Sensors & Duct Mods	54,200	-	-	-	-
	River sample boat	21,650	-	-	-	-
	Digester gas equipment	103,000	-	-	-	-
	Biosolids Windrowing	600,000	-	-	-	-
	3W Well	216,000	-	-	-	-
	FOG Receiving Facility	150,000	-	-	-	-
	Hot Water Boiler	110,000	-	-	-	-
	Phase 3 Record Drawings	130,000	-	-	-	-
	utility lobby expansion	25,000	-	-	-	-
	degrit equipment	60,000	-	-	-	-
	Digester Crack	200,000	-	-	-	-
	Primary Tank Scum Skimmers	81,000	-	-	-	-
	Field 11 Irrigation System Extension	90,000	-	-	-	-
	DAF Flights Replacement	60,000	-	-	-	-
	Digester Water Seals	50,000	-	-	-	-
	Dump Truck	120,000	-	-	-	-
	Pavement Repair and Extension	150,000	-	-	-	-
	<b>Subtotal WQCF</b>	<b>2,603,315</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<i>DEBT FINANCED: One-Time Collection System Capital Costs</i>						
	Level sensing devices	26,000	-	-	-	-
	Union Road PS discharge box	35,700	-	-	-	-
	FOG Program	84,770	-	-	-	-
	Curran Grove Hatch Cover	15,000	-	-	-	-
	36" influent spray-on liner	180,000	-	-	-	-
	Emergency response equipment	98,600	-	-	-	-
	Lousie Ave sewer rehab	400,000	-	-	-	-
	Deficient pipelines & structures	804,000	-	-	-	-
	<b>Subtotal Collection System</b>	<b>1,644,070</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
	<b>Subtotal Debt Financed Capital Costs</b>	<b>4,247,385</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<hr/>						
<b>TOTALS [3]</b>		<b>8,767,875</b>	<b>9,364,067</b>	<b>10,185,630</b>	<b>10,889,913</b>	<b>19,028,930</b>

[1] Funding for the Central Trunk project is shown in Table 15 of the rate study.

[2] Schedule C costs are not included in this summary. These costs are included in Tables 6, 7 & 8 of the rate study.

[3] Total excludes debt financed one-time WQCF and Collection system capital costs. Debt service for these costs are calculated in Table 15 of the rate study.

\* Existing debt service expenses are not included in this summary. These expenses are included in Table 6 of the rate study.

CITY OF MANTECA  
SEWER RATE STUDY

DRAFT  
MAY 2008

EXPENSES AND UNIT ALLOCATIONS  
FISCAL YEAR: FY 2008-2009

Study Year: 1

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	BUDGET		UNIT PROCESS ALLOCATION																	
		FY 2008-2009	STUDY NUMBERS	IPS	Primary	Aeration	Secondary Sed.	Filtration	UV Disinfection	DAF	Digestion	Centrifuge	Landfill	Lab	Regulatory	Title 22	Collection System	Admin.	Total		
<b>PERSONNEL</b>																					
064-2404-481.10-01	Regular	2,152,550	2,152,550	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.10-02	Part Time	17,600	17,600	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.10-03	Overtime	99,300	99,300	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.10-04	Holiday Pay	20,000	20,000	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.10-07	Out Of Class	3,000	3,000	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.10-10	Admin Leave Pay	21,100	21,100	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.10-11	Longevity Pay	6,000	6,000	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.10-55	Workers Comp	-	-	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.10-99	Compensated Absences	-	-	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.11-00	New Requests/Sal & Benefit	10,937	10,937	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.12-01	Retirement	480,000	480,000	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.12-02	Health Insurance	434,910	434,910	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.12-03	Dental Insurance	47,715	47,715	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.12-04	Vision Insurance	8,500	8,500	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.12-05	Life Insurance	4,000	4,000	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.12-06	Workers Comp	61,150	61,150	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.12-07	Long Term Disability Ins	10,100	10,100	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.12-08	Deferred Compensation	72,210	72,210	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.12-16	Cell Phone	4,350	4,350	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.12-10	Uniform Allowance	3,300	3,300	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.12-11	Medicare	31,700	31,700	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-481.12-12	Annual Physical Exam	2,000	2,000	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
THIS LINE ITEM IS FOR NEW PERSONNEL		416,065	416,065	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
THIS LINE ITEM FOR ESCALATED PERSONNEL TOTAL		-	-	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
<b>Subtotal Personnel</b>		<b>3,906,487</b>	<b>3,906,487</b>	<b>156,259</b>	<b>195,324</b>	<b>507,843</b>	<b>507,843</b>	<b>312,519</b>	<b>195,324</b>	<b>195,324</b>	<b>390,649</b>	<b>195,324</b>	<b>-</b>	<b>390,649</b>	<b>390,649</b>	<b>78,130</b>	<b>390,649</b>	<b>-</b>	<b>3,906,487</b>		
<b>MATERIALS, SUPPLIES, AND SERVICES</b>																					
THE LINE ITEM IS FOR NEW PERSONNEL ONE-TIME EQUIP. COSTS		89,995	89,995	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-482.14-00	Utilities	1,179,440	1,179,440	10%	2%	20%	10%	8%	15%	8%	10%	10%	0%	0%	0%	2%	5%	0%	100%		
064-2404-482.15-00	Telephone	6,200	6,200	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	0%	0%	80%	100%		
064-2404-482.15-01	Telephone Related Repairs	2,500	2,500	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	0%	0%	80%	100%		
064-2404-482.17-00	Office Supplies	4,200	4,200	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	0%	0%	80%	100%		
064-2404-482.17-01	Postage	6,100	6,100	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	0%	0%	80%	100%		
064-2404-482.17-02	Copier Maint.	4,000	4,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	0%	0%	80%	100%		
064-2404-482.18-00	Meetings	2,000	2,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	0%	0%	80%	100%		
064-2404-482.19-00	Vehicle Eqpt Maint & Oper	21,000	21,000	4%	4%	4%	4%	4%	4%	4%	4%	4%	0%	0%	4%	60%	0%	100%			
064-2404-482.19-01	Smog Retrofit	-	-	4%	4%	4%	4%	4%	4%	4%	4%	4%	0%	0%	4%	60%	0%	100%			
064-2404-482.19-02	Gasoline/Petroleum Prod	49,800	49,800	4%	4%	4%	4%	4%	4%	4%	4%	4%	0%	0%	4%	60%	0%	100%			
064-2404-482.19-05	Breathing Apparatus Reprs	500	500															100%	100%		
064-2404-482.19-15	Mileage Reimbursement	200	200	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	10%	0%	0%	80%	100%		
064-2404-482.20-00	Support Services	1,075,800	1,075,800	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%		
064-2404-482.21-00	Employee Recruitment	5,400	5,400	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%		
064-2404-482.22-00	Legal Adv & Publications	-	-															0%	0%		
064-2404-482.23-00	Special Dept Supplies	90,000	90,000	5%	5%	20%	5%	10%	20%	7%	10%	7%	5%	0%	5%	1%	0%	0%	100%		
064-2404-482.23-07	Chemicals	133,000	133,000	0%	0%	0%	0%	1%	9%	0%	0%	80%	0%	0%	10%	0%	0%	0%	100%		
064-2404-482.23-08	Laboratory Supplies	63,000	63,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%		
064-2404-482.23-10	Mechanics Tools	5,000	5,000	5%	5%	20%	5%	10%	20%	7%	10%	7%	5%	0%	5%	1%	0%	0%	100%		
064-2404-482.23-17	Industrial Waste supplies	4,125	4,125	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	10%	80%	0%	0%	0%	100%		
064-2404-482.23-25	Support Dept Supplies	8,450	8,450	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%		
064-2404-482.24-00	Maint Repairs-Land & Bldg	163,000	163,000	10%	2%	20%	10%	8%	20%	8%	10%	10%	0%	0%	0%	2%	0%	0%	100%		
064-2404-482.24-15	Building Maintenance	8,000	8,000	10%	2%	20%	10%	8%	20%	8%	10%	10%	0%	0%	0%	2%	0%	0%	100%		
064-2404-482.25-00	Rent Of Property & Equipmt	11,500	11,500	10%	2%	20%	10%	8%	20%	8%	10%	10%	0%	0%	0%	2%	0%	0%	100%		
064-2404-482.26-00	Radio Comm & Maintenance	2,000	2,000	10%	2%	20%	10%	8%	20%	8%	10%	10%	0%	0%	0%	2%	0%	0%	100%		
064-2404-482.27-00	Other Servcs-Professional	149,600	149,600	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	13%	2.3%	44%	2%	7%	11%	100%		
064-2404-482.27-01	Contract Services	141,500	141,500	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	13%	2.3%	44%	2%	7%	11%	100%		
064-2404-482.27-03	Compliance Monitoring	213,800	213,800	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	13%	2.3%	44%	2%	7%	11%	100%		
064-2404-482.27-04	I.W. Monitoring	10,125	10,125	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	13%	2.3%	44%	2%	7%	11%	100%		
064-2404-482.27-06	Sludge Disposal	162,000	162,000	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	13%	2.3%	44%	2%	7%	11%	100%		
064-2404-482.27-25	Utility Stmt Processing	56,100	56,100	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%		
064-2404-482.27-29	Uniforms	4,500	4,500	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-482.28-00	Dues & Subscription	28,248	28,248	4%	5%	13%	13%	8%	5%	5%	10%	5%	0%	10%	10%	2%	10%	0%	100%		
064-2404-482.28-01	Operating Permits	6,500	6,500	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	0%	0%	100%		
064-2404-482.28-02	Annual Waste Dischrgr Fee	66,000	66,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	0%	0%	100%		
064-2404-482.28-04	Permit Fee	15,000	15,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	0%	0%	100%		
064-2404-482.28-05	NPDES Permit Renewal	-	-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	0%	0%	100%		
064-2404-482.28-06	NPDES Compliance	50,000	50,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	50%	50%	0%	0%	0%	100%		
064-2404-482.29-00	Maint Repairs - Equipment	58,850	58,850	4%	4%	53%	4%	4%	4%	4%	4%	4%	0%	0%	4%	4%	7%				

**CITY OF MANTECA  
SEWER RATE STUDY**

**DRAFT  
MAY 2008**

**EXPENSES AND UNIT ALLOCATIONS  
FISCAL YEAR: FY 2008-2009**

Study Year: 1

ACCOUNT NUMBER	ACCOUNT DESCRIPTION	BUDGET		STUDY NUMBERS	UNIT PROCESS ALLOCATION														Total			
		FY 2008-2009	WHAT IFs		IPS	Primary	Aeration	Secondary Sed.	Filtration	UV Disinfection	DAF	Digestion	Centrifuge	Landfill	Lab	Regulatory	Title 22	Collection System		Admin.		
<b>CAPITAL EXPENDITURES</b>																						
<i>PAY-AS-YOU-GO: Recurring WQCF O&amp;M and Capital Replacement Costs:</i>																						
	IPS	6,300		6,300	100%																100%	
	Primary	33,400		33,400		100%															100%	
	Aeration	26,860		26,860				100%													100%	
	Secondary	3,750		3,750					100%												100%	
	DAF	7,600		7,600						100%											100%	
	Digester	16,200		16,200							100%										100%	
	Filters	17,671		17,671					100%												100%	
	UV	82,070		82,070						100%											100%	
	Title 22	400		400																100%	100%	
	3 Water System	714		714																100%	100%	
	SCADA	12,273		12,273																	100%	
	Lab	-		-										100%		100%					100%	
	Vehicle	48,750		48,750		4%	4%	4%	4%	4%	4%	4%	4%	0%	0%	0%	4%	60%	0%		100%	
	Cogen	-		-													100%				100%	
	Emergency Gen.	6,667		6,667		10%	10%	10%	10%	10%	10%	10%									100%	
	Regulatory	-		-												100%					100%	
	Cooling Facility	-		-																	0%	
	<b>Subtotal Recurring WQCF Costs</b>	<b>262,655</b>		<b>262,655</b>		<b>8,917</b>	<b>36,017</b>	<b>29,477</b>	<b>6,367</b>	<b>20,288</b>	<b>85,353</b>	<b>10,217</b>	<b>18,817</b>	<b>2,617</b>			<b>12,273</b>	<b>3,064</b>	<b>29,250</b>		<b>262,655</b>	
<i>PAY-AS-YOU-GO: Recurring Collection System O&amp;M and Capital Replacement Costs:</i>																						
	Pipe Cleaning Services	\$75,000		75,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	Video Inspection Services	\$30,000		30,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	Pipe Rehab/Point Repair	\$160,000		160,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	Pump Station: Pump Replacement/Upgrade	\$36,000		36,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	Pump Station: VFD Replacement	\$5,000		5,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	ARV Replacement	\$4,000		4,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	Line Extensions	\$0		-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	FOG Program	\$13,625		13,625	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	0	\$0		-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	<b>Subtotal Recurring Collection System Costs</b>	<b>323,625</b>		<b>323,625</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>323,625</b>	<b>-</b>	<b>323,625</b>	
	<b>Subtotal Recurring Capital Costs</b>	<b>586,280</b>		<b>586,280</b>		<b>8,917</b>	<b>36,017</b>	<b>29,477</b>	<b>6,367</b>	<b>20,288</b>	<b>85,353</b>	<b>10,217</b>	<b>18,817</b>	<b>2,617</b>			<b>12,273</b>	<b>3,064</b>	<b>352,875</b>	<b>-</b>	<b>586,280</b>	
<i>DEBT FINANCED: One-Time WQCF Capital Costs</i>																						
	Schedule C	-		-	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
	Northside RAS valve replacement	45,465		45,465	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
	Digester flow meters	30,000		30,000	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
	WQCF security	307,000		307,000	11%	12%	11%	11%	11%	11%	11%	11%	11%	0%	0%	0%	0%	0%	0%	0%	0%	100%
	IPS Sensors & Duct Mods	54,200		54,200	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
	River sample boat	21,650		21,650	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%
	Digester gas equipment	103,000		103,000																		0%
	Biosolids Windrowing	600,000		600,000																		0%
	3W Well	216,000		216,000																		0%
	FOG Receiving Facility	150,000		150,000																		0%
	Hot Water Boiler	110,000		110,000																		0%
	Phase 3 Record Drawings	130,000		130,000																		0%
	utility lobby expansion	25,000		25,000																		0%
	degrit equipment	60,000		60,000																		0%
	Digester Crack	200,000		200,000																		0%
	Primary Tank Scum Skimmers	81,000		81,000																		0%
	Field 11 Irrigation System Extension	90,000		90,000																		0%
	DAF Flights Replacement	60,000		60,000																		0%
	Digester Water Seals	50,000		50,000																		0%
	Dump Truck	120,000		120,000																		0%
	Pavement Repair and Extension	150,000		150,000																		0%
	0	-		-																		0%
	<b>Subtotal One-Time WQCF Capital Costs</b>	<b>2,603,315</b>		<b>2,603,315</b>		<b>87,970</b>	<b>36,840</b>	<b>79,235</b>	<b>33,770</b>	<b>33,770</b>	<b>33,770</b>	<b>33,770</b>	<b>63,770</b>	<b>33,770</b>			<b>21,650</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>458,315</b>	
<i>DEBT FINANCED: One-Time Collection System Capital Costs</i>																						
	Level sensing devices	26,000		26,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	Union Road PS discharge box	35,700		35,700	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	FOG Program	84,770		84,770	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	Curran Grove Hatch Cover	15,000		15,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	36" influent spray-on liner	180,000		180,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	Emergency response equipment	98,600		98,600	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	Lousie Ave sewer rehab	400,000		400,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	Deficient pipelines & structures	804,000		804,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	0	-		-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	0	-		-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	0	-		-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
		-		-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
		-		-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
		-		-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
	<b>Subtotal One-Time Collection System</b>	<b>1,644,070</b>		<b>1,644,070</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>1,644,070</b>	<b>-</b>	<b>1,644,070</b>	



**CITY OF MANTECA  
SEWER RATE STUDY**

**ANNUAL LOADS**

YEAR: **2006**  
 FY 2008-2009 Study Year: 1

**DRAFT  
MAY 2008**

	DAILY AVERAGE				DAYS/ MONTH	MONTHLY TOTALS			
	FLOW MGD	BOD LBS	SS LBS	NITROGEN LBS		FLOW MGD	BOD LBS	SS LBS	NITROGEN LBS
JAN	6.23	17,545	14,338	1,639	31	193.13	543,895	444,478	50,794
FEB	6.04	17,993	15,102	1,648	28	169.25	503,804	422,856	46,134
MAR	6.05	17,654	12,991	1,492	31	187.57	547,274	402,721	46,257
APR	6.18	17,305	15,271	1,423	30	185.26	519,150	458,130	42,691
MAY	6.27	17,938	15,383	1,404	31	194.30	556,078	476,873	43,517
JUN	6.08	19,452	14,438	1,239	30	182.43	583,560	433,140	37,183
JUL	6.22	18,687	15,649	1,430	31	192.79	579,297	485,119	44,315
AUG	6.58	17,092	13,805	1,260	31	203.91	529,852	427,955	39,053
SEP	6.64	21,172	18,505	1,493	30	199.28	635,160	555,150	44,798
OCT	6.53	16,154	15,204	1,710	31	202.40	500,774	471,324	53,003
NOV	6.28	18,156	21,642	1,569	30	188.45	544,680	649,260	47,072
DEC	6.05	16,008	25,934	1,894	31	187.48	496,248	803,954	58,718
<b>Total/Year</b>						<b>2,286.25</b>	<b>6,539,772</b>	<b>6,030,960</b>	<b>553,535</b>

**CITY OF MANTECA  
SEWER RATE STUDY**

Loadings and Unit Allocations  
FY 2008-2009  
Study Year: 1

**DRAFT  
MAY 2008**

	ALLOCATION				STUDY COSTS		COST ALLOCATION BEFORE CAP/DEBT				COST ALLOCATION AFTER CAP/DEBT			
	FLOW	BOD	SS	NITROGEN	BEFORE CAP/DEBT	TOTAL	FLOW	BOD	SS	NITROGEN	FLOW	BOD	SS	NITROGEN
IPS	100%				347,508	444,394	347,508	-	-	-	444,394	-	-	-
Primary		50%	50%		278,660	351,517	-	139,330	139,330	-	-	175,759	175,759	-
Aeration		50%		50%	892,510	1,001,222	-	446,255	-	446,255	-	500,611	-	500,611
Secondary Sed.		50%		50%	713,030	753,166	-	356,515	-	356,515	-	376,583	-	376,583
Filtration	25%		75%		488,763	542,821	122,191	-	366,572	-	135,705	-	407,116	-
UV Disinfection	100%				491,763	610,887	491,763	-	-	-	610,887	-	-	-
DAF			100%		362,397	406,383	-	-	362,397	-	-	-	406,383	-
Digestion			100%		595,593	976,850	-	-	595,593	-	-	-	976,850	-
Centrifuge			100%		496,076	532,462	-	-	496,076	-	-	-	532,462	-
Landfill			100%		115,570	115,570	-	-	115,570	-	-	-	115,570	-
Lab		34%	33%	33%	579,541	579,541	-	197,044	191,249	191,249	-	197,044	191,249	191,249
Regulatory	25%	25%	25%	25%	806,498	840,421	201,625	201,625	201,625	201,625	210,105	210,105	210,105	210,105
Title 22	100%				164,634	167,699	164,634	-	-	-	167,699	-	-	-
Collection System	100%				580,485	933,360	580,485	-	-	-	933,360	-	-	-
Admin.	25%	25%	25%	25%	1,268,567	3,088,462	317,142	317,142	317,142	317,142	772,115	772,115	772,115	772,115
<b>Total</b>					<b>8,181,595</b>	<b>11,344,755</b>	<b>2,225,347</b>	<b>1,657,910</b>	<b>2,785,553</b>	<b>1,512,785</b>	<b>3,274,265</b>	<b>2,232,217</b>	<b>3,787,609</b>	<b>2,050,663</b>
Percentage by Constituent							27%	20%	34%	18%	29%	20%	33%	18%
<b>Annual Loads</b>							<b>2,286.25</b>	<b>6,539,772</b>	<b>6,030,960</b>	<b>553,535</b>	<b>2,286.25</b>	<b>6,539,772</b>	<b>6,030,960</b>	<b>553,535</b>
							<b>MG</b>	<b>LBS</b>	<b>LBS</b>	<b>LBS</b>	<b>MG</b>	<b>LBS</b>	<b>LBS</b>	<b>LBS</b>
<b>Cost per Unit of Load</b>							<b>973.36</b>	<b>0.25</b>	<b>0.46</b>	<b>2.73</b>	<b>1,432.15</b>	<b>0.34</b>	<b>0.63</b>	<b>3.70</b>
							<b>/MG</b>	<b>/LB</b>	<b>/LB</b>	<b>/LB</b>	<b>/MG</b>	<b>/LB</b>	<b>/LB</b>	<b>/LB</b>

Appendix B

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**Eckert Allocated Costs and Service Charges**

**Table B-1**  
**INDUSTRIAL PIPELINE / POND FACILITY**  
**SUMMARY OF TOTAL ANNUAL OPERATIONS AND MAINTENANCE COSTS**  
**(Eckert Cold Storage)**

Major Category	2008 Total	2009 Total	2010 Total	2011 Total	2012 Total
Pump Station Operation and Maintenance	\$9,987	\$10,486	\$11,011	\$11,561	\$12,139
Pond Operation and Maintenance	\$82,900	\$86,921	\$91,139	\$95,562	\$100,201
Wastewater Sample Collection and Analysis	\$19,008	\$19,929	\$20,895	\$21,907	\$22,969
Odor Control	\$7,200	\$7,560	\$7,938	\$8,335	\$8,752
Seasonal Startup and Shutdown Activities	\$4,098	\$4,259	\$4,427	\$4,602	\$4,784
USA Marking	\$1,059	\$1,104	\$1,150	\$1,199	\$1,249
Facilities Replacement Cost	\$63,008	\$66,159	\$69,467	\$72,940	\$76,587
UV Disinfection	\$4,838	\$5,080	\$5,334	\$5,601	\$5,881
<b>Subtotal</b>	<b>\$192,098</b>	<b>\$201,498</b>	<b>\$211,361</b>	<b>\$221,708</b>	<b>\$232,563</b>
Administrative Charge @ 10% (NPDES Reporting, coordination, billing, database, filing, etc.)	\$19,210	\$20,150	\$21,136	\$22,171	\$23,256
<b>Total</b>	<b>\$211,308</b>	<b>\$221,648</b>	<b>\$232,497</b>	<b>\$243,878</b>	<b>\$255,820</b>

**INDUSTRIAL PIPELINE / POND FACILITY  
ANNUAL PUMP STATION OPERATION AND MAINTENANCE COSTS**

	Value	Cost/Unit	2008 Total	2009 Total	2010 Total	2011 Total	2012 Total
<i>Eckert Pump Station</i>							
Pump Operation <sup>(1)</sup>	22,237 kw-hr	\$0.19	\$4,225	\$4,436	\$4,658	\$4,891	\$5,136
Wastewater Sample Station and Instrumentation Electricity	1,000 kw-hr	\$0.19	\$190	\$200	\$209	\$220	\$231
Pump Station O&M <sup>(2)</sup>	40 hours	\$34.31	\$1,372	\$1,441	\$1,513	\$1,589	\$1,668
Vehicle	40 hours	\$9.81	\$392	\$412	\$433	\$454	\$477
Pump Station Spare Parts <sup>(3)</sup>	2% of purchase	\$600.00	\$600	\$630	\$662	\$695	\$729
<i>Pond Pump Station</i>							
Pump Operation <sup>(1)</sup>	5,498 kw-hr	\$0.19	\$1,045	\$1,097	\$1,152	\$1,209	\$1,270
Wastewater Sample Station and Instrumentation Electricity	1,000 kw-hr	\$0.19	\$190	\$200	\$209	\$220	\$231
Pump Station O&M <sup>(2)</sup>	40 hours	\$34.31	\$1,372	\$1,441	\$1,513	\$1,589	\$1,668
Pump Station Spare Parts <sup>(3)</sup>	2% of purchase	\$600.00	\$600	\$630	\$662	\$695	\$729

Total			\$9,987	\$10,486	\$11,011	\$11,561	\$12,139
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Notes:

<sup>(1)</sup> Costs based on 33.6MG of flow

<sup>(2)</sup> Pump, SCADA, Electrical, and other repairs.

<sup>(3)</sup> Based on 2% of pump replacement costs.

**INDUSTRIAL PIPELINE / POND FACILITY  
ANNUAL WASTEWATER SAMPLE COLLECTION AND ANALYSIS COSTS**

	Value	Cost/Unit	2008 Total	2009 Total	2010 Total	2011 Total	2012 Total
<b>Eckert</b>							
<i>Daily Testing</i>							
Biochemical Oxidation Demand (BOD)	181 samples	\$29.00	\$5,249	\$5,511	\$5,787	\$6,076	\$6,380
Chemical Oxidation Demand (COD)	181 samples	\$15.00	\$2,715	\$2,851	\$2,993	\$3,143	\$3,300
Suspended Solids	181 samples	\$18.00	\$3,258	\$3,421	\$3,592	\$3,772	\$3,960
Settleability	181 samples	\$10.00	\$1,810	\$1,901	\$1,996	\$2,095	\$2,200
DO/Ph <sup>(1)</sup>	60 Hours	\$34.31	\$2,070	\$2,153	\$2,239	\$2,329	\$2,422
<i>Monthly Testing</i>							
Total Dissolved Solids (TDS)	6 samples	\$27.00	\$162	\$170	\$179	\$188	\$197
Total Nitrogen (TN)	6 samples	\$81.00	\$486	\$510	\$536	\$563	\$591
<b>Pond</b>							
<i>Weekly Testing</i>							
DO/Ph <sup>(2)</sup>	26 Hours	\$34.31	\$892	\$928	\$965	\$1,003	\$1,044
<i>Bi-Weekly Testing</i>							
Settleability <sup>(3)</sup>	26 samples	\$10.00	\$260	\$273	\$287	\$301	\$316
Total Nitrogen <sup>(3)</sup>	26 samples	\$81.00	\$2,106	\$2,211	\$2,322	\$2,438	\$2,560
Total			\$19,008	\$19,929	\$20,895	\$21,907	\$22,969

Notes:

<sup>(1)</sup> Based on 20 minutes per sample.

<sup>(2)</sup> Based on 30 minutes per sample.

<sup>(3)</sup> Time to collect sample included in 30 minutes for DO/Ph test.

**INDUSTRIAL PIPELINE / POND FACILITY  
ANNUAL POND OPERATION AND MAINTENANCE COSTS**

	Value	Cost/Unit	2008 Total	2009 Total	2010 Total	2011 Total	2012 Total
Pond Filling/ Draining	180 hours	\$34.31	\$6,176	\$6,423	\$6,680	\$6,947	\$7,225
Pond Berm Maintenance <sup>(1)</sup>	40 hours	\$34.31	\$1,372	\$1,427	\$1,484	\$1,544	\$1,606
Liner Maintenance <sup>(2)</sup>	40 hours	\$34.31	\$1,372	\$1,427	\$1,484	\$1,544	\$1,606
Aerator Operation - Peak <sup>(3)</sup>	130,089 kw-hr	\$0.19	\$25,292	\$26,556	\$27,884	\$29,279	\$30,742
Aerator Operation - Partial Peak <sup>(3)</sup>	151,770 kw-hr	\$0.12	\$17,534	\$18,411	\$19,331	\$20,298	\$21,313
Aerator Operation - Off Peak <sup>(3)</sup>	238,496 kw-hr	\$0.10	\$23,722	\$24,908	\$26,154	\$27,461	\$28,834
Aerator Maintenance (Operator Time)	100 hours	\$34.31	\$3,431	\$3,568	\$3,711	\$3,859	\$4,014
Aerator Maintenance (Spare Parts)	2% of purchase	\$4,000.00	\$4,000	\$4,200	\$4,410	\$4,631	\$4,862

Total			\$82,900	\$86,921	\$91,139	\$95,562	\$100,201
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Notes:

- <sup>(1)</sup> Includes weed control, removing gophers, repairing rain damage to slope.
- <sup>(2)</sup> Includes repairing tears, rips, and cuts.
- <sup>(3)</sup> Usage based on running the aerators 21 hours a day and 18 out of 26 weeks.  
Aerators are shut down during the irrigation cycles.

**INDUSTRIAL PIPELINE / POND FACILITY  
ANNUAL CHEMICAL ADDITION COSTS**

	Value	Cost/Unit	2008 Total	2009 Total	2010 Total	2011 Total	2012 Total
Odor Control Chemical <sup>(1)</sup>	3 Drums	\$2,400.00 <sup>(2)</sup>	\$7,200	\$7,560	\$7,938	\$8,335	\$8,752
Total			\$7,200	\$7,560	\$7,938	\$8,335	\$8,752

Notes:

<sup>(1)</sup> Based on the usage of three 55-gallon drums per year at the pond.

<sup>(2)</sup> Costs/Unit based on recent purchase.

**INDUSTRIAL PIPELINE / POND FACILITY  
SEASONAL STARTUP AND SHUTDOWN COSTS**

	Value	Cost/Unit	2008 Total	2009 Total	2010 Total	2011 Total	2012 Total
<i>Startup Activities</i>							
Pipeline Flushing <sup>(1)</sup>	4 hours	\$34.31	\$137	\$143	\$148	\$154	\$161
Water <sup>(6)</sup>	267 hcf	\$1.02	\$274	\$282	\$290	\$299	\$308
Equipment Startup Preparation <sup>(2)</sup>	8 hours	\$34.31	\$274	\$285	\$297	\$309	\$321
Vehicle (City Truck)	12 hours	\$9.81	\$118	\$124	\$130	\$136	\$143
<i>Shutdown Activities</i>							
Pipeline Flushing <sup>(3)</sup>	16 hours	\$34.31	\$549	\$571	\$594	\$618	\$642
Water <sup>(6)</sup>	534 hcf	\$1.66	\$887	\$914	\$941	\$969	\$998
Equipment Winterization	8 hours	\$34.31	\$274	\$285	\$297	\$309	\$321
Vehicle (City Truck)	24 hours	\$9.81	\$235	\$245	\$255	\$265	\$275
Pond Solids Removal <sup>(4)</sup>	16 hours	\$34.31	\$549	\$571	\$594	\$618	\$642
Vacuum Truck <sup>(5)</sup>	4 hours	\$200.00	\$800	\$840	\$882	\$926	\$972
Total			\$4,098	\$4,259	\$4,427	\$4,602	\$4,784

Notes:

- (1) Time required to flush pipeline once.
- (2) Time required at pump station to make sure pumps and SCADA are operational at beginning of the season.
- (3) Time required to flush pipeline twice.
- (4) Time required to clean pond liner with hose and wash solids to pump inlet.
- (5) Vactor truck time required to remove solids from pump inlet.
- (6) Water costs to flush pipeline based on 3" meter.
  - Unit Cost up to 180hcf = \$0.93
  - Unit Cost between 180hcf and 300hcf = \$1.22
  - Unit Cost for over 300hcf = \$2.45

**INDUSTRIAL PIPELINE / POND FACILITY  
ANNUAL USA MARKING COSTS**

	Value	Cost/Unit	2008 Total	2009 Total	2010 Total	2011 Total	2012 Total
USA Marking <sup>(1)</sup>	24 hours	\$34.31	\$823	\$856	\$891	\$926	\$963
Vehicle	24 hours	\$9.81	\$235	\$247	\$260	\$273	\$286
Total			\$1,059	\$1,104	\$1,150	\$1,199	\$1,249

Notes:

<sup>(1)</sup> Estimate based on 2 hours required per USA marking and 1 USA marking per month

**INDUSTRIAL PIPELINE / POND FACILITY  
FACILITIES REPLACEMENT COSTS**

Facility	Equipment	Construction Costs	Service Life	Annual Replacement Cost 2008	Annual Replacement Cost 2009	Annual Replacement Cost 2010	Annual Replacement Cost 2011	Annual Replacement Cost 2012
Eckert Pump Station <sup>(1)</sup>	Pumps	\$30,000	10	\$3,000	\$3,150	\$3,308	\$3,473	\$3,647
	Piping & Gate Valves	\$787,000	40	\$19,675	\$20,659	\$21,692	\$22,776	\$23,915
Pond Liner	Liner	\$200,000	15	\$13,333	\$14,000	\$14,700	\$15,435	\$16,207
Pond <sup>(2)</sup>	Aerators	\$200,000	10	\$20,000	\$21,000	\$22,050	\$23,153	\$24,310
ARV's <sup>(3)</sup>	Air Valves	\$60,000	15	\$4,000	\$4,200	\$4,410	\$4,631	\$4,862
Pond Pump Station <sup>(4)</sup>	Pumps	\$30,000	10	\$3,000	\$3,150	\$3,308	\$3,473	\$3,647
Total				\$63,008	\$66,159	\$69,467	\$72,940	\$76,587

Notes:

<sup>(1)</sup> Costs based on 2 pumps at \$15,000 per pump.

<sup>(2)</sup> Costs based on 10 aerators at \$20,000 per aerator.

<sup>(3)</sup> Costs based on 30 ARV's at \$2,000 per ARV.

<sup>(4)</sup> Costs based on 2 pumps at \$15,000 per pump.

**INDUSTRIAL PIPELINE / POND FACILITY  
ADDITIONAL COST TO OPERATE UV SYSTEM**

	Value	Cost/Unit	2008 Total	2009 Total	2010 Total	2011 Total	2012 Total
UV Disinfection <sup>(3)</sup>	33.6 MG <sup>(2)</sup>	\$144.00 <sup>(1)</sup>	\$4,838	\$5,080.32	\$5,334.34	\$5,601.05	\$5,881.11
<b>Total</b>			\$4,838	\$5,080	\$5,334	\$5,601	\$5,881

Notes:

- <sup>(1)</sup> Cost/Unit calculated from actual UV power consumption per MG multiplied by PG&E E-19 rates.
- <sup>(2)</sup> Value of 33.6 MG based on observed flow.
- <sup>(3)</sup> UV cost is a result of having to send wastewater through the UV system that would otherwise be applied to land.

Appendix C

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## WQCF Connection Fee Memo

# Memorandum

To: Phil Govea, City of Manteca  
From: Georgette Aronow  
CC: Suzanne Mallory, City of Manteca  
Date: September 24, 2008  
RE: Revised Draft Connection Fee Update for WQCF Phase III Sewer Project

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In 2003 the City of Manteca adopted a fee component for the Sewer connection fee that was related to the Phase III improvements to the Wastewater Quality Control Facility (WQCF). At that time the cost of the project was estimated at approximately \$46 million. It was estimated at the time that the funding would come from the following sources:

State Grants	\$8.0 million
City of Lathrop	\$6.8 million
City of Manteca	<u>\$31.2 million</u>
Total	\$46.0 million

To pay for its share of the construction project the City of Manteca issued revenue bonds in 2003. It was assumed that the revenue bonds would be repaid by existing customers, through monthly service charges, and by new development through the payment of connection fees.

Based on engineering analyses, it was determined that approximately 48.5 percent of the project would benefit existing users and 51.5 percent of the project would benefit future users. **Table 1** shows the calculation of the fee per EDU, which includes interest costs, that was adopted in 2003.

The actual costs of the WQCF Upgrade exceeded the estimated cost by approximately \$16.6 million. The City is currently planning on issuing additional revenue bonds to pay for the additional projects, estimated at \$18.65 million.

**Table 1**  
**City of Manteca**  
**Phase III Connection Fee Analysis**  
**Sewer Treatment Plant Phase III Cost including Cost of Capital**  
**& Calculated Cost per EDU**  
**Assuming Revenue Bond Funding**

ITEM	Assumption	Phase 3 Original COST
Total Project Cost		\$31,238,000
Capitalized Interest		\$1,500,000
<b>Subtotal</b>		<b>\$32,738,000</b>
<b>Interest Cost</b>	~5%, 30 Years	<b>\$40,158,511</b>
<b>TOTAL COST</b>		<b>\$72,896,511</b>
Additional Capacity Added (GPD) [1]		2,559,000
Amount Allocated to Existing Development [2]	48.5%	\$35,354,808
Amount Allocated to New Development	51.5%	\$37,541,703
<b>Cost per Gallon of Wastewater (Alloc. To New Dev.)</b>		<b>\$14.67</b>
Gallons per EDU		270
<b>Cost per EDU</b>		<b>\$3,961</b>

[1] Excluding the 14.7% of capacity allocated to the City of Lathrop.  
[2] Funded through the collection of sewer rate charges.

**Table 2**  
**City of Manteca**  
**Phase III Connection Fee Analysis Update**  
**WQCF Phase III Cost including Cost of Capital**  
**& Calculated Cost per EDU**  
**Calculated Fee for the Original Cost Estimate plus Additional Project Costs**

ITEM	Assumption	Phase 3 Original COST	Phase 3 Additional COST	Total
Total Project Cost		\$31,238,000	\$18,651,000	\$49,889,000
Capitalized Interest		\$1,500,000		
<b>Subtotal</b>		<b>\$32,738,000</b>	<b>\$18,651,000</b>	<b>\$51,389,000</b>
<b>Interest Cost</b>		<b>\$40,158,511</b>	<b>\$21,998,245</b>	<b>\$62,156,757</b>
<b>TOTAL COST</b>		<b>\$72,896,511</b>	<b>\$40,649,245</b>	<b>\$113,545,757</b>
Additional Capacity Added (GPD) [1]		2,559,000	2,559,000	
Amount Allocated to Existing Development [2]	48.5%	\$35,354,808	\$19,714,884	\$55,069,692
Amount Allocated to New Development	51.5%	\$37,541,703	\$20,934,361	\$58,476,065
<b>Cost per Gallon of Wastewater (Alloc. To New Dev.)</b>		<b>\$14.67</b>	<b>\$8.18</b>	<b>\$22.85</b>
Gallons per EDU		270	250	
<b>Cost per EDU</b>		<b>\$3,961</b>	<b>\$2,045</b>	<b>\$6,006</b>
<b>Assumption</b>				
<b>Rate</b>		<b>5%</b>	<b>6%</b>	
<b>Term</b>		<b>30 years</b>	<b>30 years</b>	

"rev\_cost"

[1] Excluding the 14.7% of capacity allocated to the City of Lathrop.  
[2] Funded through the collection of sewer rate charges.

In the above tables the costs that are allocated to new development are divided by the total new capacity added, excluding Lathrop's share of the capacity, to determine a cost per gallon of wastewater.

The cost per gallon of wastewater is multiplied by the number of gallons per equivalent dwelling unit (EDU), which in 2003 was assumed to be 270 gallons per day (GPD), but in 2008 has been revised to 250 GPD. For the Additional Cost component the fee is calculated at \$2,045 per EDU. This assumes bonds can be issued at a maximum of a 6 percent interest rate for 30 years.

### **FEE PER EDU**

**Table 3** shows the EDUs for residential and non-residential land uses. The change in gallons per day for very low density and low density land uses from 270 gpd to 250 gpd results in slightly different EDU factors in 2008 than in 2003.

These EDUs are then applied to the cost per EDU to determine the fee per EDU for each land use as shown in **Table 4**. Residential fees are per unit and non-residential fees are per 1,000 square feet.

**Table 3**  
**City of Manteca**  
**Phase III Connection Fee Analysis**  
**Equivalent Dwelling Units (EDUs)**

Land Use	Unit Generation Factors (gpad)	Density (dwelling units/acre)	Floor to Area Ratio (FAR)	2003 Phase III Connection Fee Analysis				2008 Phase III Connection Fee Analysis			
				Average Gallons		Dwelling Unit Equivalents		Average Gallons		Dwelling Unit Equivalents	
				Per D.U.	Per 1,000 sq.ft.	Per D.U.	Per 1,000 sq.ft.	Per D.U.	Per 1,000 sq.ft.	Per D.U.	Per 1,000 sq.ft.
<b>Residential</b>											
Very Low Density	650	2		270		1.00		250		1.00	
Low Density	1,625	5		270		1.00		250		1.00	
Medium Density	2,025	9		225		0.83		225		0.90	
High Density	3,825	17		225		0.83		225		0.90	
<b>Commercial</b>											
Office Professional	1,330		0.30		102		0.37695		102	0.40710	
Neighborhood Community Commercial	1,120		0.23		112		0.41404		112	0.44716	
Business/Visitor Services	1,120		0.23		112		0.41404		112	0.44716	
General Commercial	1,120		0.23		112		0.41404		112	0.44716	
Commercial Recreation	1,120		0.23		112		0.41404		112	0.44716	
Light Industrial	2,010		0.40		115		0.42725		115	0.46143	
Heavy Industrial	2,010		0.40		115		0.42725		115	0.46143	

gpad: gallons per acre per day

"EDU Factors"

Source: City of Manteca and Nolte Associates

**Table 4**  
**City of Manteca**  
**WQCF Phase III Connection Fee Analysis**  
**Phase III Calculated Connection Fees**  
**Assuming Revenue Bond Funding**

Item	2003			2008			Total
	EDU Factors	Original Cost per EDU	Fee per EDU	EDU Factors	Additional Cost per EDU	Fee per EDU	
<b>FEE PER EDU</b>		<b>\$3,961</b>			<b>\$2,045</b>		
<b>LAND USE</b>							
	<i>Per Unit</i>		<i>Per Unit</i>	<i>Per Unit</i>		<i>Per Unit</i>	<i>Per Unit</i>
<b><u>Residential</u></b>							
Very Low Density	1.0000		\$3,961	1.0000		\$2,045	<b>\$6,006</b>
Low Density	1.0000		\$3,961	1.0000		\$2,045	<b>\$6,006</b>
Medium Density	0.8333		\$3,301	0.9000		\$1,841	<b>\$5,141</b>
High Density	0.8333		\$3,301	0.9000		\$1,841	<b>\$5,141</b>
	<i>Per 1,000 sqft</i>		<i>Per 1,000 sqft</i>	<i>Per 1,000 sqft</i>		<i>Per 1,000 sqft</i>	<i>Per 1,000 sqft</i>
<b><u>Commercial</u></b>							
Office Professional	0.37695		\$1,493	0.40710		\$833	<b>\$2,326</b>
Neighborhood Community Commercial	0.41404		\$1,640	0.44716		\$914	<b>\$2,554</b>
Business/Visitor Services	0.41404		\$1,640	0.44716		\$914	<b>\$2,554</b>
General Commercial	0.41404		\$1,640	0.44716		\$914	<b>\$2,554</b>
Commercial Recreation	0.41404		\$1,640	0.44716		\$914	<b>\$2,554</b>
Light Industrial	0.42725		\$1,692	0.46143		\$944	<b>\$2,636</b>
Heavy Industrial	0.42725		\$1,692	0.46143		\$944	<b>\$2,636</b>

"Fee\_EDU\_Rev"  
2008 Connection Fee Model 3.xls