

CITY OF COLFAX SEWER RATE STUDY

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Prepared for:

**City Council
City of Colfax**

**By
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Table of Contents

I. EXECUTIVE SUMMARY	2
II. INTRODUCTION.....	5
III. EQUIVALENT DWELLING UNIT (EDU) SCHEDULE, HISTORY, AND USE IN RATE CALCULATIONS.....	6
A. Equivalent Dwelling Units.....	6
B. Monthly Sewer Rate Calculations	7
IV. WASTEWATER TREATMENT PLANT SYSTEM (WWTP)	7
Background and History	7
Maintenance and Operation Costs.....	8
Capital Costs Related to New Title 22 Plant, Phase 1, and Pond Liner Phase 2	9
Additional Costs WWTP.....	9
Current Revenues	9
Current and Projected Cost and Revenue Demands	10
Additional Grant Funding Efforts	11
Conclusions and Recommendations.....	11
V. SEWER COLLECTION SYSTEM (SCS), not including lift stations.....	12
Background and History	12
Maintenance and Operation Costs.....	14
Costs Related to Sewer Collection System	14
Additional Costs Sewer Collection System.....	14
Current Revenues	14
Current and Projected Cost and Revenue Demands	15
Additional Grant Funding Efforts	16
Conclusions and Recommendations.....	17
VI. SEWER LIFT STATIONS AND FORCE MAINS (LS)	17
Background and History	17
Maintenance and Operation Costs.....	18
Capital Costs Related To Lift Stations	19
Current Revenues	19
Current and Projected Cost and Revenue Demands	20
Additional Grant Funding Efforts	20
Conclusions and Recommendations.....	21

TABLE

- 1** **7-year Projection of Monthly Rates Per EDU**

APPENDIX

- A** **1. WWTP, M & O Costs**
2. WWTP, Capital Cost and Proposed Rate Total System
- B** **Collection System Rate Study**
- C** **Lift Stations**
1. Operating costs
2. Preliminary Summary of Capital Improvement Costs
3&4. Non-School Subsystem Capital Cost breakdown
5. School Subsystem Capital Cost breakdown
6. Lift Station Capital Rate by Subsystem

I. EXECUTIVE SUMMARY

General

The City has three major sewer infrastructure systems that it maintains and operates. They are:

1. The wastewater treatment plant system (WWTP);
2. The sewer collection system (SCS) not including lift stations/force mains; and,
3. The sewer lift stations and their force mains (LS).

The City's current 2007/08 normal maintenance and operation costs exceed the amount of revenue generated by the monthly sewer service charges collected for each of the above systems.

In addition to the normal maintenance and operation costs, the City is required because of State and Federal requirements to implement new maintenance and operation (M&O) procedures and to construct improvements to its WWTP, SCS, and LS. The capital improvements required are needed to avoid potential State fines for violation of required standards.

To fund the required capital improvements the City in addition to grants obtained and applied for has obtained loans and will obtain additional loans to finance the improvements. The loans help to distribute one time capital improvements over time that are to be repaid through user fees of the system.

In order to pay for the increases in M&O costs and required capital improvements, it is necessary that the sewer service charges relative to each of the three major sewer system infrastructure components be increased.

The Report includes the analysis of the systems costs and connected users and proposes rates to keep the systems financially sound and to be in compliance with State and Federal requirements.

Recommendation

Based upon an analysis of system costs and including other assignable direct and indirect costs it is recommended that the City Council call for a public hearing after proper notification to sewer system users with the intent relative to each major infrastructure system rate as follows and as summarized in Report Table 1:

WWTP Major Infrastructure System Rate:

1. Establish a new base rate for the WWTP system for inside City system users of \$87.00/EDU/month.
2. Establish a new base rate for the WWTP system for outside City system users of \$87.46/EDU/month.
3. Continue the schedule that the minimum billing rate to any one user shall not be less than the base billing rate for 1 EDU;
4. Direct the City Manager, City Finance Officer, City Engineer, and Director of Public Works to provide the City Council an annual report by May 1st of each year as to

recommendations concerning system costs and changes needed in EDU basis, rates, or other matters related to the City's sewer system costs and M&O.

The proposed rate increase is for areas within the existing City limits needs and those few users currently outside the City limits. The City Title 22 WWTP currently under construction is sized to serve the existing City growth anticipated over the next 20 years.

Some general items of cost as related to revenue and rates are that under the proposed EDU schedule and 2008/09 budget:

1. Each \$1.00/EDU of monthly WWTP base yields \$13,300 of annual revenue.

Sewer Collection Major Infrastructure System Rate:

1. Establish a new base rate for the collection system for users of \$12.40/EDU/month.
2. Continue the schedule that the minimum billing rate to any one user shall not be less than the base billing rate for 1 EDU;
3. Direct the City Manager, City Finance Officer, City Engineer, and Director of Public Works to provide the City Council an annual report by May 1st of each year as to recommendations concerning sewer system costs and changes needed in EDU basis, rates, or other matters related to the City's sewer system costs and M&O.

The proposed rate increase is for all system users.

Some general items of cost as related to revenue and rates are that under the proposed EDU schedule and 2008/09 budget:

1. Each \$1.00/EDU of monthly collection rate yields \$13,300 of annual revenue.

Sewer Lift Station Major Infrastructure System Rate

1. Establish a new monthly rate for lift station sub system users of \$41.89/EDU for the Non-School subsystem users and \$78.02/EDU for the School subsystem users.
2. Continue the schedule that the minimum billing rate to any one user shall not be less than the base billing rate for 1 EDU;
3. Direct the City Manager, City Finance Officer, City Engineer, and Director of Public Works to provide the City Council an annual report by May 1st of each year as to recommendations concerning sewer lift station subsystem costs and changes needed in EDU basis, rates, or other matters related to the City's sewer system costs and M&O.

The proposed rate increase is for areas within the existing City limits needs and those few users currently outside the City limits.

Some general items of cost as related to revenue and rates are that under the proposed EDU schedule and 2008/09 budget:

1. Each \$10.00/EDU of equivalent monthly lift station user charge yields the following annual revenue:

<u>Subsystem</u>	<u>Annual revenue/\$1.00 lift station rate</u>
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a. School subsystem	\$25,080
b. Non school subsystem	\$ 7,356

II. INTRODUCTION

The City's current fiscal year 2007/08 maintenance and operation (M & O) costs and capital expenditures for all sewer infrastructure systems will exceed the current user revenues from charges and result in a substantial deficit unless rates are increased. Currently total system capital improvements to meet Federal and State mandated requirements are estimated to cost approximately \$15,700,000. Maintenance and operation cost projections for all sewer infrastructure systems for the next fiscal year, 2008/09 will exceed the amount of revenue generated assuming current monthly sewer service charges unchanged by \$337,000, which leaves no funds from rates for capital improvements. By the end of this fiscal year on June 30, 2008, it is estimated the total sewer fund balance for all systems including maintenance, operation and capital improvements will be +\$87,571 and by the end of next fiscal year on June 30, 2009, they would be **\$336,875 in the red if no rate increase is implemented.**

The City has no other fund revenues available including general fund revenues either existing or projected that are or would be available to make up any short fall of this magnitude in sewer system funding.

The City has three major sewer infrastructure systems that it maintains and operates. They are:

1. The wastewater treatment plant system (WWTP);
2. The sewer collection system (SCS) not including lift stations/force mains; and,
3. The sewer lift stations and their force mains (LS).

The City generates revenue for operating, maintaining and capital improvements of the infrastructure systems from three separate monthly additive fees as follows:

1. For WWTP: Monthly user fee currently \$60 per equivalent dwelling unit (EDU) plus for new building permits, a one time sewer impact/connection fee charged at building permit issuance currently \$6,741/EDU;
2. For SCS, monthly equivalent fee currently \$6.20 per EDU; and,
2. For LS, monthly fee currently \$13.20 to \$17.47 per EDU for areas connected to lift stations.

In addition, outside City users currently pay an additional \$0.46 per EDU per month to pay for their share of a 1978 General Obligation Bond that paid for construction in 1978 of certain sewer infrastructure facilities.

The City has obtained State and Federal grant and loan funding for construction of the WWTP improvements currently under construction. However, this additional funding does not cover all costs associated with the improvements.

The City's revenues from sewer rates will require substantial increases in order to keep pace with the system needs and requirements imposed upon the City by State and Federal laws.

Because of the lead time needed to meet legal notification times required to adopt monthly sewer service rate increases, a rate increases, at the earliest, could not become effective until July 1, 2008, which is also the beginning of the next fiscal year.

The remainder of this report contains background information and calculations in support of a recommended rate changes as follows relative to each of the three major infrastructure sewer systems:

- A. System EDU Schedule, History, and Use in Rate Calculations, applicable to all three major sewer systems.
- B. Background and History
- C. Maintenance & Operation Budget Costs
- D. Capital Revenues
- E. Current and Projected Revenue Demands
- F. Additional Grant Funding Efforts
- G. Conclusions and Recommendations
- I. Monthly Sewer System Rate Components
- J. Other Sewer Agency's Monthly Sewer System Rates
- K. Conclusions

III. EQUIVALENT DWELLING UNIT (EDU) SCHEDULE, HISTORY, AND USE IN RATE CALCULATIONS

A. *Equivalent Dwelling Units.*

City Code Chapter 13, effective November 2002

The City adopted a new EDU Schedule after study of the City's system and user characteristics. The schedule provides the sewer EDU's to be assigned to a property based on different types of uses connected.

EDU Development

EDU's are determined by equating in general the amount of wastewater that is estimated to be discharged to the sewer system on the average by a type of use as compared to an average single-family house. For certain types of uses, the EDU's are increased because of the strength of wastewater discharged (for example, industrial uses).

The minimum EDU's assigned to any property connected to the sewer system is one (1) EDU.

Totalling all the EDU's connected and using a major infrastructure system is then used to calculating sewer rates as outlined below.

Current EDU by Major System

The total billable EDU's, as adjusted for next FY 2008/09, assigned to each major system are as follows:

- 1. WWTP 1108 EDU's

2.	SCS	1108 EDU's
3.	LS	
	a. Non School LS	290 EDU's
	b. School LS	61.3 EDU's

B. Monthly Sewer System Rate Calculations

A monthly rate requires:

1. For each major system, the total annual system cost is determined including: the amount to be set aside to repay other fund money borrowed to support the sewer system; plus the amount to be provided in replacement reserve and contingency reserve; plus the amount for repayment of any loans the City has or proposes to obtain and use.
2. The total of all EDU's connected to the system is made which determines total number of billing EDU's to be charged for the system costs.
3. The base rate/EDU is calculated by taking the total costs determined above and dividing this total cost by the total number of billable EDU's.
4. Each sewer billing user's total monthly rate would then be calculated by multiplying their EDU's times the applicable system base rates.
5. The minimum billing rate is one for any property connected to the system (e.g. if the calculated EDU total for a particular property billing is 0.7 EDU's, the billing would be based on 1 EDU).

IV. WASTEWATER TREATMENT PLANT SYSTEM (WWTP)

Background and History

1. The City constructed a new WWTP in 1978, at the current location, to replace an old plant located near Mink Creek Subdivision west of S. Auburn Street. The WWTP was financed with a USDA grant and 40-year loans with repayment using City user fees and a portion on the tax rate to repay a general obligation bond. The plant provided biological treatment and used land irrigation for disposal.
2. In June 2001, the State Regional Water Quality Control Board (RWQCB) approved a new discharge permit (NPDES) and a Cease and Desist Order (C&D) for the City. The requirements of these actions required the City to prepare reports, develop plans and construct improvements to meet the new requirements and order including a time schedule. Among other requirements the schedule required that the City have either a new land disposal system or a tertiary treatment plant on line by June 14, 2006. The City proceeded to prepare reports and environmental documents and determined two major findings:
 - a. That the new plant should be a tertiary treatment plant with Title 22 equivalent discharge; and,
 - b. That because of the State time schedule and since the EIR was not approved until October 2004, it would not be possible to complete the design and construction of the new Title 22 plant by June 14, 2006. The City engaged the services of Don Snelling, a Grade V WWTP operator and expert, who developed a plan for an interim plant that would produce tertiary treated water for discharge at a relatively

low cost and could be built and constructed using most of the existing 1978 WWTP facilities and placed on line prior to June 14, 2006.

In August 2005, prior to the RWQCB June 14, 2006 date, the City completed and commenced discharging tertiary treated water. The City obtained from the RWQCB an extension to December 14, 2006 to complete additional enhancements to the interim tertiary WWTP. These additional enhancements were completed by December 14, 2006.

After many hearings and reports, the City was determined by the RWQCB to be in compliance with the 2001 NPDES and C&D order.

The total cost of the interim tertiary plant and related items was approximately \$1,500,000, paid for entirely from sewer user fees and sewer impact connection fees.

This interim tertiary expense completely depleted the City funds available for the WWTP project and required the City to borrow funds for this work. However, this interim tertiary plant allowed the City to meet the RWQCB requirements and avoid substantial daily fines.

3. In September 2007, the City commenced construction of the new Title 22 WWTP Phase 1 at a construction cost of \$7,849,000. In addition to the construction cost were planning, engineering, administration, and construction management costs bringing the current estimated total cost of Phase 1 to \$9,687,000.

The City has obtained a State Grant of \$2,000,000 and a Loan of \$7,485,685 to help fund this project.

4. In October 2007, the City obtained a new NPDES permit and C&D order that requires relative to the WWTP, the City complete and have on line the new Title 22 plant by October 2008, discontinue use of the interim tertiary plant, line the large storage Pond 3 by November 2009 (the Phase 2 WWTP Project).
5. The Title 22 Plant is currently under construction and on schedule to be in operation by October 2008. The Phase 2, Pond 3 liner is currently being designed and is scheduled to go to bid later this year with construction and completion by November 2009.

The current Phase 2 estimated construction and applicable related costs totals \$2,624,006.

Maintenance and Operation Costs

Current fiscal year 2007/08 WWTP maintenance and operation expenses are estimated to total \$810,216 and are projected to increase to \$993,200 in 2008/09 and then be \$839,497 in 2009/10.

The significant increase in cost for M&O in 2008/09 is because: the City will be operating at times both the existing interim WWTP and the new Title 22 WWTP; have substantial start up training for the plant operators; includes the addition of an additional WWTP operator; and, will

require substantial additional reports and documents to be submitted to the RWQCB as a result of the new NPDES permit and C&D order.

The decrease from 2008/09 to the 2009/10 year is because: only the new Title 22 plant will be in operation; there will be a significant reduction in chemical material and supply requirements; and it is estimated the contract services help of the Grade V operator will no longer be needed.

Appendix A1 includes a breakdown of the M&O expense projections for the current fiscal year 2007/2008 through fiscal years to 2013/14.

Capital Costs Related to New Title 22 Plant, Phase 1, and Pond Liner Phase 2

Current fiscal year 2007/08 WWTP capital improvements are estimated to total \$10,139,645 and are estimated to total \$4,800,175 in 2008/2009 which represents the construction of the Phase 1 and Phase 2 WWTP improvements.

In subsequent years, the projected costs vary from \$545,663/FY to \$666,236 which represent loan repayment amounts.

Appendix A2 includes a breakdown of the Capital Cost expense projections for the current fiscal year 2007/2008 through fiscal years to 2013/14.

Additional Costs WWTP

Additional costs associated with the WWTP are the requirement to provide a loan reserve in accordance with State Loan requirements and the need to provide a depreciation reserve in order to provide for future improvements.

The need for a depreciation reserve amount is because the State is required to review and issue a new NPDES discharge every five years. Thus, in 2012 the City will be getting a new discharge permit. Because of the continual changing and upgrading of discharge treatment required, it is necessary for the City to commence acquiring some funds either to replace or upgrade facilities in the future

Appendix A2 includes a breakdown of the SRF Loan reserve and Depreciation Reserves expense projections for the current fiscal year 2007/2008 through fiscal years to 2013/14.

Current Revenues

The City has four sources of revenue potentials to fund the WWTP. They are:

1. Monthly sewer service charge to connected users;
2. Sewer impact fees--a one time fee collected when a new building or more intense use per EDU is connected to the sewer system;
3. Grants and loans from public or private agencies or institutions;
4. General Obligation Bond

Monthly sewer service charge

The monthly service charge can be used to fund M&O costs, capital costs, and additional costs associated with the WWTP.

The current monthly sewer charge is \$60/month/EDU and generates approximately \$828,000 of revenue for the FY 2007/08.

Sewer Impact Fees

Sewer impact fees or connection fees are onetime fees collected when a new building or more intense use per EDU is connected to the sewer system. These fees are generally considered to be used to fund capital improvements as that property's buy-in to the WWTP system.

The current sewer impact fee is \$6,741/EDU and is adjusted July 1 of each year according to the Engineering News Record construction cost (ENR-CCI).

Grants and Loans

Grants and loans are one time amounts that are applied for by the City to help fund major construction projects.

Grant funds require no repayment and thus will reduce the effect of a project or portion of a project on sewer rates. The City currently has obtained for the Phase 1 WWTP project a \$2,000,000 grant from the State. The City also has obtained a \$600,000 EPA grant for the Phase 2 WWTP project.

Loan funds require repayment by the City which is based upon the amount of loan, interest rate and period of loan. The loan allows the spreading of the cost over a period of years rather than a one time immediate large cost. Loans are repaid using sewer service charges, connection fees or if other grants are obtained that are allowed to repay the loan.

The City has a State loan of \$9,400,000 from the State for the Phase 1 and Phase 2 project. However, the City cannot access the Phase 2 portion of the loan until the Phase 2 construction is commenced next year.

The City also is paying off a 1978 revenue bond used to finance the 1978 WWTP improvements. This amount is currently approximately \$5,400 per year.

General Obligation Bond

General obligation (GO) bonds are used by agencies to build infrastructure facilities and are paid off over time. The bonds project is approved by the agency voters and then is paid off by a property tax collection.

The City has one outstanding GO Bond that was approved in 1978 for the 1978 WWTP improvements. The amount due each year from the City for the bond repayment is approximately \$5,700.

Current & Projected Cost and Revenue Demands

The WWTP total costs and total revenue needs are projected for the current FY 2007/08 through FY 2013/14 and shown in Appendix A2. The City in addition to the loans and grants already received or obligated will need at least another \$600,000 loan in order to remain whole and will need a rate increase July 1, 2008 to \$87/month/EDU.

If no rate increase is implemented above the existing \$60/month/EDU, the City will be \$503,689 **in the red** at the end of FY 2008/09 and be **\$4,086,820 in the red** by FY 2013/2014. Since the City has no other City funds it can use, the sewer system would be bankrupt and there would be no monies available to pay for personnel, materials & supplies and repayment of loans.

If the proposed rate increase is adopted to \$87 per month per EDU for FY 2008/09 it will not be enough over time, unless the City receives substantial grants. Future year projections show that the base monthly sewer service fee to fund the WWTP would need to be increased each year up to \$120.20/month/EDU by FY 2013/14 assuming no other grants are obtained for the WWTP

Additional Grant Funding Efforts

The City is actively investigating and pursuing any additional grant monies that may be available to pay for some of the needed capital improvements and thereby reduce the rate increases needed pay for them. The City Manager presented the City's WWTP needs to our representatives in Congress on the recent Cap-to-Cap trip and requested potential grant funding; we have contacted EPA among others for additional potential grant funds.

If the City is able to acquire additional funds for the WWTP, each additional \$1,000,000 in grant funds would reduce the WWTP increase needed by approximately \$5.30/month/EDU.

Conclusions and Recommendations

General

The City's current sewer WWTP service monthly base rate of \$60.00/EDU will not generate enough revenue to pay for:

1. Normal system operation and maintenance costs;
2. An adequate depreciation (replacement) reserve;
3. A contingency (emergency) reserve;
4. Capital improvement annual loan repayments

Long-range rate projections indicate that additional rate increases will be needed in future years. However, because the City has several pending and other grants that it is pursuing, it is recommended, at this time, that the sewer service monthly base rate for inside City users be raised to \$87.00/EDU in FY 2008/09 which will consist of and provide enough revenue to pay for:

1. Normal M&O costs	\$67.30
2. Capital Improvements & Loan Repayments	1.40*
3. Replacement reserve	15.38
4. Contingency (emergency reserve)	<u>2.92</u>
Total	\$87.00

- The portions making up the total may vary, but not the Total.
- * The loan repayment portion in FY 09/10 rate increases to about \$20.00 when the repayments start for the SRF loan & other loan.

Outside City properties pay an additional \$0.46/EDU/month for their share of the existing General Obligation Bond paid only by inside City users included as part of their annual property tax.

The City continues to actively investigate and apply for grants and other loan interest loans to pay for required system capital improvements in order to reduce the affect of rates on capital improvements.

See Table 1 for a projected summary of rates if no additional grant funds are obtained for period FY 2009/09 through 2013/14.

Summary Recommendation

Based upon an analysis of system costs and including other assignable direct and indirect costs it is recommended that the City Council call for a public hearing after proper notification to sewer system users with the intent to:

5. Establish a new base rate for the WWTP system for inside City system users of \$87.00/EDU/month.
6. Establish a new base rate for the WWTP system for outside City system users of \$87.46/EDU/month.
7. Continue the schedule that the minimum billing rate to any one property shall not be less than the base billing rate for 1 EDU;
8. Direct the City Manager, City Finance Officer, City Engineer, and Director of Public Works to provide the City Council an annual report by May 1st of each year as to recommendations concerning sewer system costs and changes needed in EDU basis, rates, or other matters related to the City's sewer system costs and M&O.

The proposed rate increase is for areas within the existing City limits needs and those few users currently outside the City limits. The City Title 22 WWTP currently under construction is sized to serve the existing City limits growth anticipated over the next 20-years.

Some general items of cost as related to revenue and rates are that under the proposed EDU schedule and 2008/09 budget:

1. Each \$1.00/EDU of monthly WWTP base yields \$13,300 of annual revenue.

V. SEWER COLLECTION SYSTEM (SCS), not including lift stations

Background and History

1. The City's sewer collection system (not including the lift station system) consists of a conglomerate of various types of sewer materials and construction some of which lines date back to 1910.
2. The City sewer collection system consists of approximately 11 miles of public gravity lines and associated manholes and cleanouts with approximately 740 private sewer service laterals.
3. The City system currently has an average day dry weather flow (ADDWF) as measured at the WWTP of approximately 165,000 gallons per day.
4. During heavy rain and winter storm events the flow to the WWTP can increase up to a flow of about 2,200,000 gallons per day which equates to a peaking factor of 13.3 over ADDWF.

The 13.3 peaking factor is considered much greater than what would be expected on a new collection and is reflective of substantial amounts of infiltration and inflow (I/I) into the system. This I/I can create maintenance and operation problems. However, at this time, the City does not experience any sewer main line capacity problems or overflow problems due to the high wet weather sewer system flows.

5. The RWQCB in the City's new October 2007 discharge NPDES permit and C&D order placed requirements on the City to perform additional sewer line assessments such as cleaning, TVing, smoke testing all lines, and construction of line replacements in order to attempt correction and removal of some of the I/I entering the sewer collection system. The order also included a date for compliance of October 2012 in addition to other interim reports and progress evaluations.
6. The State in 2006 also has implemented and made a requirement of all cities, including Colfax, the preparation of a Sewer System Master Plan (SSMP) which requires system evaluations, system operation and maintenance manuals, recorded keeping requirements and updating annually of system correction needs, plus other documents and reports to be prepared on an ongoing basis, with the master report to be completed for Colfax by February 2010 to address and include all of the SSMP requirements. The City approved by Resolution on April 29, 2008 a schedule to complete the SSMP with the items required to be developed and implemented in accordance with the State requirements.
7. The State, as part of the SSMP and also the RWQCB require the City to provide for any sewer system overflows, spills, SSO documentation, reports within hours or days of spill depending on type and quantity, plus reports on annual or quarterly depending on the particular requirement.
8. All of the above State and RWQCB requirements will require additional equipment, ongoing system cleaning, TVing, and smoke testing, record keeping and evaluation to determine which lines should be prioritized for replacement, repair or upsizing to prevent SSO and provide adequate capacity for connected uses.

9. The City prepared an I/I report in 2005 and also a response as required by the 2006 RWQCB C&D order which outlined actions the City will take to accomplish both the State and RWQCB requirements
10. The City completed an I/I project in 2004 on Quinn Lane and in 2007 another I/I project on Rocky Road/Pleasant Street and Oak Street.
11. All of these new State and RWQCB requirements will require substantial costs to implement plus the capital costs to effect the improvements as they are identified for collection system improvements.

Maintenance and Operation Costs

Current fiscal year 2007/08 sewer collection system maintenance and operation expenses are estimated to total \$21,105 and are projected to increase to \$216,000 in 2008/09 and then be \$203,900 in 2009/10 and \$175,549 in 2010/11.

The significant increase in cost for M&O in 2008/09 is because: the City will be performing the system assessment required to meet the RWQCB and State requirements, and in 2009/10 the acquisition of hydraulic sewer cleaner/TV truck. Subsequent years M&O costs are somewhat less as the original assessment and equipment acquisition will have been completed.

Appendix B includes a breakdown of the M&O expense projections for the current fiscal year 2007/2008 through fiscal years to 2013/14.

Capital Costs Related to Collection System

Current fiscal year 2007/08 collection system capital improvements are estimated to total \$97,000 and are projected to total \$339,183 in 2008/2009 and \$1,712,922 in 2009/2010.

The capital costs noted are those estimated using the existing I/I 2005 report. The projects may change depending on the results of the sewer assessment to be completed in the 2008/09 FY.

Appendix B includes a breakdown of the Capital Cost expense projections for the current fiscal year 2007/2008 through fiscal years to 2013/14.

Additional Costs Sewer Collection System

Additional costs associated with the sewer collection system is the need for a depreciation reserve amount to provide for future replacements and major repairs as a result of annual M&O assessments that identify additional problem areas.

Appendix B includes a breakdown of collection system Depreciation Reserves expense projections for the current fiscal year 2007/2008 through fiscal years to 2013/14.

Current Revenues

The City has three sources of revenue potentials to fund the Collection System. They are:

1. Equivalent monthly sewer service charge to connected users;
2. Sewer impact fees;
3. Grants and loans from public or private agencies or institutions

Equivalent monthly sewer service charge

The City currently collects on the tax rolls an annual charge for I/I purposes of \$74.40/per EDU. This equates to \$6.20/month/EDU.

Collection System Impact Fees

The City currently has no sewer collection system impact fee.

Grants and Loans

Grants and loans are one time amounts that are applied for by the City to help fund major construction projects.

Grant funds require no repayment and thus will reduce the affect of a project or portion of a project on sewer rates. The City currently has not obtained grant funds for the sewer collection system.

Loan funds require repayment by the City that is based upon the amount of loan, interest rate, and period of loan. The loan allows the spreading of the cost over a period of years rather than a one time immediate large cost. Loans are repaid using sewer service charges, connection fees or if other grants are obtained that are allowed to repay the loan.

The City currently has not obtained any loan funds for the sewer collection system.

Current & Projected Cost and Revenue Demands

The sewer collection system total costs and total revenue needs are projected for the current FY 2007/08 through FY 2013/14 and shown in Appendix B.

The City is proposing to obtain a \$1,600,000 loan in FY 2009/10 to replace/repair sewer system improvements by priority identified after the M&O assessment is completed in FY 2008/09. The improvements are required in order to meet both the 2007 RWQCB NPDES and C&D requirements and the State SSMP requirements and to help avoid SSO's fines.

If no rate increase is implemented above the existing equivalent \$6.20/month/EDU, the City will not be able to provide all the system improvements required and could be placed in a position of potential violation of State and RWQCB requirements with resulting assessment of fines.

If a rate increase is implemented, future year projections, assuming no other grants obtained for the collection system, show that the equivalent monthly sewer service fee to fund the collection system would need to be increased each year up to \$22.40/month/EDU in FY 2013/14.

Additional Grant Funding Efforts

The City is actively investigating and pursuing any additional grant monies that may be available to help reduce the system costs. The City Manager presented the City's collection system needs back east on the recent Cap-to-Cap trip and requested potential grant funding.

We also will be investigating other Grants/Loans that may be available from USDA and the State among others.

If the City is able to acquire additional funds for the collection system, each additional \$1,000,000 in grant funds would reduce the collection system increase needed by approximately \$5.30/month/EDU.

Conclusions and Recommendations

General

The City's current equivalent sewer collection service monthly base rate of \$6.20/EDU will not generate enough revenue to pay for:

5. Normal system operation and maintenance costs;
6. An adequate depreciation (replacement) reserve;
7. A contingency (emergency) reserve;
8. Capital improvement annual loan repayments

Long-range rate projections indicate that additional rate increases will be needed in future years. However, because the City has several pending and other grants that it is pursuing, it is recommended, at this time, that the sewer service monthly base rate for all users be raised to \$12.400/EDU in FY 2008/09 which will consist of and provide enough revenue to pay for:

1. Normal M&O costs	\$ 4.17
2. Capital Improvements & Loan Repayments	5.25*
3. Replacement reserve	2.98
4. Contingency (emergency reserve)	<u>0.00</u>
Total	\$12.40

The portions making up the total may vary, but not the Total.

- * The loan repayment portion in FY 10/11 rate increases to about \$ 8.59 when the repayments start for the loan that constructs the capital improvements.

The City continue to actively investigate and apply for grants and other loan interest loans to pay for required system capital improvements in order to reduce the affect of rates on capital improvements.

See Table 1 for a projected summary of rates if no additional grant funds are obtained for period FY 2009/09 through 2013/14.

Summary Recommendation

Based upon an analysis of system costs and including other assignable direct and indirect costs it is recommended that the City Council call for a public hearing after proper notification to sewer system users with the intent to:

4. Establish a new base rate for the collection system for users of \$12.40/EDU/month.
5. Continue the schedule that the minimum billing rate to any one user shall not be less than the base billing rate for 1 EDU;
6. Direct the City Manager, City Finance Officer, City Engineer, and Director of Public Works to provide the City Council an annual report by May 1st of each year as to recommendations concerning sewer system costs and changes needed in EDU basis, rates, or other matters related to the City's sewer system costs and M&O.

The proposed rate increase is for all system users.

Some general items of cost as related to revenue and rates are that under the proposed EDU schedule and 2008/09 budget:

1. Each \$1.00/EDU of monthly collection rate yields \$13,300 of annual revenue.

VI. SEWER LIFT STATIONS AND FORCE MAINS (LS)

Background and History

1. The City's major infrastructure lift stations consist of two lift station-force main sub systems. They are designated as:
 - a. The School Lift Stations, and,
 - b. Non-School Lift Stations

The lift stations and force mains are maintained and operated by the City and system costs associated with each of the two subsystem are funded by the total users connected to and using the subsystem.

2. The lift stations are considered by the RWQCB, and the State as part of a sewer collection system and as such come under and are required to meet the same NPDES, C&D, and SSMP requirements as the for the collection system concerning M&O needs and improvements to provide redundancy to avoid as much as possible SSO's.
3. School Lift Station subsystem:
 - a. Currently serves 61.3 EDU's consisting of 4-single single family houses and two schools consisting of a total 57.3 EDU's. The schools are Colfax High School and Colfax Elementary School and both are outside the existing City limits.
 - b. This subsystem consists of two separate lift stations and force mains.
 - c. The subsystem was constructed and connected to the City's gravity lines approximately in 1989.
 - d. Each lift station has a redundant pump such that if one pump malfunctions, the other pump will pump.
 - e. The lift stations are powered by electricity.
 - f. Based on an initial review and assessment of the lift stations prior to as part of the State requirements being imposed upon the City, the following needs were developed and are applicable to each lift station site:
 1. Standby generator with automatic transfer switch in case of power outage;

2. Auto dialer needed to notify City in case of system problem to provide rapid response.
 3. Redundant level and pump failure sensors;
 4. Permanent quick bypass coupling connection to force main should total pump station fail. Allows connection of mobile generator and pump that completely bypass the lift station.
 5. Install continuous recording/totalizing flow meter.
4. Non School Lift Station subsystem
- a. Currently serves a total of 290 EDU's consisting of a mix of residential and commercial uses. All the connected uses are inside the City limits.
 - b. This subsystem consists of four separate lift stations and their force mains.
 - c. The subsystem was constructed between 1978 and 1998 and connected to the City's gravity lines.
 - d. Each lift station has a redundant pump except one site such that if one pump malfunctions, the other pump will pump.
 - e. The lift stations are powered by electricity.
 - f. Based on an initial review and assessment of the lift stations prior to and as part of the State requirements being imposed upon the City, the following needs were developed and are applicable to each lift station site:
 1. Standby generator with automatic transfer switch in case of power outage or equivalent storage facility;
 2. Auto dialer needed to notify City in case of system problem to provide rapid response.
 3. Redundant level and pump failure sensors;
 4. Permanent quick bypass coupling connection to force main should total pump station fail. Allows connection of mobile generator and pump that completely bypass the lift station.
 5. Install continuous recording/totalizing flow meter
 - g. In addition to the above items required at each site, the following are needed at specific sites:
 1. At Maidu site, LS6, a new wet well and lift station;
 2. From Maidu to Iowa Hill road construct new or upsize existing force main from 4" to 6". The existing force main into Maidu is 6" and the 4" force main out of Maidu is too small.
5. The City in the response required by the 2006 RWQCB C&D order outlined actions the City will take to accomplish both the State and RWQCB requirements.
6. All of these new State and RWQCB requirements will require substantial costs to implement plus the capital costs to effect the improvements identified for lift station system improvements.

Maintenance and Operation Costs

Sewer lift station subsystems maintenance and operation expenses are estimated to total:

Subsystem	Current FY 2007/08	FY2008/09
a. School subsystem:	\$30,000	\$34,254
b. Non school subsystem:	\$65,000	\$69,544

Appendix C1 includes a breakdown of the M&O expense projections for the current fiscal year 2007/2008 through fiscal years to 2013/14.

Capital Costs Related to Lift Station System

Sewer lift station capital costs are estimated to total:

Subsystem	Current FY 2007/08	FY2008/09
a. School subsystem:	\$0	\$ 307,614
b. Non school subsystem:	\$0	<u>\$1,013,883</u>
Total		\$1,321,497

The capitol costs noted are those estimated by the City to accomplish the needs identified for each subsystem noted above under Background and History.

Appendix C2 through C5 includes a breakdown of the Capital Cost estimates by subsystem.

Current Revenues

The City has three sources of revenue potentials to fund the Lift Station System. They are:

1. Equivalent monthly sewer lift station charge to connected users;
2. Lift station impact fees;
3. Grants and loans from public or private agencies or institutions.

Monthly Lift Station Charge by Subsystem:

The City current monthly rate per EDU by subsystem is as follows.

Subsystem	Monthly Rate/EDU
a. School subsystem	\$17.47
b. Non school subsystem	\$13.29

Collection System Impact Fees

The City currently has no sewer collection system impact fee.

Grants and Loans

Grants and loans are one time amounts that are applied for by the City to help fund major construction projects.

Grant funds require no repayment and thus will reduce the affect of a project or portion of a project on sewer rates. The following funds have been obtained and allocated to the lift station capital improvement projects.

- Community Development Block Grant (CDBG) Planning and Technical Assistance Grant) \$ 35,000

- City Council Allocation of CDBG Program Income Funds \$ 200,000

Loan funds require repayment by the City that is based upon the amount of loan, interest rate, and period of loan. The loan allows the spreading of the cost over a period of years rather than a one time immediate large cost. Loans are repaid using lift station charges, connection fees or if other grants are obtained to repay loans or in place of loans.

The City currently has not obtained any loan funds for the sewer lift station systems.

Current & Projected Cost and Revenue Demands

The sewer lift station subsystem total costs and total revenue needs are projected for the current FY 2007/08 through FY 2013/14 and shown in Appendix Table xxx.

In addition to the \$235,000 City CDBG Program funds and CDBG grant funds identified above, the City is proposing to obtain a \$1,267,328 loan in FY 2008/09 to construct the sewer lift station improvements. The improvements are required in order to meet both the 2007 RWQCB NPDES and C&D requirements and the State SSMP requirements and to help avoid SSO's fines.

If no rate increase is implemented above the existing monthly lift station rate, the City will not be able to provide all the system improvements required and could be placed in a position of potential violation of State and RWQCB requirements with resulting assessment of fines.

If a rate increase is implemented, future year projections, assuming no other grants obtained for the lift station systems, show that the monthly lift station service fee to fund the systems would need to be increased each year from amount shown in 2008/09 to the amount shown in 20013/14:

<u>Subsystem</u>	<u>2007/08 Monthly Rate/EDU</u>	<u>2013/14 Rate/EDU</u>
a. School subsystem	\$78.02	\$85.44
b. Non school subsystem	\$41.89	\$45.07

Appendixes C1 and C6 shows projected monthly lift station rates needed to fund the lift station M&O costs and Capital improvement costs.

Additional Grant Funding Efforts

The City is actively investigating and pursuing any additional grant monies that may be available to help reduce the system costs.

Also, the City submitted a CDBG application for funding of all the lift station capital improvements to the State on April 3, 2008. This is a competitive application and the State is to inform the City on May 29, 2008 whether the City was successful.

The City Manager presented the City's lift station system needs back east on the recent Cap-to-Cap trip and requested potential grant funding.

We also will be investigating other Grants/Loans that may be available from USDA and the State among others.

If the City is able to acquire additional grant funds for the lift station systems, each \$100,000 in grant funds would reduce the amount of rate increase needed for capital improvements by the following amount:

<u>Subsystem</u>	<u>Monthly Rate Reduction/EDU/\$100,000 grant</u>
a. School subsystem	\$12.41
b. Non school subsystem	\$ 2.16

Conclusions and Recommendations

General

The City's current sewer lift station monthly rates for connected users are currently \$13.29/EDU for the Non-School subsystem and \$17.47/EDU for the School subsystem and do not generate enough revenue to pay for:

1. Normal system operation and maintenance costs;
2. An adequate depreciation (replacement) reserve;
3. A contingency (emergency) reserve;
4. Capital improvement annual loan repayments

Long-range rate projections indicate that additional rate increases will be needed in future years. However, because the City has several pending and other grants that it is pursuing, it is recommended, at this time, that the lift station monthly rate be raised to \$41.89/EDU for the Non-School subsystem users and to \$78.02/EDU for the School subsystem users in FY 2008/09 which will consist of and provide enough revenue to pay for:

<u>Lift Station Cost Description</u>	<u>\$/EDU/month</u>	
	<u>Non-School</u>	<u>School</u>
1. Normal M&O costs	\$16.65	\$38.81
2. Capital Improvements & Loan Repayments	21.91*	31.45*
3. Replacement reserve, contingency	<u>3.33</u>	<u>7.76</u>
Total	\$41.89	\$78.02

The portions making up the total may vary, but not the Total.

- * If a grant is obtained for the required capital improvements, this amount can be reduced or eliminated.

The City continue to actively investigate and apply for grants and other loan interest loans to pay for required system capital improvements in order to reduce the affect of rates on capital improvements.

See Table 1 for a projected summary of rates if no additional grant funds are obtained for period FY 2009/09 through 2013/14.

Summary Recommendation

Based upon an analysis of system costs and including other assignable direct and indirect costs it is recommended that the City Council call for a public hearing after proper notification to sewer lift station users with the intent to:

4. Establish a new monthly rate for lift station sub system users of \$41.89/EDU for the Non-School subsystem users and \$78.02/EDU for the School subsystem users. .
5. Continue the schedule that the minimum billing rate to any one user shall not be less than the base billing rate for 1 EDU;
6. Direct the City Manager, City Finance Officer, City Engineer, and Director of Public Works to provide the City Council an annual report by May 1st of each year as to recommendations concerning sewer lift station subsystem costs and changes needed in EDU basis, rates, or other matters related to the City's sewer system costs and M&O.

The proposed rate increase is for areas within the existing City limits needs and those few users currently outside the City limits.

Some general items of cost as related to revenue and rates are that under the proposed EDU schedule and 2008/09 budget:

3. Each \$10.00/EDU of equivalent monthly lift station user charge yields the following annual revenue:

<u>Subsystem</u>	<u>Annual revenue/\$1.00 lift station rate</u>
a. School subsystem	\$25,080
b. Non school subsystem	\$ 7,356