

# **City of Kenai Wastewater Facility Master Plan**

## **Wastewater Management – Financial Plan**

Prepared for

**City of Kenai**  
Kenai, Alaska

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**CH2MHILL**

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# **Wastewater Management - Financial Plan**

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## **Summary**

The City of Kenai provides residential and commercial customers with sewer and potable water among other services. The City's utilities face a number of challenges, including capital improvements needed to replace aging infrastructure. The City selected CH2M HILL to prepare a sewer rate review and financing plan to help address these challenges. CH2M HILL is also currently performing a similar review for the water system. The City provided financial reports to CH2M HILL in January and February 2003 to support this effort. This report comprises the sewer rate financial review and recommendations. A parallel report recommends water revenue changes.

The City has not increased sewer rates since 1993, while the majority of Alaska communities surveyed have increased rates at least once since that time. Currently, most residential customers are billed monthly and pay flat rates per month. See Table 1 for the trend in general Alaska inflation since 1993.

The City currently funds the water and sewer enterprise fund from two sources: current and new customers. To date, costs of new connections have been paid by all sewer system customers. New connections pay a connection fee of \$100. The City is in the process of addressing its long term funding needs through rate increases and long term financing sources to reduce the need for significant customer rate increases resulting from large capital expenditures.

The City of Kenai's sewer and water systems operate as a consolidated enterprise unit but are separately accounted. The City of Kenai provided financial statements and annual budgets for the sewer and water systems to CH2M HILL. The sewer system includes the Sewer Department (sewage collection system) and the Sewer Treatment Plant Department. Sewer system revenues and costs are shown as separate categories from Water revenues and costs. In the past several years, total sewer related revenues have exceeded combined Sewer Department and Sewer Treatment Plant Department operating expenses to provide an operating surplus.

A rate increase is necessary in FY2003/04 to allow the sewer system to continue to fund sewer operations while making a contribution to funding planned capital improvements. Subsequent moderate increases are also projected through the end of the study period (FY2007/08). The City may choose to smooth these future rate increases over multiple years, or implement a single larger rate increase, depending on the City's objectives.

The report makes additional recommendations, including the following:

- The budget documents provided indicate that the City has typically reserved about \$40,000 each year for contingencies for the combined Sewer Department and Sewer Treatment Plant Departments. Typical practice for water and sewer utilities is to maintain about 30-45 days of operating expenses as a reserve for contingencies. In the City's case, this would be about \$70,000 annually.
- The City faces the very common situation of not having significant available financial reserves to meet needed capital improvements. Rather than use a cash "pay as you go" approach, which inevitably creates large "rate shocks" and instability to customer bills, some long term financing method would significantly dampen and reduce annual revenue requirements. The difference between revenue requirements of cash outlays and financed expenditures is significant. While grant-financed capital expenditures would be the best method to reduce future customer rate increases, even conventional municipal revenue bonds would create a significant savings to customer bills compared to using customer rate increases to finance capital outlays at one time, which would probably be infeasible.
- This report recommends that the City's rate structure should be reviewed at least every 5 years.

# Introduction

The City of Kenai serves almost 1,600 sewer connections including nearly 1,341 residential units, 44 duplex units, 82 multi-unit residences, 105 commercial flat rate customers, and 140 metered rate commercial customers. The majority of the City's customers are residential connections (over 1,500). Commercial accounts include all nonresidential sewer users.

The City selected CH2M HILL to review its sewer and water rates and financing plans analyze the City's rate structures and recommend rates to fund capital improvements and replacements associated with its current sewer and water services. This report summarizes our findings and recommendations for the sewer enterprise.

The City of Kenai has not increased sewer rates in almost ten years (since 1993). Based on the financial and budget information provided by the City, sewer revenues have traditionally been adequate to support maintenance and operating costs of the combined Sewer Department and Sewer Treatment Plant Department, but revenues have been insufficient to fund sewer system capital expenditures. One result of no rate adjustments for the last ten years is that the City does not appear to have established replacement reserves. Additionally, the City continues to experience increased operating costs, especially those relating to salaries and benefits.

**TABLE 1**  
Alaska (Anchorage) CPI Since 1993 Compared to No Sewer Rate Increases in Kenai  
*City of Kenai Sewer Rate Study and Financing Plan*

Year	Monthly Residential Rate (\$)	Anchorage CPI <sup>1</sup>	CPI Annual Change	Cumulative CPI Change
1993	28.70	132.2	3.1%	3.1%
1994	28.70	135.0	2.1%	5.3%
1995	28.70	138.9	2.9%	8.3%
1996	28.70	142.7	2.7%	11.3%
1997	28.70	144.8	1.5%	12.9%
1998	28.70	146.9	1.5%	14.6%
1999	28.70	148.4	1.0%	15.8%
2000	28.70	150.9	1.7%	17.7%
2001	28.70	155.2	2.8%	21.1%
2002	28.70			
Increase	0.0%			21.1%

<sup>1</sup> U.S. Bureau of Labor Statistics Consumer Price Index for Anchorage MSA

The City does not have a development fee for sewer facilities. Development fees are not a part of this study. However, development fees can be used to finance a portion of the revenue requirements for capital improvement programs. All sewer customers, existing and new, pay for the capital costs of the sewer system.

## Current Rates and Fees

Since the last sewer rate increase in 1993, there has been an escalation of general prices in Alaska of about 21.1 percent during this nine-year period, according to the U.S. Bureau of Labor Statistics Anchorage Price Index (CPI). (See Table 1) If the current single-family monthly sewer rate of \$28.70 had risen with general inflation, the rate would currently average almost \$35 per month. This rate would have generated revenue for increased system replacements and CIP costs.

Table 2 summarizes current residential sewer customer data. Customer growth has averaged a little over 1.05 per year for the past several years. This report assumes that rate of customer growth will continue at this modest rate over the next several years.

**TABLE 2**  
Current Users – Monthly Billing  
*City of Kenai Sewer Rate Study and Financing Plan*

<b>Total Flat Rate and Metered Sewer Accounts</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>Average Growth</b>
Sewer – Residential	1,456	1,475	1,485	1.0%
Sewer – Commercial	202	205	208	1.5%
Water – Residential	1,466	1,485	1,494	1.0%
Water – Commercial	208	212	214	1.4%

  

	<b>2002</b>	
	<b>Water</b>	<b>Sewer</b>
Flat Rate Water and Sewer Accounts		
Single Family Residence	1,351	1,341
Duplex Residences	44	44
Multi-Unit Residences	81	82
Commercial Flat Rates	108	105
<b>Total Number of Flat Rate Accounts</b>	<b>1,584</b>	<b>1,572</b>

**TABLE 2**  
**Current Users – Monthly Billing**  
*City of Kenai Sewer Rate Study and Financing Plan*

<b>Metered Water and Sewer Accounts</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>Avg. Growth</b>
5/8"	1	1	2	41.4%
3/4"	11	11	11	0.0%
1"	45	46	46	1.1%
1-1/4"	6	6	6	0.0%
1-1/2"	28	29	29	1.8%
2"	31	31	31	0.0%
3"	12	12	12	0.0%
4"	1	1	1	0.0%
6"	1	1	1	0.0%
<b>Total Metered Accounts</b>	<b>136</b>	<b>138</b>	<b>139</b>	<b>1.1%</b>

For residential service, nine flat rate categories are currently in effect as shown in Schedule A of the Kenai Current Rates table.

Given the absence of water meters, which is the prevalent practice in Alaskan communities, the City's current residential rate structure reflects a reasonable approach to achieve an equitable residential sewer rate structure. This report recommends no material change to the residential rate classifications or structure.

Many nonresidential customers are also unmetered. Most of these customers are commercial establishments and are generally minimal water users and wastewater dischargers. For customers with meters, Kenai charges both a flat rate based on customer type and a usage charge based on metered water consumption. There are 35 nonresidential non-metered sewer classifications that are each charged a different flat rate. (See Appendix A of Current Rates.)

Table 3 compares the City of Kenai's sewer rates to those of other Alaska cities. Kenai's current average residential monthly sewer bill is about 89 percent of the state average monthly sewer bill for assumed usage of 7,500 gallons and 79% of the average sewer bill assuming 15,000 gallons of sewer flow. The City of Kenai's current average bills are lower than most of the cities surveyed.

**TABLE 3**

Residential Sewer Monthly Rate Comparison<sup>11</sup>  
*City of Kenai Sewer Rate Study*

<b>Community</b>	<b>Population</b>	<b>Wastewater Accounts</b>	<b>Effective Date of WW Rates</b>	<b>Residential Rate Structure</b>	<b>Average Monthly Bill –7.5K Gallons</b>	<b>Average Monthly Bill –15K Gallons</b>
Anchorage	261,446	54,000	2000	Flat	\$21.33	\$21.33
Craig	2,355	365	1998	Water Usage	21.35	28.35
Dillingham	2,400		2000	Flat	37.54	37.54
Haines <sup>12</sup>	1,808	474	1998	Flat	38.75	38.75
Haines <sup>12</sup>	1,808	50	2000	Water Usage	89.77	89.77
Homer	4,205	1,102	2001	Water Usage	49.90	85.15
Juneau	31,262	7,594	2000	Flat	37.28	37.28
<b>Kenai</b>	<b>7,039</b>	<b>1,684</b>	<b>1993</b>	<b>Flat</b>	<b>28.70</b>	<b>28.70</b>
Ketchikan	8,295	2,758	1999	Flat	32.35	32.35
King Cove	671		1998	Flat	13.50	13.50
Klawock	750	357	2000	Flat	37.70	37.70
Kodiak	6,869	2,340	1996	Flat	32.20	32.20
Petersburg	3,398	1,135	1995	Water Usage	32.93	38.03
Seward	3,085	824	1993	Flat	34.00	34.00
Sitka	8,788	3,575	1992	Flat	24.00	24.00
Skagway	820	375	1991	Flat	10.75	10.75
Valdez	4,271	774	1999	Flat	7.75	7.75
Wasilla	5,568	482	1999	Water Usage	33.38	66.75
Wrangell	2,569	835	2000	Flat	28.12	28.12
<b>Average</b>					<b>32.17</b>	<b>36.42</b>

<sup>11</sup>Source: Alaska Water/Wastewater Rate Survey - 2001, Black and Veatch

<sup>12</sup>80% of the City of Haines is served by Haines Utilities and 20% is served by Crystal Cathedrals Water System, Inc.

## Sewer Enterprise Finances

Table 4 shows a history of combined sewer and water operating revenues and expenses, data which was provided by the City. It also shows the estimate of net operating revenues for the combined Sewer Department and Sewer Treatment Plant Department both before and after Capital Outlays. Sewer revenues are almost entirely from sewer service charges. We have assumed that the total sewer and water system Miscellaneous Revenues, such as Interest Earnings and Penalty fees, are attributed to the sewer and water systems according to the systems by the proportions of sewer and water revenues.



**TABLE 4**

History of Sewer and Water Operating Revenues and Expenses in 2000- 2003  
*City of Kenai Sewer Rate Study*

	Actual 2000	Actual 2001	Actual 2002	Projected 2003
<b>Revenues</b>				
Usage Fees				
Hook-up	3,720	5,320	3,800	3,200
Residential Water	227,395	228,904	232,953	235,000
Commercial Water	101,653	106,377	111,969	110,000
Residential Sewer	628,482	627,374	644,331	645,000
Commercial Sewer	<u>270,498</u>	<u>276,599</u>	<u>289,964</u>	<u>280,000</u>
<b>Total Usage Fees</b>	<b><u>1,231,748</u></b>	<b><u>1,244,574</u></b>	<b><u>1,283,017</u></b>	<b><u>1,273,200</u></b>
Miscellaneous Revenues				
Penalty and Interest	18,253	17,552	18,234	18,000
Spec. Asmnt. Principal	45,397	41,617	40,414	32,000
Sale of Assets			0	0
Interest earnings		106,919	63,409	40,000
Other	<u>3,255</u>	<u>3,011</u>	<u>2,013</u>	<u>2,500</u>
<b>Total Miscellaneous Revenues</b>	<b><u>66,905</u></b>	<b><u>169,099</u></b>	<b><u>124,070</u></b>	<b><u>92,500</u></b>
<b>Total Sewer, Water and Misc. Revenues</b>	<b>1,298,653</b>	<b>1,413,673</b>	<b>1,407,087</b>	<b>1,365,700</b>
<b>Expenditures, Including Capital Outlays</b>				
Water Department	(528,471)	(453,486)	(405,426)	(1,446,831)
Sewer Department	(214,187)	(450,903)	(230,627)	(307,423)
Sewer Treatment Plant Dept.	<u>(579,757)</u>	<u>(745,811)</u>	<u>(584,105)</u>	<u>(725,522)</u>
<b>Total Expenditures</b>	<b><u>(1,322,415)</u></b>	<b><u>(1,650,200)</u></b>	<b><u>(1,220,158)</u></b>	<b><u>(2,479,776)</u></b>
<b>Combined Water/Sewer Contrib To/(From) Fund Balance</b>	<b>(23,762)</b>	<b>(236,527)</b>	<b>186,929</b>	<b>(1,114,076)</b>

Table 5 presents a summary of combined sewer and sewer treatment plant operating results. Through 1999/00, net sewer revenues were sufficient to fund Sewer Department and Sewer Treatment Plant operations and capital expenditures of \$191,300, which include Transfers Out of these two Departments' accounts, to leave positive net revenue for the sewer system of about \$153,900.

During 2000/01 sewer revenues continued to provide an estimated combined sewer system operating reserve of almost \$399,000 but this was insufficient to meet Capital Outlays and

Transfers of \$569,000, which left a net combined sewer system loss of almost \$(170,000). In 2001/02, sewer revenues were sufficient to cover operating expenses and capital outlays. The available information indicated that these sewer outlays were made on a cash or "pay as you go" basis. The information provided does not indicate any debt owed by the sewer (or water) system.

**TABLE 5**

Historical operating Results for Combined Sewer and Treatment Plant  
City of Kenai Sewer Rate Study

	FY 1999/00	FY 2000/01	FY 2001/02	FY 2002/03
Total Sewer Revenues	898,980	903,973	934,295	925,000
Sewer Operating Expenses	(146,355)	(154,496)	(137,936)	(214,205)
Treatment Plant Expenses	<u>(456,276)</u>	<u>(473,411)</u>	<u>(477,805)</u>	<u>(576,243)</u>
Sewer Operating Income	296,349	276,066	318,554	134,553
"Other" Revenues Apportioned to Sewer	<u>48,830</u>	<u>122,822</u>	<u>90,348</u>	<u>67,203</u>
<b>Est. Total Sewer Operating Income</b>	<b>345,179</b>	<b>398,888</b>	<b>408,902</b>	<b>201,755</b>
Total Sewer Capital Outlays	(191,313)	(568,807)	(198,991)	(179,900)
Estimated Total Sewer Income	153,866	(169,919)	209,911	21,855

Operation and maintenance costs include all costs associated with operating and maintaining the systems, including personnel, materials and services costs, and administrative transfers. O&M costs do not include capital outlays, which for the purposes of this analysis are included in the CIPs. Expenses associated with issuing debt anticipated during the study period are included in O&M costs.

O&M costs are projected for the five-year study period based on the FY2002/03 estimates and an assumed annual escalation rate of five percent. Beyond the base budget estimates, a number of O&M adjustments are also included to account for changes to O&M due to the implementation of the CIP.

Operation and maintenance costs for the combined sewer system/treatment plant, including personnel, materials and services costs, and administrative transfers are displayed in Table 6.

Total estimated costs for FY 2002/03 are approximately \$790,000 including salaries of approximately \$228,000. Utility costs at the wastewater treatment plant are expected to be approximately \$189,000 while repair and maintenance expenses are nearly \$89,000. Repair and maintenance costs were adjusted from the 2002/03 budget to more accurately reflect actual historical results over the past three years. The midpoint between the historical average and the 2002/03 budget was used to project future repair and maintenance expenses.

Operating expenditures are projected to increase to approximately \$991,000 during the five-year study period; representing an average annual increase of 2.6 percent. The historical average annual increase in operating expenses from 1999/00 through 2001/02 was approximately 1 percent.

**TABLE 6**

Kenai Water Rate Study  
Combined Sewer System/Treatment Plant O&M Expenses

	Budgeted FY 01-02	Proj. Actual FY 02-03	FY 03-04	FY 04-05	Projected FY 05-06	FY 06-07	FY 07-08
<b>Sewer Department</b>							
<b>Salaries and Benefits</b>							
Salaries	220,833	228,404	239,800	251,800	264,400	277,600	291,400
Overtime	6,445	10,000	10,500	11,000	11,500	12,100	12,700
Holiday Pay	8,515	8,574	9,000	9,500	10,000	10,500	11,000
Leave	10,823	12,908	13,600	14,300	15,100	15,900	16,700
Medicare	3,139	3,280	3,500	3,600	3,700	3,800	3,900
PERS	6,201	6,496	6,800	7,100	7,400	7,700	8,100
Unemployment Insurance	272	1,299	1,400	1,400	1,400	1,400	1,400
Workers Compensation	2,903	4,881	5,100	5,300	5,500	5,700	6,000
Health & Life Insurance	34,279	41,638	43,700	45,900	48,200	50,600	53,100
Supplemental Retirement	5,463	6,750	7,100	7,400	7,700	8,100	8,500
<b>Subtotal</b>	<b>298,873</b>	<b>324,230</b>	<b>340,500</b>	<b>357,300</b>	<b>374,900</b>	<b>393,400</b>	<b>412,800</b>
<b>Maintenance and Operations</b>							
Office Supplies	319	1,900	2,000	2,100	2,200	2,300	2,400
Operating & Repair Supplies	66,971	77,816	81,700	85,800	90,100	94,600	99,300
Small Tools/Minor Equipment	21,970	18,250	19,200	20,100	21,100	22,100	23,200
Computer Software	2,250	5,375	5,700	6,000	6,300	6,600	6,900
Professional Services	8,832	19,830	20,800	21,800	22,900	24,000	25,200
Communications	4,409	8,500	6,900	7,300	7,700	8,100	8,500
Travel & Transportation	3,935	8,500	9,000	9,500	10,000	10,500	11,000
Advertising	481	0	0	0	0	0	0
Printing & Binding	310	300	300	300	300	300	300
Insurance	9,500	16,400	17,200	18,000	18,900	19,900	20,900
Utilities	175,169	189,000	198,500	119,400	123,400	166,600	181,300
Repair & Maintenance	18,221	88,660	93,100	97,700	102,600	107,800	113,200
Rentals	89	500	500	500	500	500	500
Books	56	1,059	1,100	1,100	1,100	1,100	1,100
Dues & Publications	218	573	600	600	600	600	600
Contingency	0	24,800	66,425	62,292	65,217	71,533	75,600
Miscellaneous	4,138	6,755	7,000	7,300	7,600	7,900	8,300
<b>Subtotal</b>	<b>316,868</b>	<b>466,218</b>	<b>530,025</b>	<b>459,792</b>	<b>480,517</b>	<b>544,433</b>	<b>578,300</b>
<b>Total Sewer Department</b>	<b>615,741</b>	<b>790,448</b>	<b>870,525</b>	<b>817,092</b>	<b>855,417</b>	<b>937,833</b>	<b>991,100</b>

## Capital Improvement Program

Table 7 summarizes the currently estimated sewer CIP program.. It is anticipated that the sewer department will purchase a new vacuum/jetter (Vactor) truck for routine maintenance at an estimated cost of \$400,000 in 2004. A number of capital projects have been identified for the sewer treatment plant, including improvements to the pretreatment process, aeration equipment, basin modifications, sludge processes, and sludge digestion systems.

The CIP has identified combined Sewer Department and Sewer Treatment Department CIP expenditures of \$967,400 in FY 2004, \$743,000 in FY 2005, \$1.2 million in FY 2006, \$1.8 million in FY 2007, and \$1.3 million in FY 2008.

Replacement costs are those to replace system components that are worn out from use or are obsolete. Revenues to fund projects allocated to new development are also currently generated from user rates and charges. The City does not currently have a sewer development fee. Current sewer rates do not generate sufficient funds for planned capital projects and replacements.

**TABLE 7**

Wastewater Rate Study  
Capital Improvement Plan (\$2003)

<b>Sewer Department Outlays</b>	<b>FY 2003</b>	<b>FY 2004</b>	<b>FY 2005</b>	<b>FY 2006</b>	<b>FY 2007</b>	<b>FY 2008</b>
Land						
Buildings						
Improvements						
Machinery and Equipment		\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Vactor Truck		\$400,000				
Transfers Out	\$73,500	\$73,500	\$73,500	\$73,500	\$73,500	\$73,500
<b>Subtotal</b>	<b>\$73,500</b>	<b>\$498,500</b>	<b>\$98,500</b>	<b>\$98,500</b>	<b>\$98,500</b>	<b>\$98,500</b>
<b>Sewer Treatment Plant Outlays</b>						
Land						
Buildings						
Improvements						
New Pump House						\$329,000
Influent Manhole Modifications						\$47,000
Grit Removal						\$89,000
Bar Screens						\$633,000
Upgraded Fine Bubble Aeration			\$291,000			
Upgraded Aerobic Digester Blower System			\$71,000			
Aeration Basin Modifications for Filament Control					\$1,588,000	
Upgraded RAS			\$22,000			
Upgraded WAS			\$142,000			
Recoating of Aerobic Digester		\$350,000				
Upgraded Aerobic Digester				\$528,000		
Upgraded Solids Handling System				\$510,000		
Machinery and Equipment		\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Sludge Digestion Tank Relining						
Sewage Lift Station-Bridge Rd.						
Transfers Out	\$103,900	\$103,900	\$103,900	\$103,900	\$103,900	\$103,900
<b>Subtotal</b>	<b>\$103,900</b>	<b>\$118,900</b>	<b>\$644,900</b>	<b>\$1,506,900</b>	<b>\$1,706,900</b>	<b>\$1,216,900</b>
<b>Total Capital Outlays</b>	<b>\$177,400</b>	<b>\$967,400</b>	<b>\$743,400</b>	<b>\$1,255,400</b>	<b>\$1,805,400</b>	<b>\$1,315,400</b>

## **Replacement Funding**

Public agencies often have difficulty in funding replacement of existing assets. With thoughtful planning, the appropriate level of replacements can be estimated and a funding plan can be developed. According to new Government Accounting Standards Board regulations, notably the GASB 34 announcement, the City must adopt either an explicit depreciation plan for its assets or an asset management plan by June 30, 2003. Exceptions to the depreciation requirement can be made for enterprise funds, however. Asset accounting, including depreciation or documented asset maintenance programs will become expected under the new GASB rules. The City might consider funding replacement costs through either depreciation charges as part of operating expenses for the sewer system or as part of a scheduled asset maintenance program. These steps would help to protect the City's investment in existing assets. These approaches have proven to be cost effective asset management strategies.

## **Financing Alternatives**

The most desirable methods of financing system improvements is to obtain grants from federal or state agencies. These funding sources help to minimize capital costs to the local community residents. Although there can be some indirect costs associated with assistance such as record keeping and administration, the benefits of these financial sources clearly outweigh the costs. The limited availability of such funding is its major drawback. There are a number of different programs that the City may want to pursue in establishing an overall funding plan. These are listed below.

### **Revenue Bonds**

Revenue bonds are issued through the conventional bond market and are secured by the revenues of the wastewater system. Typically, bonds have a 20-year term and an interest rate of around 5 or 6 percent. The wastewater system would also have to establish a reserve fund equal to one annual debt service payment and pay a 2 percent bond issuance fee. The advantage of revenue bonds is that the utility can avoid large, one-time rate increases that

would be necessary if the financing of the capital projects was expected to come from rate revenue only.

### **Clean Water State Revolving Loan Funds**

In the 1970's and 1980's, federal grants were available for certain major utility system improvements, particularly wastewater treatment facilities, through the Environmental Protection Agency (EPA) Construction Grants Program. However, in the early 1990's, this program was replaced with State Water Pollution Control Revolving Funds (SRFs). Under the SRF program, states were given federal grants to fund loans to communities for water pollution control projects. Communities that receive SRF loans, then repay them to the state to create "revolving" sources of assistance for other communities. In most states, the demands for SRF funds far exceed the available pool of funds.

In Alaska, the Clean Water SRF program is administered by the Department of Environmental Conservation (DEC). In addition to sewage treatment facilities, eligible projects include infiltration and inflow projects that are part of a long-term planning process, non-point source projects, and estuary management projects.

In allocating SRF funds, the DEC considers the following eligibility criteria:

- **Receiving water body sensitivity** – Those projects that will enhance water quality in sensitive waterways are given highest priority.
- **Enforcement activities and water quality violations** – Those projects that are required to address Environmental Quality Commission (EQC) orders, or to carryout mutual agreements and orders, are given the highest priorities.
- **Affordability** – Priority is given to projects where the resulting user fees would be less than 1.75 percent of median household income in the community.

In order to secure SRF funding, it is necessary for the community to demonstrate that it has a stable, reliable source for repaying the loans. Therefore, this funding source would need to be used in conjunction with some other method, such as user charges or taxes. The loans carry a fee of 0.5% of the funding amount to help offset future operational costs. Interest rates are

based on the amortization period and are either flat or based on the Municipal Bond Index, whichever is higher. For 2001, flat interest rates ranged from 1 percent to 2.5 percent.

### **Village Safe Water**

The Village Safe Water program provides grants and engineering assistance to small communities for sewer projects. The program is operated by the DEC and the Division of Facility Construction and Operation. The program helps communities secure federal grant funds and state matching funds. The City would have to apply for funds for FY 2005 as the deadline for FY 2004 funding has passed.

### **Community Grants**

A community grants program is administered by the Department of Community and Economic Development (DCED). The program consists of the following grants:

- **Legislative grants:** the state legislature awards grants to communities for a variety of infrastructure projects. Water and sewer projects are eligible.
- **Capital Project Matching Grants:** provides grants for capital projects to unincorporated communities outside the organized borough. In order to be eligible, the community must have been eligible for the State Revenue Sharing Program (SRS) the previous year. According to the DCED, Kenai received SRS funds in 2002. An account is set-up for each community so that a community may accumulate grants for up to a five-year period to fund larger capital projects.

### **Community Development Block Grant**

Limited federal grant and loan funds are still available through the Community Development Block Grant (CDBG) program administered by the Department of Community and Economic Development (DCED). The grants are issued after a competitive application process. Eligibility for the program is limited to projects that benefit low- and moderate- income persons. Any community other than Anchorage is eligible. A maximum of \$500,000 per community may be awarded for a single-purpose project.



# Cash Flow Projections

The following general assumptions were used in developing the financial plan:

- Customer growth will occur at a modest average rate of 1.0 percent annually based on engineering estimates and historical trends.
- O&M costs will escalate at annual rates of 5.0 percent, based on projected inflation and system growth. An assumed reversion, or “lapse”, of 6.0% of O&M expenses occurs each year, based on historical budget to actual trends.
- Revenues from existing rates were projected to increase by 1 percent annually to account for anticipated customer growth.
- The interest rate on investments is assumed to average 2.0 percent.
- In order to account for fluctuations in O&M expenses, budgeted contingencies were increased to equal 30-days of operating expenses. Budgeted contingency expenses are assumed to be unspent and are carried forward as a part of ending balances.
- O&M expenses were increased or decreased based on the improvements recommended in Section 5 of the City of Kenai’s Wastewater Facility Master Plan (November 2002, 65% draft). Aeration equipment improvements and improvements to the aeration basin are expected to decrease the O&M costs from the City’s current operation practice. The other wastewater improvements are to replace or upgrade aging equipment without necessarily decreasing the net O&M costs. Capital costs will increase at an annual rate of 3 percent to account for inflation.
- Debt service payments are based on the city receiving an SRF loan: 20-year term, 2.5 percent interest, 0.5 percent administration cost, and a reserve requirement equal to one annual debt service payment.
- Debt service coverage will equal or exceed 1.10 times annual debt service. This requirement states that revenues must be sufficient to meet operating expenses plus a factor set at 1.10 times annual debt service on all revenue bonds.

## Summary of Required Rate Increases

Tables 8A and 8B show a summary of sewer revenue increases needed if the combined sewer system were to meet operating and capital expenditures using a financing mechanism, such as an SRF loan, to finance these outlays. Total operating expenses are expected to continue to grow at modest rates of about 5.0% per year. However, without an outside financing structure, net revenues at current rates would be deficient each year through 2008.

Suggested rate increases assuming the City receives SRF financing are shown in Table 7B. The large initial rate increase is largely caused by the drawing down of reserves in FY 2002/03 to help pay for a water system capital project. A reduction in debt service through a higher proportion of cash financing of equipment would also reduce required revenues. The ending balance in the combined sewer/treatment plant fund will be approximately \$167,000 at the end of the analysis.

Based on the assumptions outlined above, Table 8B indicates that increases in total revenues over the next 5 years, combined with the term financing of the recommended capital improvements as shown in Table 7, will keep the combined sewer system financially sound. The alternative “pay as you go” cash financing approach to financing capital improvements is probably not feasible in terms of generated cash flow or the significant rate increases that would be required to raise the required level of resources to implement cash financing.

TABLE 8A

City of Kenai, Sewer Rate Analysis  
Sources and Uses of Funds

Fund / Description	Actual FY 2001-02	Projected FY 2002-03	Projected FY 2003-04	FY 2004-05	FY 2005-06	FY 2006-07	FY 2007-08
<b>Sources of Funds</b>							
Beginning Balance -- July 1 (a)							
Service Charges	\$401,422	\$0	\$95,794	\$1,712,440	\$1,449,875	\$574,749	\$1,400,541
Hookup Fees	\$934,295	\$925,000	\$1,260,900	\$1,323,972	\$1,390,072	\$1,460,861	\$1,476,047
Interest Income	\$3,800	\$3,200	\$3,500	\$3,500	\$3,500	\$3,500	\$3,500
Miscellaneous	\$46,175	\$29,061	\$19,406	\$31,275	\$20,011	\$21,265	\$15,494
Loan repayments	\$44,173	\$38,142	\$38,905	\$39,683	\$477	\$486	\$496
Proceeds long-term debt	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Grants/Contributions	\$0	\$0	\$2,387,405	\$0	\$0	\$2,738,750	\$0
Intergov Revenues	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total Sources of Funds</b>	<b>\$47,252</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
	\$1,477,117	\$995,403	\$3,805,910	\$3,110,871	\$2,863,935	\$4,799,611	\$2,896,078
<b>Uses of Funds</b>							
Personal Services	\$298,873	\$324,230	\$340,500	\$357,300	\$374,900	\$393,400	\$412,800
Materials and Services	\$316,868	\$441,418	\$463,600	\$397,500	\$415,300	\$472,900	\$502,700
Debt Service	\$0	\$0	\$153,200	\$153,100	\$153,200	\$328,800	\$328,900
Transfers	\$163,000	\$179,900	\$179,900	\$179,900	\$179,900	\$179,900	\$179,900
Capital Improvements	\$35,991	\$0	\$838,111	\$618,483	\$1,213,298	\$1,887,298	\$1,358,832
Expense Lapse @ 6.0%	-	(45,939)	(48,246)	(45,288)	(47,412)	(51,978)	(54,930)
SRF Admin Fee	\$0	\$0	\$11,105	\$0	\$0	\$12,750	\$0
SRF Reserves	\$0	\$0	\$155,300	\$0	\$0	\$176,000	\$0
Ending Fund Balance -- June 30							
Operating Fund Balance	\$662,385	\$70,994	\$1,646,015	\$1,387,584	\$509,532	\$1,329,008	\$92,276
Contingency	\$0	\$24,800	\$66,425	\$62,292	\$65,217	\$71,533	\$75,600
<b>Total Uses of Funds</b>	<b>\$1,477,117</b>	<b>\$995,403</b>	<b>\$3,805,910</b>	<b>\$3,110,871</b>	<b>\$2,863,935</b>	<b>\$4,799,611</b>	<b>\$2,896,078</b>

TABLE 8B

City of Kenai, Sewer Rate Analysis  
Projected Operating Results

Item	Projected						
	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	FY 2006-07	FY 2007-08
Beginning Balance	\$401,422	\$0	\$95,794	\$1,712,440	\$1,449,875	\$574,749	\$1,400,541
Sewer Sales Revenue (existing rates)	\$934,295	\$925,000	\$934,000	\$943,000	\$952,000	\$962,000	\$972,000
Additional Revenue from Rate Increase							
Year	Percent	% of Initial FY Effec.					
FY 2002-03	0.00%	0%					
FY 2003-04	35.00%	100%					
FY 2004-05	4.00%	100%		326,900	330,050	336,700	340,200
FY 2005-06	4.00%	100%			50,922	51,408	52,488
FY 2006-07	4.00%	100%				53,464	54,588
FY 2007-08	0.00%	100%					56,771
Subtotal Additional Revenue		\$0	\$0	\$326,900	\$380,972	\$438,072	\$498,861
Total Sales Revenue		\$934,295	\$925,000	\$1,260,900	\$1,323,972	\$1,390,072	\$1,460,861
		3.4%	-1.0%	36.3%	5.0%	5.0%	5.1%
Other Revenue							
Interest Income		46,175	29,061	\$19,406	\$31,275	\$20,011	\$21,265
Miscellaneous		44,173	38,142	\$38,905	\$39,683	\$477	\$486
Subtotal Other Revenue		90,348	67,203	58,311	70,958	20,488	21,751
Total Resources		\$1,024,643	\$992,203	\$1,319,211	\$1,394,930	\$1,410,560	\$1,482,612
Revenue Requirements							
Operation & Maintenance		\$615,741	\$765,648	\$804,100	\$754,800	\$790,200	\$866,300
Net Revenue Avail. For Debt Service		\$408,902	\$226,555	\$515,111	\$640,130	\$620,360	\$616,312
Debt Service							
Senior Lien		\$0	\$0	\$153,200	\$153,100	\$153,200	\$328,800
Subordinate		0	0	0	0	0	0
Debt Service		\$0	\$0	\$153,200	\$153,100	\$153,200	\$328,800
Senior Lien Debt Service Coverage		-	-	3.36	4.18	4.05	1.87
Subordinate Debt Coverage		-	na	na	na	na	na
Other Sources of Funds							
Hookup fees		3,800	3,200	3,500	3,500	3,500	3,500
Debt Proceeds		0	0	2,387,405	0	0	2,738,750
Grants/Contributions		0	0	0	0	0	0
Intergovernmental Revenues		-	-	-	-	-	-
Loan Repayments		-	-	-	-	-	-
Transfers From Other Funds		0	0	0	0	0	0
Total Other Sources of Funds		3,800	3,200	2,390,905	3,500	3,500	2,742,250
Other Expenditures							
Capital Expenditures		35,991	-	838,111	618,483	1,213,298	1,887,298
SRF Admin Fee		-	-	11,105	-	-	12,750
Reserve		-	-	155,300	-	-	176,000
Expense Lapse @ 6.0%		-	(45,939)	(48,246)	(45,288)	(47,412)	(51,978)
Capital-Related Transfers		163,000	179,900	179,900	179,900	179,900	179,900
Total Other Expenditures		198,991	133,961	1,136,170	753,095	1,345,786	2,203,970
Total Sources of Funds							
Beginning Balance		401,422	-	95,794	1,712,440	1,449,875	574,749
Total Sales Revenue		934,295	925,000	1,260,900	1,323,972	1,390,072	1,460,861
Other Revenue		90,348	67,203	58,311	70,958	20,488	21,751
Other Sources of Funds		3,800	3,200	2,390,905	3,500	3,500	2,742,250
Total Sources of Funds		1,429,865	995,403	3,805,910	3,110,871	2,863,935	4,799,611
Total Requirements							
Operation & Maintenance		615,741	765,648	804,100	754,800	790,200	866,300
Debt Service		-	-	153,200	153,100	153,200	328,800
Other Expenditures		198,991	133,961	1,136,170	753,095	1,345,786	2,203,970
Total Requirements		814,732	899,609	2,093,470	1,660,995	2,289,186	3,399,070
Ending Operating Balance		615,133	95,794	1,712,440	1,449,876	574,749	1,400,541
Unreserved		615,133	70,994	1,646,015	1,387,584	509,533	1,329,008
Contingency		-	24,800	66,425	62,292	65,217	71,533

# Sewer Rates

This report does not recommend significant changes to the existing structure of the City's current sewer rates. Proposed rate increases will be proportional increases across all existing rate classes. This analysis will not require the city to invest in additional metering equipment or billing software that would likely be required if the City were to extensively modify its existing structure.

It is recommended that the City's financial plan be reviewed regularly in the future to avoid significant rate increases.

The projected rate increases calculated in this analysis will be proportional increases across all customer classes. The annual rate increases and the projected residential rate are presented in Table 9.

**TABLE 9**

Projected Residential Rate Increases  
*City of Kenai Sewer Rate Study*

<b>Year</b>	<b>% Increase</b>	<b>Projected Flat Residential Rate</b>
FY 2002/03	0.00%	\$28.70
FY 2003/04	35.00%	\$38.75
FY 2004/05	4.00%	\$40.29
FY 2005/06	4.00%	\$41.91
FY 2006/07	4.00%	\$43.58
FY 2007/08	0.00%	\$43.58

# Consolidated Sewer and Water Financial Projections

The City of Kenai's Water and Sewer Departments are consolidated into one Water and Sewer Fund. Decisions relating to the Sewer and Water Departments take into consideration the impact to the combined Water and Sewer Fund. The accompanying Water Rate Report indicates the possible revenue requirement changes from suggested CIP plans. Table 10 shows the estimated, combined Water and Sewer Funds after revenue changes resulting from the recommended CIP plans. It is important to reemphasize that the scenario shown here indicates a growing level of ending balance cash each year. Rate increases for both the water and sewer systems can be mitigated by using cash resources to reduce bond and annual debt service requirements.

**TABLE 10**

Combined Sewer and Water Fund Summary  
City of Kenai Sewer Rate Analysis

Fund / Description	Actual FY 01-02	Projected Actual FY 02-03	Projected FY 03-04	FY 04-05	FY 05-06	FY 06-07	FY 07-08
<b>Sources of Funds</b>							
Beginning Balance -- July 1 (a)	\$900,835	\$1,182,268	\$136,511	\$1,776,896	\$1,512,894	\$642,962	\$1,481,341
Service Charges - Sewer	934,295	925,000	1,260,900	1,323,972	1,390,072	1,460,861	1,476,047
Service Charges - Water	344,922	345,000	452,400	474,552	499,158	524,974	530,823
Hookup Fees	3,800	3,200	3,500	3,500	3,500	3,500	3,500
Interest Income	63,409	41,064	20,342	32,739	21,205	22,635	16,979
Miscellaneous	60,661	52,500	53,550	54,621	15,713	16,028	16,348
Loan repayments	0	0	0	0	0	0	0
Proceeds long-term debt	0	0	2,387,405	483,250	0	2,738,750	0
Grants/Contributions	0	0	0	0	0	0	0
Intergovernmental Revenues	94,504	0	0	0	0	0	0
<b>Total Sources of Funds</b>	<b>\$2,402,426</b>	<b>\$2,549,032</b>	<b>\$4,314,608</b>	<b>\$4,149,530</b>	<b>\$3,442,543</b>	<b>\$5,409,710</b>	<b>\$3,525,038</b>
<b>Uses of Funds</b>							
Personal Services	\$615,741	\$765,848	\$804,100	\$754,800	\$790,200	\$866,300	\$915,500
Materials and Services	270,135	347,460	364,833	383,074	402,228	422,340	443,457
Debt Service	0	0	153,200	184,100	184,200	359,800	359,900
Transfers	262,300	256,200	256,200	256,200	256,200	256,200	256,200
Capital Improvements (Sewer)	35,991	0	838,111	618,483	1,213,298	1,887,298	1,358,832
Capital Improvements (Water)	35,991	1,110,000	25,000	475,000	25,000	25,000	25,000
Expense Lapse @ 6.0%	0	(66,786)	(70,136)	(68,272)	(71,546)	(77,318)	(81,537)
SRF Admin Fee	0	0	11,105	2,250	0	12,750	0
SRF Reserves	0	0	155,300	31,000	0	176,000	0
Ending Fund Balance -- June 30							
Operating Fund Balance	1,182,268	91,711	1,680,233	1,418,853	544,408	1,374,803	135,333
Contingency	0	44,800	96,663	94,041	98,554	106,537	112,354
<b>Total Uses of Funds</b>	<b>\$2,402,426</b>	<b>\$2,549,032</b>	<b>\$4,314,608</b>	<b>\$4,149,530</b>	<b>\$3,442,543</b>	<b>\$5,409,710</b>	<b>\$3,525,038</b>

# Alternative Funding Scenario

As with any forecast, the wastewater system forecast prepared for the City relies on a number of different assumptions related to costs and revenues. An additional strategy is presented below to illustrate the potential impact on rates.

- **Pay for capital projects through rate increases only - the City issues no long-term debt**

Under this scenario, the City would continue to be debt free and would pay for capital projects on a pay-as-you-go basis. As opposed to debt financing, which allows the City to level the required rate increases, this financing option will result in larger and more sporadic changes to customer rates. The affordability of the City's rates will also become an issue as customers experience large increases in their sewer rates. Finally, equity becomes an issue as existing rate payers are paying for capital projects that will benefit users for future years. Table 11 presents the required rate increases to pay for capital expenditures through customer rates as the primary source of funds.

**TABLE 11**

Projected Residential Rate Increases  
*City of Kenai Sewer Rate Study*

<b>Year</b>	<b>% Increase</b>	<b>Projected Residential Rate</b>
FY 2002/03	0.00%	\$28.70
FY 2003/04	100.00%	\$57.40
FY 2004/05	0.00%	\$57.40
FY 2005/06	20.00%	\$68.88
FY 2006/07	0.00%	\$68.88
FY 2007/08	0.00%	\$68.88