

# City of Kenai Water and Sewer Rate Study

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## Overview

In March 2010, the City of Kenai (the City) commissioned CH2M HILL to update its water and sewer rates. The purpose of the update is to determine if projected operation and maintenance expenses and capital improvement costs will require rate increases in the future. CH2M HILL completed a water and sewer rate study in 2003 in conjunction with the update to the City's Wastewater System Master Plan.

This technical memorandum presents a 20-year financial plan for the water and sewer system. The memorandum begins with an introduction to the financial plan, including the planning assumptions. This is followed by a discussion of projected water and sewer system revenue requirements and revenues. The memorandum ends with a discussion of rate impacts, based on the City's current rate structure.

## Introduction

This technical memorandum presents a financial analysis of the City's water and sewer system. A 20-year financial plan was developed to analyze the impact on water and sewer rates of implementing the capital improvement plan (CIP), as well as addressing annual operations and maintenance (O&M) requirements.

The building blocks of the financial plan are the projections of costs that the City will incur during the 20-year planning period, fiscal year 2010/11 through fiscal year 2029/30, and the revenues, under existing and proposed rates, which the City expects to generate during the same period. The financial plan is based on a set of overall assumptions related to customer growth, inflation, and other factors, as well as the specific phasing of the City's CIP.

The following general assumptions were used in developing the plan:

- Customer growth will occur at the following annual rates:
  - Residential Growth: 0.35%
  - Commercial Growth: 0.35%
- Operation and maintenance costs annual escalation factors:
  - Salaries and wages: 2.5%

- Operating expenses: 3.0%
- Interfund transfers: 4.0%
- Annual operating contingency equal to 30 days of operating expenses
- Capital costs will increase at an annual rate of 3.0 percent to account for inflation
- Interest earned on investments: 4.0%

The draft financial plan for the water and sewer system, in the form of projected sources and uses of funds for the water and sewer utility fund, is presented in Attachment 1. Each component of the financial plan is discussed in more detail below.

## Revenue Requirements

The costs in the plan that are to be funded from annual revenues are referred to as ‘revenue requirements’ for rate-making purposes. Total requirements are composed of:

- Operations and maintenance costs
- Annual capital improvement projects funded directly from rate revenues and reserves
- Debt service requirements
- Transfers to the City’s general fund and other funds for indirect and direct services provided to the utility (i.e. interfund charges)

Currently, the City does not have any outstanding debt related to the water and sewer utility and the financial plan presented herein does not anticipate the issuance of debt during the forecast period.

In addition, annual requirements include operating contingencies equal to 30 days of annual O&M costs. However, 100 percent of annual contingencies are assumed to be unspent and roll forward to subsequent year beginning balances.

Revenue requirements were projected based on data provided by the City, including adopted budget for FY 2009/10 and a proposed CIP with annual details from FY2010/11 through FY2029/30. The City’s actual expenditures for FY 2007/08 and FY 2008/09, and FY2009/10 budget for the water and sewer utility fund are presented in Exhibits 1 and 2.

### Water Utility Operation and Maintenance Costs

Operation and maintenance costs include all costs associated with operating and maintaining the water system, including personnel and materials and services costs. The City of Kenai’s water and sewer systems operate as a consolidated enterprise unit but each utility is managed to be self supporting. The City of Kenai provided annual financial statements and budgets for the water and sewer systems to CH2M HILL.

Exhibit 1 shows historical O&M costs for the water system for FY2007/08 and FY2008/09, and budgeted O&M costs for FY2009/10. Because this analysis is being performed on a cash basis, depreciation expenses are not included. Total budgeted O&M costs for FY 2009/10 are

approximately \$558,000. Approximately 31 percent of this total is personnel related (salaries and wages and benefits).

**EXHIBIT 1**

Historical and Budgeted O&M Costs, Water Utility  
*City of Kenai Water and Sewer Rate Study*

	<b>Actual</b>	<b>Actual</b>	<b>Budget</b>
	<b>FY 2007-08</b>	<b>FY 2008-09</b>	<b>FY 2009-10</b>
<b>Salaries and Benefits</b>			
Salaries	102,362	112,607	113,376
Overtime	11,056	10,476	8,300
Holiday Pay	0	0	0
Leave	4,095	9,920	5,125
Medicare	1,680	1,910	1,839
Social Security	0	0	0
PERS	41,011	43,188	49,096
Unemployment Insurance	0	0	634
Workers Compensation	5,134	4,551	6,124
Health & Life Insurance	19,944	20,017	22,568
Supplemental Retirement	2,739	2,677	2,813
<b>Subtotal Personnel Expenses</b>	<b>188,021</b>	<b>205,346</b>	<b>209,875</b>
<b>Maintenance and Operations</b>			
Office Supplies	1,263	672	1,200
Operating & Repair Supplies	44,676	40,794	52,530
Small Tools/Minor Equipment	4,929	12,504	11,825
Snack Bar Supplies	0	0	0
Computer Software	205	59	1,600
Professional Services	13,468	9,356	14,420
Communications	15,319	15,031	16,500
Travel & Transportation	3,169	2,447	5,150
Advertising	1,034	557	300
Printing & Binding	1,559	1,484	1,600
Insurance	6,500	6,600	7,200
Utilities	138,284	178,879	153,000
Repair & Maintenance	39,680	12,749	48,750
Rentals	3,561	3,706	12,000
Equipment Fund Pmts	0	0	0
Postage	0	0	0
Books	0	0	250
Dues & Publications	624	343	500
Contingency	0	0	20,000
Miscellaneous	1,093	370	1,700
<b>Subtotal Operating Expenses</b>	<b>275,364</b>	<b>285,550</b>	<b>348,525</b>
<b>Total Operating Expenses</b>	<b>463,385</b>	<b>490,896</b>	<b>558,400</b>

Source: City of Kenai, 2009/10 Budget

### Sewer Utility Operation and Maintenance Costs

Exhibit 2 shows historical O&M costs for sewer system for FY2007/08 and FY2008/09, and budgeted O&M costs for FY2009/10. The operating expenses presented in Exhibit 2 are for the sewer department and the wastewater treatment department. Because this analysis is being performed on a cash basis, depreciation expenses are not included. Total budgeted

O&M costs for FY 2009/10 are approximately \$1.1 million. Approximately 47 percent of this total is personnel related (i.e. salaries and wages, benefits).

**EXHIBIT 2**

Historical and Budgeted O&M Costs, Combined Sewer and Wastewater Treatment Departments

*City of Kenai Water and Sewer Rate Study*

	<b>Actual FY 2007-08</b>	<b>Actual FY 2008-09</b>	<b>Budget FY 2009-10</b>
<b>Salaries and Benefits</b>			
Salaries	274,036	288,032	295,691
Overtime	9,128	11,342	10,300
Holiday Pay	9,846	10,077	10,456
Leave	20,077	19,825	12,247
Medicare	4,498	4,742	4,766
Social Security	0	0	0
PERS	105,950	108,609	102,950
Unemployment Insurance	0	0	1,643
Workers Compensation	10,603	9,469	12,403
Health & Life Insurance	52,731	51,479	58,568
Supplemental Retirement	6,922	6,928	7,313
<b>Subtotal Personnel Expenses</b>	<b>493,791</b>	<b>510,504</b>	<b>516,337</b>
<b>Maintenance and Operations</b>			
Office Supplies	1,538	1,002	1,900
Operating & Repair Supplies	86,618	115,794	110,450
Small Tools/Minor Equipment	7,916	12,260	9,090
Snack Bar Supplies	0	0	0
Computer Software	528	59	2,900
Professional Services	5,447	11,775	14,800
Communications	6,173	6,441	7,300
Travel & Transportation	2,850	6,249	8,750
Advertising	954	0	0
Printing & Binding	316	0	0
Insurance	12,700	12,600	13,500
Utilities	240,642	323,576	315,253
Repair & Maintenance	25,755	27,004	59,000
Rentals	0	150	500
Equipment Fund Pmts	0	0	0
Postage	0	0	0
Books	0	0	1,000
Dues & Publications	212	293	520
Contingency	0	0	40,000
Miscellaneous	3,782	3,654	5,930
<b>Subtotal Operating Expenses</b>	<b>395,431</b>	<b>520,858</b>	<b>590,893</b>
<b>Total Operating Expenses</b>	<b>889,222</b>	<b>1,031,362</b>	<b>1,107,230</b>

Source: City of Kenai, 2009/10 Budget

As shown in Attachment 1, O&M costs for the water and sewer system (including personnel services, materials and services, and operating contingency) are projected to increase to nearly \$3.9million by FY2029/30.

## Capital Costs

Exhibit 3 summarizes the CIP for the water and sewer system from FY 2009/10 through FY2029/30 in 2010 dollars. Future capital outlay expenditures are based on the CIP as provided by city staff. Approximately \$22.3 million (in 2010 dollars) in capital improvements from FY 2010/11 through FY2029/30 have been estimated. The projects are necessary to maintain the current level of service provided by existing facilities, replace existing facilities/equipment that are near or beyond their design life, comply with state and federal regulations, and provide capacity to meet the needs of projected growth. Based on the anticipated project schedules and an estimated annual capital cost escalation rate of 3 percent, the total, inflation adjusted CIP for the combined water and sewer system is nearly \$32.8 million through FY2029/30.

As shown in Attachment 1, the projected capital improvements will be paid by a combination of current revenues and matching state funds. For this analysis, it is assumed the city will receive 70 percent matching funds from the state for every project listed in the CIP. The City must fund the remaining 30 percent of capital expenses via water and/or sewer rates or other sources. It was also assumed that many of the projects would be constructed over a number of construction seasons, thus their costs were spread out over a two to three year period.

The City may be eligible for a combination of lower-interest loans and grants from state and federal agencies. However, a public vote would be required to issue any debt on behalf of the utility. One advantage to issuing debt, such as revenue bonds or acquiring low interest loans from the Department of Environmental Conservation, is that the rate increases could be lessened and the additional revenue requirements would be spread over a number of years. No debt funding was assumed for this analysis.

EXHIBIT 3  
Proposed Capital Improvement Program (2010\$)  
*City of Kenai Water and Sewer Rate Study*

Project Name	Cost	Year of Construction
<b>Water Utility</b>		
Replace 10" AC Water Main with 10" HDPE Main	\$1,200,000	2012
Construct 10" HDPE Water Main along Swires Rd	\$1,100,000	2013
North Willow Street 10" Water Main Extension	\$750,000	2017
Construct New 16" Water Main along Beaver Loop Rd, Bridge Access to Dean St (7000lf)	\$3,100,000	2020
Construct new 16" Water Main along Beaver Loop Rd, Togiak Ave to Ames St. (4,300lf)	\$1,800,000	2025
Water Truck	\$35,000	2026
Construct New 16" Water Main Along Beaver Loop Rd, Ames Rd. to Dean St. (6,600lf)	\$3,100,000	2028
<b>Subtotal Water CIP (2010\$)</b>	<b>\$11,085,000</b>	

<b>Sewer Utility</b>		
Sewer Truck	\$75,000	2012
WWTP Dump Truck	\$60,000	2014
WWTP Phase I - UV Disinfection system	\$1,000,000	2015
WWTP Upgrades Phase II - Belt Filter Press, Activated Sludge System Improvements, Control Bldg Exp.	\$2,000,000	2017
North Willow Street 12" Sewer Main Extension	\$750,000	2017
WWTP Upgrades Phase III - Filament control improvements	\$2,800,000	2021
WWTP Upgrade Phase IV - New pump house, influent manhole mods, Grit Removal, Cyclone & Bar Screens	\$2,000,000	2025
WWTP Upgrade Phase V-Upgrades for Aerobic Digester, Solids Handling System, Recoat Aerobic Digester	\$2,500,000	2028
Sewer Truck	\$75,000	2030
<b>Subtotal Sewer CIP (2010\$)</b>	<b>\$11,250,000</b>	
<b>Total Water and Sewer CIP (2010\$)</b>	<b>\$22,335,000</b>	

## Revenues

The City of Kenai provided annual financial statements and budgets for the water and sewer systems to CH2M HILL. Each system's revenues and costs are shown as separate categories in the financial statements. However, other revenue sources, such as beginning fund balance and interest income, are not separated between the two utilities. For this analysis, other revenue sources were treated as shared revenue and were available to either utility.

With limited federal and state assistance available, the City must rely predominantly on water and sewer rates to fund the projected system costs over the next 20 years.

### Water Revenues

Water sales revenues based on existing rates are projected to be approximately \$462,000 in FY2009/10. The rate schedule for FY 2009/10 is presented in Exhibit 4. The monthly rate for unmetered residential customers in FY 2009/10 is \$13.78.

Given the absence of meters, the City's current residential rate structure reflects a reasonable approach to achieve an equitable residential water 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. For customers with meters, Kenai charges both a flat rate based on meter size and a usage charge based on metered water consumption.

The City has approximately 184 metered customers. This includes both residential and commercial customers. In FY 2009/10, the metered customers used approximately 5.3 million gallons of water per month. The current volume charge for metered customers is \$1.33 per 1,000 gallons of water used.

**EXHIBIT 4**

Current Water Rates by Customer Class, FY 2009/10

*City of Kenai Water and Sewer Rate Study*

<b>Metered Customers</b>		<b>Accounts</b>	<b>\$/month</b>		
5/8" or 3/4"		0	\$0.00		
1"		88	\$13.98		
1 1/2"		40	\$35.27		
2"		40	\$53.24		
3"		15	\$79.86		
4"		1	\$119.79		
<b>Volume Charge (\$/000 gallons)</b>			<b>\$1.33</b>		
<b>Unmetered Customers</b>					
<b>Residential</b>		<b>Accounts</b>	<b>\$/month</b>		
One or Two Family residence, per unit		1,502	\$13.78		
Single or double unit apartment, per unit		62	\$13.78		
<b>Commercial</b>		<b>Accounts</b>	<b>Units</b>	<b>\$/Account</b>	<b>\$/Unit</b>
Bowling Alleys		1	0	\$38.60	\$0.00
Churches		4	277	\$0.00	\$0.15
Dentist		1	5	\$0.00	\$8.32
Doctor		1	8	\$0.00	\$8.32
Garage/Service Station		3	0	\$16.64	\$0.00
Hanger-no wash		6	0	\$16.64	\$0.00
Hanger-with wash		1	0	\$19.29	\$0.00
Hotel		1	5	\$0.00	\$8.65
Laundry		1	1	\$0.00	\$15.65
Office		14	0	\$18.63	\$0.00
Recreation/per restroom		2	4	\$0.00	\$9.32
Residential		2	0	\$13.98	\$0.00
Restaurant		5	310	\$0.00	\$1.20
Restaurant/Bar		1	28	\$0.00	\$1.20
School		2	64	\$0.00	\$0.56
Shops		73	0	\$9.66	\$0.00
Sleeping Rooms		1	5	\$0.00	\$3.67
Theater		1	100	\$0.00	\$0.07

**Sewer Revenues**

Sewer sales revenues based on existing rates are projected to be approximately \$1.3 million in FY2009/10. The rate schedule for FY 2009/10 is presented in Exhibit 5. The monthly rate for unmetered residential customers in FY 2009/10 is \$40.35.

Given the absence of meters, 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. For customers with meters, Kenai charges both a demand rate based on meter size and a usage charge based on metered water consumption.

The City has approximately 176 metered customers. This includes both residential and commercial customers. In FY 2009/10, the metered customers used approximately 5.3 million gallons of water per month. The current volume charge for metered customers is \$4.00 per 1,000 gallons of water used.

#### EXHIBIT 5

Current Sewer Rates by Customer Class, FY 2009/10

*City of Kenai Water and Sewer Rate Study*

<b>Metered Customers</b>	<b>Accounts</b>	<b>\$/month</b>
5/8" or 3/4"	0	\$0.00
1"	86	\$40.74
1 1/2"	38	\$102.56
2"	37	\$153.14
3"	13	\$231.81
4"	2	\$348.42
<b>Volume Charge (\$/000 gallons)</b>		<b>\$4.00</b>

#### **Unmetered Customers**

<b>Residential</b>	<b>Accounts</b>	<b>\$/month</b>
One or Two Family residence, per unit	1,483	\$40.35
Single or double unit apartment, per unit	61	\$40.35

<b>Unmetered Commercial-Demand Charge</b>	<b>Accounts</b>	<b>\$/month</b>
5/8" or 3/4"	0	\$0.00
1"	34	\$40.74
1 1/2"	5	\$102.56
2"	1	\$153.14
3"	0	\$231.81
4"	0	\$348.42

<b>Unmetered Commercial-Use Charge</b>	<b>Accounts</b>	<b>Units</b>	<b>\$/Account</b>	<b>\$/Unit</b>
Bowling Alleys	1		\$113.10	\$0.00
Churches	4	277	\$0.00	\$0.43
Dentist	1	5	\$0.00	\$24.24
Doctor	1	8	\$0.00	\$24.24
Garage/Service Station	3		\$49.17	\$0.00
Hanger-no wash	6		\$48.82	\$0.00
Hanger-with wash	1		\$56.20	\$0.00
Hotel	1	5	\$0.00	\$24.94
Laundry	1	1	\$0.00	\$45.31
Office	14		\$53.39	\$0.00
Recreation/per restroom	2	4	\$0.00	\$27.04
Residential	2		\$40.35	\$0.00
Restaurant	5	310	\$0.00	\$3.59



**EXHIBIT 5**

Current Sewer Rates by Customer Class, FY 2009/10  
*City of Kenai Water and Sewer Rate Study*

Restaurant/Bar	1	28	\$0.00	\$3.59
School	2	64	\$0.00	\$1.62
Shops	71		\$9.66	\$28.10
Sleeping Rooms	1	5	\$0.00	\$10.89
Theater	1	100	\$0.00	\$0.19

As stated previously, it was assumed that total sewer and water system miscellaneous revenues, such as interest earnings and penalty fees, would be treated as shared revenue. Nonrate revenues, including revenue from penalty and interest, grant funding (excluding grants for capital expenditures), interest income, and miscellaneous revenues, are estimated at approximately \$109,000 for the water and sewer system in FY 2009/10. Over the 20 year analysis period, other revenues, excluding grant funding for capital projects, are estimated to average about \$63,000 per year.

## Rate Impacts

In FY 2010/11, the City is expected to have approximately \$2.0 million available in beginning reserves in the combined Water and Sewer fund to pay for operating expenses and capital improvement projects. As discussed previously, the beginning fund balance is not reported separately for the water and sewer funds. For this analysis, the beginning fund balance was treated as shared funds for the two utilities. These funds will be drawn down to pay for planned capital projects and operating expenses. It should also be noted that a minimum combined beginning fund balance of approximately \$1.0 million dollars was maintained for each year of the analysis.

This report does not recommend changes to the structure of the City's current water or 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. Thus, the rate increase proposed in this analysis will be across the board increases and could be easily implemented by the City.

The financial analysis also assumes that the City will receive a 70 percent matching grant from the State of Alaska to cover the costs associated with the CIP. The City will be required to cover the remaining 30 percent of capital expenditures.

Exhibit 6 presents the revenue requirements for the combined utilities and the required percentage rate increase for each utility. Rate revenue requirements consist of operation and maintenance expenses (including transfers) and pay-as-you-go capital expenses. Non-rate revenue sources, such as interest and miscellaneous revenue, and use of reserves are deducted from the revenue requirements to estimate the required revenue from rates. As Exhibit 6 illustrates, increased revenues will be necessary to cover the revenue requirements associated with the planned capital expenditures presented in Exhibit 3. Thus, rate increases will be necessary over the course of the analysis period to fund the capital program.

EXHIBIT 6

Revenue Requirements

City of Kenai Water and Sewer Rate Study

	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
<b>Beginning Balance</b>	1,492,369	1,526,375	1,274,325	1,108,373	1,069,092	1,276,139	1,561,268	1,417,509	1,764,947	2,137,521
<b>Revenue Requirements</b>										
Water O&M	621,003	704,032	724,051	744,642	765,823	787,610	810,022	833,075	856,789	881,182
Sewer O&M	345,175	354,932	364,974	375,310	385,948	396,897	408,168	419,770	431,713	444,007
Treatment O&M	895,946	922,221	949,283	977,158	1,005,869	1,035,443	1,065,906	1,097,286	1,129,610	1,162,908
Rate Funded Capital	0	176,640	344,209	327,523	173,891	179,108	701,028	304,025	313,146	249,968
<b>Total Revenue Requirements</b>	<b>1,862,124</b>	<b>2,157,825</b>	<b>2,382,517</b>	<b>2,424,633</b>	<b>2,331,531</b>	<b>2,399,059</b>	<b>2,985,124</b>	<b>2,654,155</b>	<b>2,731,257</b>	<b>2,738,065</b>
Less: Non Rate Revenue	112,533	115,959	120,919	128,377	134,886	137,793	141,019	134,999	134,002	138,339
Use of Reserves	-	258,669	213,425	15,646	-	116,865	367,215	187,635	498,177	765,984
<b>Net Revenue Requirements</b>	<b>1,749,591</b>	<b>1,783,197</b>	<b>2,048,174</b>	<b>2,280,609</b>	<b>2,196,645</b>	<b>2,144,401</b>	<b>2,476,889</b>	<b>2,331,522</b>	<b>2,099,078</b>	<b>1,833,743</b>
Water Rate Revenue -Existing	463,677	465,300	466,929	468,563	470,203	471,849	473,500	475,157	476,820	478,489
Sewer Rate Revenue -Existing	1,313,301	1,317,897	1,322,510	1,327,138	1,331,783	1,336,445	1,341,122	1,345,816	1,350,527	1,355,253
<b>Subtotal Rate Revenue - Existing</b>	<b>1,776,978</b>	<b>1,783,197</b>	<b>1,789,438</b>	<b>1,795,701</b>	<b>1,801,986</b>	<b>1,808,293</b>	<b>1,814,622</b>	<b>1,820,973</b>	<b>1,827,347</b>	<b>1,833,743</b>
Water Rate Revenue - Increase	0	0	233,464	318,623	414,531	504,765	604,535	714,831	777,041	804,925
Sewer Rate Revenue - Increase	0	0	66,125	136,032	180,557	226,717	274,570	324,171	358,823	394,385
<b>Subtotal Rate Revenue - Increase</b>	<b>0</b>	<b>0</b>	<b>299,590</b>	<b>454,654</b>	<b>595,087</b>	<b>731,482</b>	<b>879,105</b>	<b>1,039,003</b>	<b>1,135,863</b>	<b>1,199,311</b>
<b>Total Rate Revenue</b>	<b>1,776,978</b>	<b>1,783,197</b>	<b>2,089,028</b>	<b>2,250,356</b>	<b>2,397,074</b>	<b>2,539,775</b>	<b>2,693,727</b>	<b>2,859,976</b>	<b>2,963,210</b>	<b>3,033,053</b>
Proposed Increase Water Rate	0%	0%	50%	12%	12%	10%	10%	10%	5%	2%
Proposed Increase Sewer Rate	0%	0%	5%	5%	3%	3%	3%	3%	2%	2%

## EXHIBIT 6 (CONTINUED)

## Revenue Requirements

*City of Kenai Water and Sewer Rate Study*

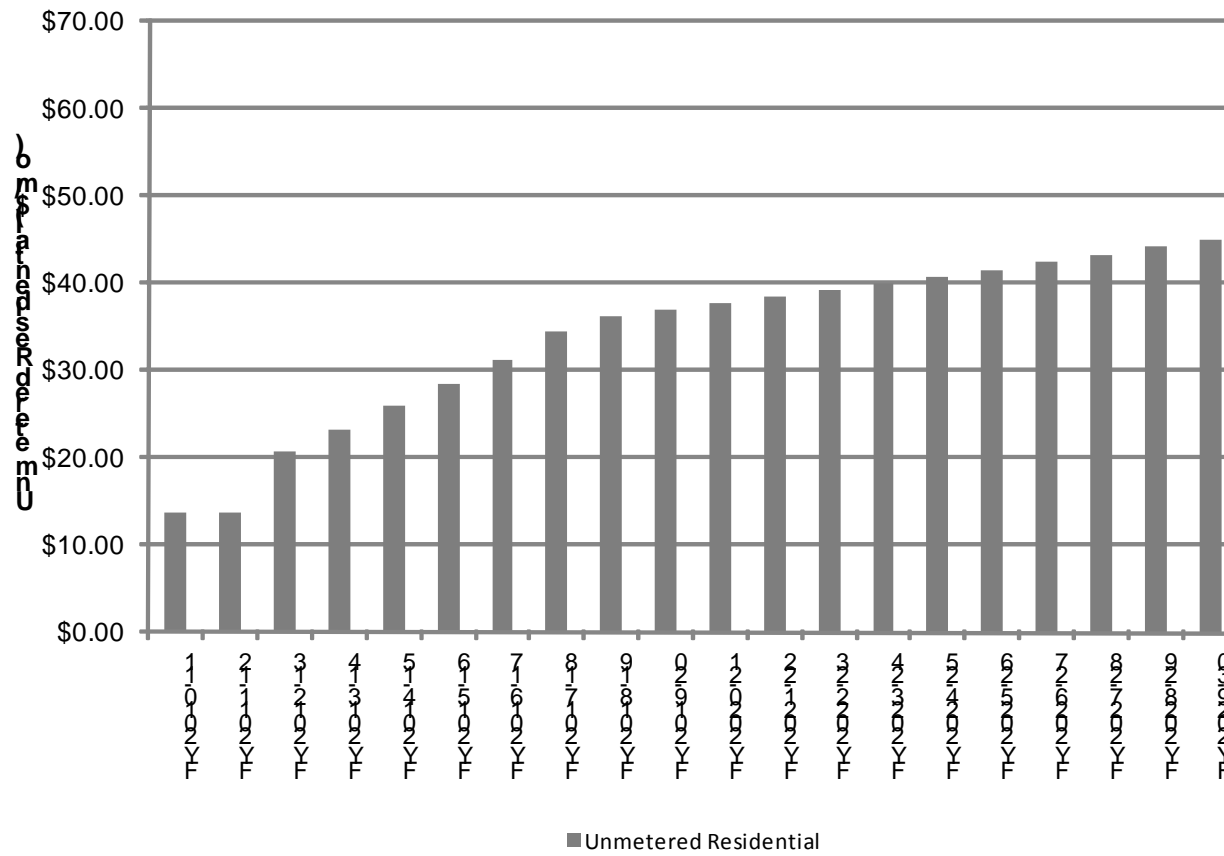
	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
<b>Beginning Balance</b>	2,577,467	2,536,925	2,231,798	2,429,000	3,125,547	3,492,251	3,477,207	3,452,846	3,604,974	3,151,992
<b>Revenue Requirements</b>	906,276	932,089	958,643	985,957	1,014,055	1,042,958	1,072,691	1,103,277	1,134,740	1,167,106
Water O&M	456,665	469,697	483,113	496,926	511,148	525,791	540,868	556,393	572,379	588,842
Sewer O&M	1,197,213	1,232,552	1,268,959	1,306,466	1,345,107	1,384,917	1,425,934	1,468,193	1,511,735	1,556,598
Treatment O&M	747,486	1,009,439	493,427	0	355,217	748,596	753,699	572,018	1,178,356	1,254,344
Rate Funded Capital	<b>3,307,640</b>	<b>3,643,777</b>	<b>3,204,142</b>	<b>2,789,349</b>	<b>3,225,526</b>	<b>3,702,262</b>	<b>3,793,191</b>	<b>3,699,880</b>	<b>4,397,210</b>	<b>4,566,889</b>
<b>Total</b>										
Less: Non Rate Revenue	155,937	154,315	142,110	149,998	177,860	192,528	191,926	190,952	197,037	178,918
Use of Reserves	1,233,550	1,152,691	806,037	779,800	1,181,607	1,637,144	1,722,121	1,623,207	1,902,541	1,398,486
<b>Total Revenue Requirements</b>	<b>1,918,153</b>	<b>2,336,771</b>	<b>2,255,995</b>	<b>1,859,550</b>	<b>1,866,059</b>	<b>1,872,590</b>	<b>1,879,144</b>	<b>1,885,721</b>	<b>2,297,632</b>	<b>2,989,486</b>
Water Rate Revenue -Existing	480,164	481,844	483,531	485,223	486,922	488,626	490,336	492,052	493,774	495,503
Sewer Rate Revenue -Existing	1,359,997	1,364,757	1,369,533	1,374,327	1,379,137	1,383,964	1,388,808	1,393,669	1,398,546	1,403,441
Subtotal Rate Revenue - Existing	1,840,161	1,846,601	1,853,064	1,859,550	1,866,059	1,872,590	1,879,144	1,885,721	1,892,321	1,898,944
Water Rate Revenue - Increase	833,501	862,783	892,790	923,537	955,043	987,326	1,020,404	1,054,296	1,089,022	1,124,600
Sewer Rate Revenue - Increase	430,881	468,332	506,761	546,192	586,648	628,155	670,737	714,419	759,229	805,193
Subtotal Rate Revenue - Increase	1,264,382	1,331,115	1,399,551	1,469,729	1,541,692	1,615,481	1,691,141	1,768,716	1,848,251	1,929,793
<b>Total Rate Revenue</b>	<b>3,104,542</b>	<b>3,177,716</b>	<b>3,252,615</b>	<b>3,329,279</b>	<b>3,407,750</b>	<b>3,488,071</b>	<b>3,570,285</b>	<b>3,654,436</b>	<b>3,740,572</b>	<b>3,828,737</b>
Required Increase in Revenues	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Proposed Increase Water Rate	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%

It was assumed the City would not have a rate increase in FY 2010/11. However, in order to fund the capital program utilizing a pay-as-you-go strategy, increases will be required over the next 20 years. The analysis has projected significant percentage increases to the water rates beginning in 2011/12 through 2018/19. Inflationary adjustments are programmed starting in FY 2019/20. The analysis assumes annual, incremental increases for the sewer utility to maintain a sufficient fund balance and to keep up with the pace of inflation.

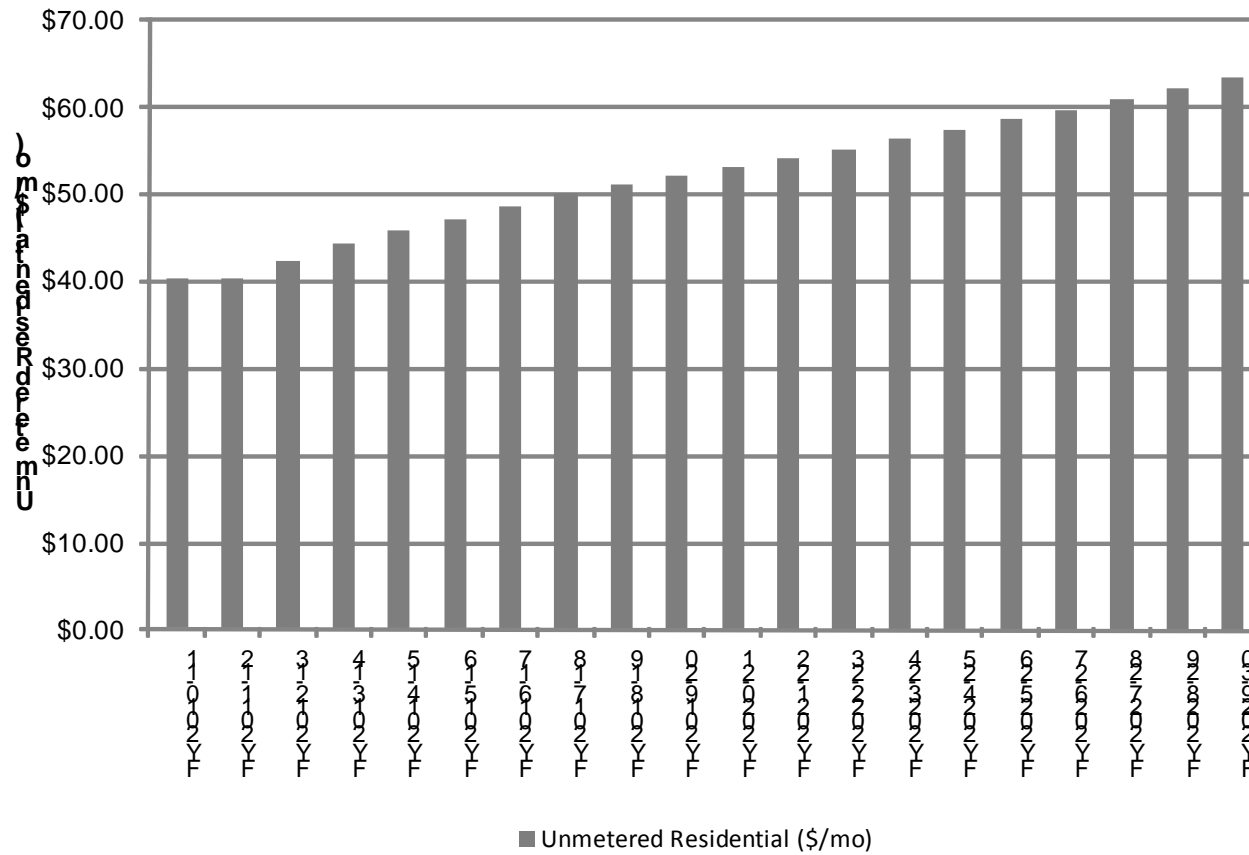
If the City is successful in obtaining additional external funding (i.e. grants) for the planned capital projects, some of the rate increases may be reduced or eliminated. These rate increases have been structured to allow the City to meet projected annual revenue requirements, while continuing to maintain an adequate fund balance. By FY 2029/30, the sewer utility will have an ending fund balance of approximately \$2.6 million.

Exhibits 7 and 8 present the forecast water and sewer rates for unmetered residential customers based on the City's existing rates and the projected rate increases discussed above. Based on the projected rate increases, the residential unmetered water rate will be \$45.06 per month in FY 2029/30. The unmetered residential sewer rate will be \$63.50 per month. Attachments 2 and 3 present the projected rates for all customer classes.

**EXHIBIT 7**  
 Residential Unmetered Water Rate  
*City of Kenai Water and Sewer Rate Study*



**EXHIBIT 8**  
 Unmetered Residential Sewer Rate  
*City of Kenai Water and Sewer Rate Study*



It should be noted that changes to the timing of particular projects listed in the CIP and/or the ability of the City to obtain alternative sources of funding could impact the rate increases estimated in this analysis. Alternative rate increase strategies could be explored to smooth increases over the entire planning period, or achieve other objectives.

## Rate Comparison

Exhibit 9 presents water and sewer rate comparison for Kenai and other communities in Alaska. Information for other communities is for adopted rates as of 2010 and was obtained from each city's website. For this comparison, it was assumed the average monthly water consumption was 7,500 gallons per month. Currently, Kenai has the lowest monthly water rate at \$13.78 per month. Only Soldotna and Palmer have a lower combined water and sewer rate than Kenai.

EXHIBIT 9  
Water and Sewer Rate Comparison  
*City of Kenai Water and Sewer Rate Study*

<b>Community</b>	<b>Monthly Water Bill</b>	<b>Monthly Sewer Bill</b>	<b>Combined Monthly Bill</b>	<b>% Difference from Kenai</b>
Kenai	\$13.78	\$40.35	\$54.13	NA
Kodiak	\$37.58	\$54.55	\$92.13	70%
Anchorage	\$40.04	\$29.26	\$69.30	28%
Juneau	\$23.06	\$56.01	\$79.07	46%
Cordova	\$29.58	\$38.95	\$68.53	27%
Soldotna	\$19.56	\$28.50	\$48.05	-11%
Palmer	\$19.88	\$27.75	\$47.63	-12%
Seward	\$49.19	\$77.20	\$126.38	133%
Homer	\$56.50	\$92.75	\$149.25	176%

Notes:

- 1) All rates as of 2010. Rates verified via internet search.
- 2) For metered accounts, assumed average monthly water consumption of 1,000 cubic feet (7,500 gallons)

It should be noted that direct bill comparisons between communities are difficult because of differing system requirements (i.e. filtered system vs. unfiltered), policy decisions, tax structures, and usage levels for the various utilities. Seasonality and pricing structures also drive different usage levels. Finally, future rate increases of other communities are not known at this time, which makes comparisons of future water and sewer rates difficult.

## Water Meters

Currently, the City only meters a portion of their commercial and residential customer base. The decision to install meters has many implications on the City and its customers. Some of the issues surrounding metering include:

- **Water Consumption:** Installing meters has proven to curb overall water usage when compared to unmetered customers. The reduction of water usage could benefit the City by reducing the need for future water supply, decrease the amount of water entering the wastewater treatment plant, and encourage water conservation.
- **Equality:** Metered customers only pay for the water they actually use, which gives customers the opportunity to manage their water consumption and potentially decrease their water bills. Meters also provide the City with better information about water consumption. This can help the City effectively plan for future demand and can also assist the City when developing equitable rates.
- **Leak Detection:** Water meters assist customers and the City with leak detection in the water system.
- **Water Rates:** As stated previously, meters provide the City with better data on water demand and consumption among customer classes. This data can help develop rate structures that are more fair and equitable. A possible limitation to installing water meters is the City's billing system and whether it can be modified to adapt to a metered customer base.
- **Installation and O&M Costs:** Installing meters will result in capital costs for the City and/or its customer. It could also require a change to the City's billing system if the current system cannot accommodate a modified rate structure. The City would also likely experience an increase in operating costs as additional personnel time would be needed to read and maintain the meters.
- **Revenue Impacts:** To ensure the City continues to meet the revenue requirements necessary to operate the utility, a detailed cost of service analysis should be conducted. This would need to be completed as the City moves from a stable revenue stream of unmetered, flat rate customers to a more variable revenue stream that is based on water usage. The cost of service study would develop rates to meet the required revenue needs of the utility.

## Conclusion

Based on the study findings summarized in previous sections the following recommendations are presented for the City's consideration:

- Implement first 5-years of rate increases presented in Attachment 2 starting in FY 2011/12.
- Increase rates as needed in future years to meet the financial needs of the systems. The projected rate increases shown in Exhibit 5, are based on the best available data and assumptions developed by the City and CH2M HILL as of June 2010.



- Review financial plan regularly to ensure actual revenues and expenditures are tracking with the projections developed in this analysis. The City should review the financial plan annually and adjust the rates as needed to reflect current conditions and assumptions.
- The American Water Works Association (AWWA) rate manual recommends creating separate funds for the water and sewer utilities to separately account for revenues and expenditures. Currently, the operating expenses for the City's water and sewer utility are accounted for separately. However the revenues, including non-rate revenues and fund balances, are co-mingled. This is not an uncommon practice, especially for smaller communities. At this time, it is not recommended to create separate revenue accounts for the water and sewer fund. The City should revisit the feasibility of establishing separate funds when doing so would not create a financial hardship for either of the utilities. Separating the funds at this time would require even larger rate increases to the water utility to make it self-sustaining.

## **Attachments**

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## ATTACHMENT 1

## Projected Sources and Uses of Funds

*City of Kenai Water and Sewer Rate Study*

Description	Projected FY 2010-11	Projected FY 2011-12	Projected FY 2012-13	Projected FY 2013-14	Projected FY 2014-15	Projected FY 2015-16	Projected FY 2016-17	Projected FY 2017-18	Projected FY 2018-19	Projected FY 2019-20
Beginning Balance	1,492,369	1,526,375	1,274,325	1,108,373	1,069,092	1,276,139	1,561,268	1,417,509	1,764,947	2,137,521
Water Rate Revenue	463,677	465,300	700,393	787,186	884,734	976,613	1,078,035	1,189,988	1,253,861	1,283,415
Sewer Rate Revenue	1,313,301	1,317,897	1,388,635	1,463,170	1,512,340	1,563,162	1,615,692	1,669,988	1,709,349	1,749,639
Hook up fees	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700
Penalty and Interest	6,760	6,760	6,760	6,760	6,760	6,760	6,760	6,760	6,760	6,760
Interest Revenue & Misc	81,935	85,361	90,321	97,779	104,287	107,194	110,421	104,401	103,403	107,741
Grant Funding	25,457	437,617	828,611	632,106	431,203	443,375	1,661,189	734,848	756,130	608,717
Other Revenue	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300
Bond Proceeds	0	0	0	0	0	0	0	0	0	0
<b>Total Sources of Funds</b>	<b>3,388,498</b>	<b>3,844,310</b>	<b>4,294,045</b>	<b>4,100,374</b>	<b>4,013,416</b>	<b>4,378,245</b>	<b>6,038,365</b>	<b>5,128,494</b>	<b>5,599,451</b>	<b>5,898,792</b>
Water Utility O&M	621,003	704,032	724,051	744,642	765,823	787,610	810,022	833,075	856,789	881,182
Water Utility Capital	0	509,232	1,147,363	866,642	0	0	922,405	0	0	833,228
Sewer Utility	345,175	354,932	364,974	375,310	385,948	396,897	408,168	419,770	431,713	444,007
Treatment O&M	895,946	922,221	949,283	977,158	1,005,869	1,035,443	1,065,906	1,097,286	1,129,610	1,162,908
Sewer Utility Capital	0	79,568	0	67,531	579,637	597,026	1,414,355	1,013,416	1,043,819	0
Debt Service	0	0	0	0	0	0	0	0	0	0
Available Ending Fund Balance	1,385,196	1,123,836	953,683	910,083	1,112,689	1,393,251	1,244,798	1,587,410	1,955,021	2,389,865
Minimum Fund Balance	141,178	150,489	154,690	159,010	163,450	168,016	172,711	177,537	182,500	187,602
<b>Total Uses of Funds</b>	<b>3,388,498</b>	<b>3,844,310</b>	<b>4,294,045</b>	<b>4,100,374</b>	<b>4,013,416</b>	<b>4,378,245</b>	<b>6,038,365</b>	<b>5,128,494</b>	<b>5,599,451</b>	<b>5,898,792</b>

Description	Projected FY 2020-21	Projected FY 2021-22	Projected FY 2022-23	Projected FY 2023-24	Projected FY 2024-25	Projected FY 2025-26	Projected FY 2026-27	Projected FY 2027-28	Projected FY 2028-29	Projected FY 2029-30
Beginning Balance	2,577,467	2,536,925	2,231,798	2,429,000	3,125,547	3,492,251	3,477,207	3,452,846	3,604,974	3,151,992
Water Rate Revenue	1,313,665	1,344,628	1,376,321	1,408,761	1,441,965	1,475,952	1,510,740	1,546,348	1,582,796	1,620,102
Sewer Rate Revenue	1,790,878	1,833,089	1,876,294	1,920,519	1,965,785	2,012,119	2,059,545	2,108,088	2,157,776	2,208,634
Hook up fees	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700	3,700

Penalty and Interest	6,760	6,760	6,760	6,760	6,760	6,760	6,760	6,760	6,760	6,760
Interest Revenue & Misc	125,339	123,717	111,512	119,400	147,262	161,930	161,328	160,354	166,439	148,320
Grant Funding	1,769,592	2,380,814	1,176,787	25,457	854,296	1,772,180	1,784,087	1,360,165	2,774,954	2,952,260
Other Revenue	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300	1,300
Bond Proceeds	0	0	0	0	0	0	0	0	0	0
<b>Total Sources of Funds</b>	<b>7,588,699</b>	<b>8,230,932</b>	<b>6,784,472</b>	<b>5,914,896</b>	<b>7,546,615</b>	<b>8,926,192</b>	<b>9,004,667</b>	<b>8,639,561</b>	<b>10,298,699</b>	<b>10,093,068</b>
Water Utility O&M	906,276	932,089	958,643	985,957	1,014,055	1,042,958	1,072,691	1,103,277	1,134,740	1,167,106
Water Utility Capital	1,716,450	1,767,943	0	0	560,868	1,211,553	1,190,050	1,055,508	2,174,348	2,239,578
Sewer Utility O&M	456,665	469,697	483,113	496,926	511,148	525,791	540,868	556,393	572,379	588,842
Treatment O&M	1,197,213	1,232,552	1,268,959	1,306,466	1,345,107	1,384,917	1,425,934	1,468,193	1,511,735	1,556,598
Sewer Utility Capital	775,171	1,596,852	1,644,758	0	623,187	1,283,765	1,322,278	851,217	1,753,506	1,941,570
Debt Service	0	0	0	0	0	0	0	0	0	0
Available Ending Fund Balance	2,344,077	2,033,556	2,225,212	2,916,057	3,276,898	3,255,826	3,225,267	3,371,021	2,911,485	2,352,131
Minimum Fund Balance	192,848	198,242	203,788	209,490	215,353	221,381	227,580	233,953	240,506	247,244
<b>Total Uses of Funds</b>	<b>7,588,699</b>	<b>8,230,932</b>	<b>6,784,472</b>	<b>5,914,896</b>	<b>7,546,615</b>	<b>8,926,192</b>	<b>9,004,667</b>	<b>8,639,561</b>	<b>10,298,699</b>	<b>10,093,068</b>

## ATTACHMENT 2

## Projected Water Rates

*City of Kenai Water and Sewer Rate Study*

	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
<b>Proposed Increase</b>	<b>0%</b>	<b>0%</b>	<b>50%</b>	<b>12%</b>	<b>12%</b>	<b>10%</b>	<b>10%</b>	<b>10%</b>	<b>5%</b>	<b>2%</b>
<b>Unmetered Residential</b>	\$13.78	\$13.78	\$20.67	\$23.15	\$25.93	\$28.52	\$31.37	\$34.51	\$36.24	\$36.96
<b>Unmetered Commercial-Demand Charge</b>										
5/8" or 3/4"	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1"	\$13.98	\$13.98	\$20.97	\$23.49	\$26.30	\$28.94	\$31.83	\$35.01	\$36.76	\$37.50
1 1/4"	\$21.30	\$21.30	\$31.95	\$35.78	\$40.08	\$44.09	\$48.49	\$53.34	\$56.01	\$57.13
1 1/2"	\$35.27	\$35.27	\$52.91	\$59.25	\$66.36	\$73.00	\$80.30	\$88.33	\$92.75	\$94.60
2"	\$53.24	\$53.24	\$79.86	\$89.44	\$100.18	\$110.19	\$121.21	\$133.33	\$140.00	\$142.80
3"	\$79.86	\$79.86	\$119.79	\$134.16	\$150.26	\$165.29	\$181.82	\$200.00	\$210.00	\$214.20
Over 3"	\$119.79	\$119.79	\$179.69	\$201.25	\$225.40	\$247.94	\$272.73	\$300.00	\$315.00	\$321.30
<b>Unmetered Commercial-Use Charge</b>										
Bowling Alleys (per account)	\$38.60	\$38.60	\$57.90	\$64.85	\$72.63	\$79.89	\$87.88	\$96.67	\$101.50	\$103.53
Churches (per unit)	\$0.15	\$0.15	\$0.23	\$0.25	\$0.28	\$0.31	\$0.34	\$0.38	\$0.39	\$0.40
Dentist (per unit)	\$8.32	\$8.32	\$12.48	\$13.98	\$15.65	\$17.22	\$18.94	\$20.84	\$21.88	\$22.32
Doctor (per unit)	\$8.32	\$8.32	\$12.48	\$13.98	\$15.65	\$17.22	\$18.94	\$20.84	\$21.88	\$22.32
Garage/Service Station (per account)	\$16.64	\$16.64	\$24.96	\$27.96	\$31.31	\$34.44	\$37.88	\$41.67	\$43.76	\$44.63
Hanger-no wash (per account)	\$16.64	\$16.64	\$24.96	\$27.96	\$31.31	\$34.44	\$37.88	\$41.67	\$43.76	\$44.63
Hanger-with wash (per account)	\$19.29	\$19.29	\$28.94	\$32.41	\$36.30	\$39.93	\$43.92	\$48.31	\$50.73	\$51.74
Hotel (per unit)	\$8.65	\$8.65	\$12.98	\$14.53	\$16.28	\$17.90	\$19.69	\$21.66	\$22.75	\$23.20
Laundry (per unit)	\$15.65	\$15.65	\$23.48	\$26.29	\$29.45	\$32.39	\$35.63	\$39.19	\$41.15	\$41.98
Office (per account)	\$18.63	\$18.63	\$27.95	\$31.30	\$35.05	\$38.56	\$42.42	\$46.66	\$48.99	\$49.97
Recreation/per restroom (per unit)	\$9.32	\$9.32	\$13.98	\$15.66	\$17.54	\$19.29	\$21.22	\$23.34	\$24.51	\$25.00
Residential (per account)	\$13.98	\$13.98	\$20.97	\$23.49	\$26.30	\$28.94	\$31.83	\$35.01	\$36.76	\$37.50
Restaurant (per unit)	\$1.20	\$1.20	\$1.80	\$2.02	\$2.26	\$2.48	\$2.73	\$3.01	\$3.16	\$3.22
Restaurant/Bar (per unit)	\$1.20	\$1.20	\$1.80	\$2.02	\$2.26	\$2.48	\$2.73	\$3.01	\$3.16	\$3.22
School (per unit)	\$0.56	\$0.56	\$0.84	\$0.94	\$1.05	\$1.16	\$1.27	\$1.40	\$1.47	\$1.50
Shops (per account)	\$9.66	\$9.66	\$14.49	\$16.23	\$18.18	\$19.99	\$21.99	\$24.19	\$25.40	\$25.91
Sleeping Rooms (per unit)	\$3.67	\$3.67	\$5.51	\$6.17	\$6.91	\$7.60	\$8.36	\$9.19	\$9.65	\$9.84
Theater (per unit)	\$0.07	\$0.07	\$0.11	\$0.12	\$0.13	\$0.14	\$0.16	\$0.18	\$0.18	\$0.19
<b>Metered Customers</b>										
5/8" or 3/4"	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1"	\$13.98	\$13.98	\$20.97	\$23.49	\$26.30	\$28.94	\$31.83	\$35.01	\$36.76	\$37.50

1 1/2"	\$35.27	\$35.27	\$52.91	\$59.25	\$66.36	\$73.00	\$80.30	\$88.33	\$92.75	\$94.60
2"	\$53.24	\$53.24	\$79.86	\$89.44	\$100.18	\$110.19	\$121.21	\$133.33	\$140.00	\$142.80
3"	\$79.86	\$79.86	\$119.79	\$134.16	\$150.26	\$165.29	\$181.82	\$200.00	\$210.00	\$214.20
4"	\$119.79	\$119.79	\$179.69	\$201.25	\$225.40	\$247.94	\$272.73	\$300.00	\$315.00	\$321.30
<b>Volume Charge (\$/000 gallons)</b>	\$1.33	\$1.33	\$2.00	\$2.23	\$2.50	\$2.75	\$3.03	\$3.33	\$3.50	\$3.57
	<b>FY 2020-21</b>	<b>FY 2021-22</b>	<b>FY 2022-23</b>	<b>FY 2023-24</b>	<b>FY 2024-25</b>	<b>FY 2025-26</b>	<b>FY 2026-27</b>	<b>FY 2027-28</b>	<b>FY 2028-29</b>	<b>FY 2029-30</b>
<b>Proposed Increase</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>
<b>Unmetered Residential</b>	\$37.70	\$38.45	\$39.22	\$40.01	\$40.81	\$41.62	\$42.46	\$43.31	\$44.17	\$45.06
<b>Unmetered Commercial-Demand Charge</b>										
5/8" or 3/4"	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1"	\$38.25	\$39.01	\$39.79	\$40.59	\$41.40	\$42.23	\$43.07	\$43.93	\$44.81	\$45.71
1 1/4"	\$58.27	\$59.44	\$60.63	\$61.84	\$63.08	\$64.34	\$65.63	\$66.94	\$68.28	\$69.64
1 1/2"	\$96.49	\$98.42	\$100.39	\$102.40	\$104.45	\$106.54	\$108.67	\$110.84	\$113.06	\$115.32
2"	\$145.66	\$148.57	\$151.54	\$154.57	\$157.66	\$160.82	\$164.03	\$167.31	\$170.66	\$174.07
3"	\$218.49	\$222.86	\$227.31	\$231.86	\$236.50	\$241.23	\$246.05	\$250.97	\$255.99	\$261.11
Over 3"	\$327.73	\$334.28	\$340.97	\$347.79	\$354.74	\$361.84	\$369.08	\$376.46	\$383.99	\$391.67
<b>Unmetered Commercial-Use Charge</b>										
Bowling Alleys (per account)	\$105.60	\$107.72	\$109.87	\$112.07	\$114.31	\$116.60	\$118.93	\$121.31	\$123.73	\$126.21
Churches (per unit)	\$0.41	\$0.42	\$0.43	\$0.44	\$0.44	\$0.45	\$0.46	\$0.47	\$0.48	\$0.49
Dentist (per unit)	\$22.76	\$23.22	\$23.68	\$24.16	\$24.64	\$25.13	\$25.63	\$26.15	\$26.67	\$27.20
Doctor (per unit)	\$22.76	\$23.22	\$23.68	\$24.16	\$24.64	\$25.13	\$25.63	\$26.15	\$26.67	\$27.20
Garage/Service Station (per account)	\$45.52	\$46.44	\$47.36	\$48.31	\$49.28	\$50.26	\$51.27	\$52.29	\$53.34	\$54.41
Hanger-no wash (per account)	\$45.52	\$46.44	\$47.36	\$48.31	\$49.28	\$50.26	\$51.27	\$52.29	\$53.34	\$54.41
Hanger-with wash (per account)	\$52.77	\$53.83	\$54.91	\$56.01	\$57.13	\$58.27	\$59.43	\$60.62	\$61.83	\$63.07
Hotel (per unit)	\$23.67	\$24.14	\$24.62	\$25.11	\$25.62	\$26.13	\$26.65	\$27.18	\$27.73	\$28.28
Laundry (per unit)	\$42.82	\$43.67	\$44.55	\$45.44	\$46.35	\$47.27	\$48.22	\$49.18	\$50.17	\$51.17
Office (per account)	\$50.97	\$51.99	\$53.03	\$54.09	\$55.17	\$56.27	\$57.40	\$58.55	\$59.72	\$60.91
Recreation/per restroom (per unit)	\$25.50	\$26.01	\$26.53	\$27.06	\$27.60	\$28.15	\$28.72	\$29.29	\$29.88	\$30.47
Residential (per account)	\$38.25	\$39.01	\$39.79	\$40.59	\$41.40	\$42.23	\$43.07	\$43.93	\$44.81	\$45.71
Restaurant (per unit)	\$3.28	\$3.35	\$3.42	\$3.48	\$3.55	\$3.62	\$3.70	\$3.77	\$3.85	\$3.92
Restaurant/Bar (per unit)	\$3.28	\$3.35	\$3.42	\$3.48	\$3.55	\$3.62	\$3.70	\$3.77	\$3.85	\$3.92
School (per unit)	\$1.53	\$1.56	\$1.59	\$1.63	\$1.66	\$1.69	\$1.73	\$1.76	\$1.80	\$1.83
Shops (per account)	\$26.43	\$26.96	\$27.50	\$28.05	\$28.61	\$29.18	\$29.76	\$30.36	\$30.97	\$31.58
Sleeping Rooms (per unit)	\$10.04	\$10.24	\$10.45	\$10.66	\$10.87	\$11.09	\$11.31	\$11.53	\$11.76	\$12.00
Theater (per unit)	\$0.19	\$0.20	\$0.20	\$0.20	\$0.21	\$0.21	\$0.22	\$0.22	\$0.22	\$0.23
<b>Metered Customers</b>										

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5/8" or 3/4"	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1"	\$38.25	\$39.01	\$39.79	\$40.59	\$41.40	\$42.23	\$43.07	\$43.93	\$44.81	\$45.71
1 1/2"	\$96.49	\$98.42	\$100.39	\$102.40	\$104.45	\$106.54	\$108.67	\$110.84	\$113.06	\$115.32
2"	\$145.66	\$148.57	\$151.54	\$154.57	\$157.66	\$160.82	\$164.03	\$167.31	\$170.66	\$174.07
3"	\$218.49	\$222.86	\$227.31	\$231.86	\$236.50	\$241.23	\$246.05	\$250.97	\$255.99	\$261.11
4"	\$327.73	\$334.28	\$340.97	\$347.79	\$354.74	\$361.84	\$369.08	\$376.46	\$383.99	\$391.67
<b>Volume Charge (\$/000 gallons)</b>	\$3.64	\$3.71	\$3.79	\$3.86	\$3.94	\$4.02	\$4.10	\$4.18	\$4.26	\$4.35

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## ATTACHMENT 3

## Projected Sewer Rates

*City of Kenai Water and Sewer Rate Study*

	FY 2010-11	FY 2011-12	FY 2012-13	FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17	FY 2017-18	FY 2018-19	FY 2019-20
<b>Proposed Increase</b>	0%	0%	5%	5%	3%	3%	3%	3%	2%	2%
<b>Unmetered Residential</b>	\$40.35	\$40.35	\$42.37	\$44.49	\$45.82	\$47.20	\$48.61	\$50.07	\$51.07	\$52.09
<b>Unmetered Commercial-Demand Charge</b>										
5/8" or 3/4"	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1"	\$40.74	\$40.74	\$42.78	\$44.92	\$46.26	\$47.65	\$49.08	\$50.55	\$51.56	\$52.60
1 1/4"	\$60.41	\$60.41	\$63.43	\$66.60	\$68.60	\$70.66	\$72.78	\$74.96	\$76.46	\$77.99
1 1/2"	\$102.56	\$102.56	\$107.69	\$113.07	\$116.46	\$119.96	\$123.56	\$127.26	\$129.81	\$132.41
2"	\$153.14	\$153.14	\$160.80	\$168.84	\$173.90	\$179.12	\$184.49	\$190.03	\$193.83	\$197.70
3"	\$231.81	\$231.81	\$243.40	\$255.57	\$263.24	\$271.13	\$279.27	\$287.65	\$293.40	\$299.27
Over 3"	\$348.42	\$348.42	\$365.84	\$384.13	\$395.66	\$407.53	\$419.75	\$432.35	\$440.99	\$449.81
<b>Unmetered Commercial-Use Charge</b>										
Bowling Alleys (per account)	\$113.10	\$113.10	\$118.76	\$124.69	\$128.43	\$132.29	\$136.26	\$140.34	\$143.15	\$146.01
Churches (per unit)	\$0.43	\$0.43	\$0.45	\$0.47	\$0.49	\$0.50	\$0.52	\$0.53	\$0.54	\$0.56
Dentist (per unit)	\$24.24	\$24.24	\$25.45	\$26.72	\$27.53	\$28.35	\$29.20	\$30.08	\$30.68	\$31.29
Doctor (per unit)	\$24.24	\$24.24	\$25.45	\$26.72	\$27.53	\$28.35	\$29.20	\$30.08	\$30.68	\$31.29
Garage/Service Station (per account)	\$49.17	\$49.17	\$51.63	\$54.21	\$55.84	\$57.51	\$59.24	\$61.01	\$62.23	\$63.48
Hanger-no wash (per account)	\$48.82	\$48.82	\$51.26	\$53.82	\$55.44	\$57.10	\$58.81	\$60.58	\$61.79	\$63.03
Hanger-with wash (per account)	\$56.20	\$56.20	\$59.01	\$61.96	\$63.82	\$65.73	\$67.71	\$69.74	\$71.13	\$72.55
Hotel (per unit)	\$24.94	\$24.94	\$26.19	\$27.50	\$28.32	\$29.17	\$30.05	\$30.95	\$31.57	\$32.20
Laundry (per unit)	\$45.31	\$45.31	\$47.58	\$49.95	\$51.45	\$53.00	\$54.59	\$56.22	\$57.35	\$58.50
Office (per account)	\$53.39	\$53.39	\$56.06	\$58.86	\$60.63	\$62.45	\$64.32	\$66.25	\$67.58	\$68.93
Recreation/per restroom (per unit)	\$27.04	\$27.04	\$28.39	\$29.81	\$30.71	\$31.63	\$32.58	\$33.55	\$34.22	\$34.91
Residential (per account)	\$40.35	\$40.35	\$42.37	\$44.49	\$45.82	\$47.20	\$48.61	\$50.07	\$51.07	\$52.09
Restaurant (per unit)	\$3.59	\$3.59	\$3.77	\$3.96	\$4.08	\$4.20	\$4.32	\$4.45	\$4.54	\$4.63
Restaurant/Bar (per unit)	\$3.59	\$3.59	\$3.77	\$3.96	\$4.08	\$4.20	\$4.32	\$4.45	\$4.54	\$4.63
School (per unit)	\$1.62	\$1.62	\$1.70	\$1.79	\$1.84	\$1.89	\$1.95	\$2.01	\$2.05	\$2.09
Shops (per account)	\$9.66	\$9.66	\$10.14	\$10.65	\$10.97	\$11.30	\$11.64	\$11.99	\$12.23	\$12.47
Sleeping Rooms (per unit)	\$10.89	\$10.89	\$11.43	\$12.01	\$12.37	\$12.74	\$13.12	\$13.51	\$13.78	\$14.06
Theater (per unit)	\$0.19	\$0.19	\$0.20	\$0.21	\$0.22	\$0.22	\$0.23	\$0.24	\$0.24	\$0.25



## ATTACHMENT 3

## Projected Sewer Rates

*City of Kenai Water and Sewer Rate Study***Metered Customers**

5/8" or 3/4"	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1"	\$40.74	\$40.74	\$42.78	\$44.92	\$46.26	\$47.65	\$49.08	\$50.55	\$51.56	\$52.60
1 1/2"	\$102.56	\$102.56	\$107.69	\$113.07	\$116.46	\$119.96	\$123.56	\$127.26	\$129.81	\$132.41
2"	\$153.14	\$153.14	\$160.80	\$168.84	\$173.90	\$179.12	\$184.49	\$190.03	\$193.83	\$197.70
3"	\$231.81	\$231.81	\$243.40	\$255.57	\$263.24	\$271.13	\$279.27	\$287.65	\$293.40	\$299.27
4"	\$348.42	\$348.42	\$365.84	\$384.13	\$395.66	\$407.53	\$419.75	\$432.35	\$440.99	\$449.81
<b>Volume Charge (\$/000 gallons)</b>	\$4.00	\$4.00	\$4.20	\$4.41	\$4.54	\$4.68	\$4.82	\$4.96	\$5.06	\$5.16

	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29	FY 2029-30
<b>Proposed Increase</b>	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
<b>Unmetered Residential</b>	\$53.13	\$54.20	\$55.28	\$56.39	\$57.51	\$58.66	\$59.84	\$61.03	\$62.25	\$63.50
<b>Unmetered Commercial-Demand Charge</b>										
5/8" or 3/4"	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1"	\$53.65	\$54.72	\$55.81	\$56.93	\$58.07	\$59.23	\$60.42	\$61.62	\$62.86	\$64.11
1 1/4"	\$79.55	\$81.14	\$82.76	\$84.42	\$86.11	\$87.83	\$89.59	\$91.38	\$93.20	\$95.07
1 1/2"	\$135.05	\$137.75	\$140.51	\$143.32	\$146.19	\$149.11	\$152.09	\$155.13	\$158.24	\$161.40
2"	\$201.66	\$205.69	\$209.81	\$214.00	\$218.28	\$222.65	\$227.10	\$231.64	\$236.28	\$241.00
3"	\$305.25	\$311.36	\$317.59	\$323.94	\$330.42	\$337.02	\$343.76	\$350.64	\$357.65	\$364.81
Over 3"	\$458.81	\$467.98	\$477.34	\$486.89	\$496.63	\$506.56	\$516.69	\$527.03	\$537.57	\$548.32
<b>Unmetered Commercial-Use Charge</b>										
Bowling Alleys (per account)	\$148.93	\$151.91	\$154.95	\$158.05	\$161.21	\$164.43	\$167.72	\$171.08	\$174.50	\$177.99
Churches (per unit)	\$0.57	\$0.58	\$0.59	\$0.60	\$0.61	\$0.63	\$0.64	\$0.65	\$0.66	\$0.68
Dentist (per unit)	\$31.92	\$32.56	\$33.21	\$33.87	\$34.55	\$35.24	\$35.95	\$36.67	\$37.40	\$38.15
Doctor (per unit)	\$31.92	\$32.56	\$33.21	\$33.87	\$34.55	\$35.24	\$35.95	\$36.67	\$37.40	\$38.15
Garage/Service Station (per account)	\$64.75	\$66.04	\$67.36	\$68.71	\$70.09	\$71.49	\$72.92	\$74.38	\$75.86	\$77.38
Hanger-no wash (per account)	\$64.29	\$65.57	\$66.88	\$68.22	\$69.59	\$70.98	\$72.40	\$73.85	\$75.32	\$76.83
Hanger-with wash (per account)	\$74.01	\$75.49	\$77.00	\$78.54	\$80.11	\$81.71	\$83.34	\$85.01	\$86.71	\$88.44
Hotel (per unit)	\$32.84	\$33.50	\$34.17	\$34.85	\$35.55	\$36.26	\$36.98	\$37.72	\$38.48	\$39.25
Laundry (per unit)	\$59.67	\$60.86	\$62.08	\$63.32	\$64.58	\$65.88	\$67.19	\$68.54	\$69.91	\$71.31
Office (per account)	\$70.31	\$71.71	\$73.15	\$74.61	\$76.10	\$77.62	\$79.18	\$80.76	\$82.37	\$84.02
Recreation/per restroom (per unit)	\$35.61	\$36.32	\$37.05	\$37.79	\$38.54	\$39.31	\$40.10	\$40.90	\$41.72	\$42.55
Residential (per account)	\$53.13	\$54.20	\$55.28	\$56.39	\$57.51	\$58.66	\$59.84	\$61.03	\$62.25	\$63.50

## ATTACHMENT 3

## Projected Sewer Rates

*City of Kenai Water and Sewer Rate Study*

Restaurant (per unit)	\$4.73	\$4.82	\$4.92	\$5.02	\$5.12	\$5.22	\$5.32	\$5.43	\$5.54	\$5.65
Restaurant/Bar (per unit)	\$4.73	\$4.82	\$4.92	\$5.02	\$5.12	\$5.22	\$5.32	\$5.43	\$5.54	\$5.65
School (per unit)	\$2.13	\$2.18	\$2.22	\$2.26	\$2.31	\$2.36	\$2.40	\$2.45	\$2.50	\$2.55
Shops (per account)	\$12.72	\$12.97	\$13.23	\$13.50	\$13.77	\$14.04	\$14.33	\$14.61	\$14.90	\$15.20
Sleeping Rooms (per unit)	\$14.34	\$14.63	\$14.92	\$15.22	\$15.52	\$15.83	\$16.15	\$16.47	\$16.80	\$17.14
Theater (per unit)	\$0.25	\$0.26	\$0.26	\$0.27	\$0.27	\$0.28	\$0.28	\$0.29	\$0.29	\$0.30
<b>Metered Customers</b>										
5/8" or 3/4"	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
1"	\$53.65	\$54.72	\$55.81	\$56.93	\$58.07	\$59.23	\$60.42	\$61.62	\$62.86	\$64.11
1 1/2"	\$135.05	\$137.75	\$140.51	\$143.32	\$146.19	\$149.11	\$152.09	\$155.13	\$158.24	\$161.40
2"	\$201.66	\$205.69	\$209.81	\$214.00	\$218.28	\$222.65	\$227.10	\$231.64	\$236.28	\$241.00
3"	\$305.25	\$311.36	\$317.59	\$323.94	\$330.42	\$337.02	\$343.76	\$350.64	\$357.65	\$364.81
4"	\$458.81	\$467.98	\$477.34	\$486.89	\$496.63	\$506.56	\$516.69	\$527.03	\$537.57	\$548.32
<b>Volume Charge (\$/000 gallons)</b>	\$5.27	\$5.37	\$5.48	\$5.59	\$5.70	\$5.82	\$5.93	\$6.05	\$6.17	\$6.29