KODIAK CITY COUNCIL

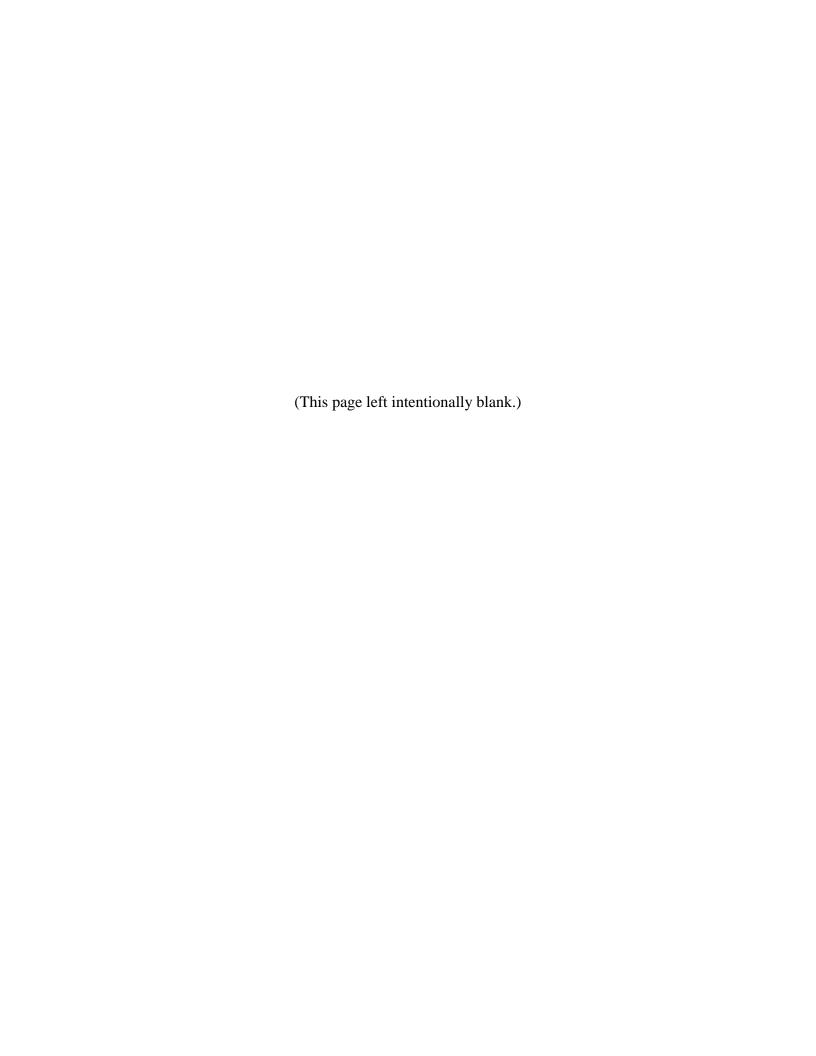
WORK SESSION AGENDA

Tuesday, April 23, 2019 Kodiak Public Library Multi-Purpose Room 7:30 p.m.

Work sessions are informal meetings of the City Council where Councilmembers review the upcoming regular meeting agenda packet and seek or receive information from staff. Although additional items not listed on the work session agenda are sometimes discussed when introduced by the Mayor, Council, or staff, no formal action is taken at work sessions and items that require formal Council action are placed on a regular Council meeting agenda. Public comments at work sessions are NOT considered part of the official record. Public comments intended for the "official record" should be made at a regular City Council meeting.

Discussion Items

1.	Public Comments (limited to 3 minutes)	
2.	Review of Sewer Rate Study Recommendations	1
3.	Siren Update/Survey	.24
4.	City Clean Up Day	
5.	Donation of Old Ambulance	.56
6.	Elected Officials Training/Travel Requests	
7.	April 25, 2019, Agenda Packet Review	



Wastewater User Rate Study

Prepared for

City of Kodiak

February 2019



Contents

Section			Page
			4.4
		e Study	
1.1	•	round Information Customer Data	
	1.1.1 1.1.2		
	1.1.2	Historic Data Existing Rates	
	1.1.3	Historic Revenues	
	1.1.4	Historical Operation and Maintenance Expenses	
1.2		nstorical Operation and Maintenance Expenses g Debt Service Expenses	
2.1		nptions	
2.2	•	ted O&M	
2.3	•	I Improvements	
2.4		Service	
2.5		ue Requirements	
2.6	•	sed Rates	
2.7	Projec	ted System Revenues	
	2.7.1	Impact on Typical User Bills	
2.8	2.7.2	Bill Comparison with Other Communitiessions and Recommendations	
Tables			
Table 1 Se	wer Custor	ner Data, FY 2018	1-1
		omer Data, FY 2015-2018	
		r Monthly Charge, FY 2019	
		d Maintenance Expenses, FY 2016-2018	
4		Service, FY 2018-19	
	_	erating Expenses	
		vement Program, 2020-2024	
		venue Requirements	
	-	nual Rate Increases	
		otal System Revenue with Proposed Rate Adjustme	
	- ,		
Figures			
Figure 1. Hi	storical Rev	venues, FY 2015-2017	Error! Bookmark not defined.
Figure 2. To	tal Budget	ed Utility Operating Expenses, FY 2018	Error! Bookmark not defined.
_	_	nual Debt Service	
-	-	quirements and Rate Revenues	
-		Coverage Wastewater System	
-		ential Wastewater Bills, Proposed Rates (FY 2019–	
	•	of Kodiak's Residential Sewer Bills with Other Com	•

Appendices

A Projected Wastewater RatesB Sources and Uses of Funds

Acronyms

ADEC Alaska Department of Environmental Conservation

CIP Capital Improvement Plan

EPA Environmental Protection Agency

ERU Equivalent Residential Unit

FY Fiscal Year

O&M Operations and Maintenance

PERS Public Employee Retirement System

USCG United States Coast Guard



Wastewater User Rate Study

In May 2018, the City of Kodiak ("the City") commissioned CH2M HILL to update its sewer rates. The purpose of this study is to determine if projected rate revenue requirements related to operation and maintenance and capital improvements will require additional rate increases in the future. This report presents the results of CH2M HILL's wastewater rate analysis and proposed wastewater rates for the City. CH2M HILL recommends that the City adjust its wastewater rates to help ensure that sufficient revenues will be generated to meet projected operating and capital costs as well as meet current debt service requirements and other financial commitments.

1.1 Background Information

The City maintains and operates a wastewater utility that receives domestic strength wastewater from residential and commercial customers in Kodiak, Alaska, and surrounding areas. The utility also provides treatment to septic haulers and the United States Coast Guard (USCG) station.

The City is a public corporation that is governed by the City Council. The day-to-day operations of the system are directed by the Public Works Director and a staff of approximately 11 wastewater personnel. The utility operates as an enterprise fund and pays for its operating and capital costs through user charges. The utility tracks expenses for three different cost centers: Wastewater Treatment O&M, Compost Facility, and Collection. The utility also has a Sewer Improvement fund to track revenues and expenditures for capital projects. The City's fiscal year ("FY") runs from July 1st to June 30th (that is, "FY 2018" means the data are from July 2017 through June 2018).

The Sewer Utility Fund-Wastewater Treatment division is responsible for the treatment and discharge of sanitary sewage in compliance with EPA and ADEC regulations. This division maintains and operates the 3.2 million gallons per day wastewater treatment facility and collection system, twenty-two sewage lift stations, a Supervisory Control and Data Acquisition Software System, and the laboratory. The treatment facility was originally placed in service in 1978 and has been expanded and upgraded in 1999 and 2000.

The Sewer Utility also operates a compost facility that produces Class AAEQ certified compost based on federal EPA and State of Alaska DEC regulations.

1.1.1 Customer Data

Table 1 presents the total number of customers, equivalent residential units (ERUs), and estimated revenues for the sewer utility for FY 2018. The wastewater utility is an unmetered system and converts multi-family and commercial customers to ERUs to estimate wastewater production. An ERU represents the amount of wastewater a typical single family residential unit produces (1 ERU = approximately 7,500 gallons per month). Customer information is presented for inside city and outside city customers. The total number of current active sewer accounts as of April 2018 is approximately 3,000. Nearly 80 percent of total customers are single and multi-family accounts. Total number of ERUs is approximately 4,356. Total sewer sales revenue in FY 2018 were estimated to be approximately \$4.2 million.

4

Table 1. Sewer Customer Data, FY 2018

	Number o	of Customers	Numbe	er of ERUs	Estimated Revenues	
						% of
Customer Class	FY 2018	% of Total	FY 2018	% of Total	FY 2018	Total
Inside City						
Single Family	1,034	34.2%	871.0	20.0%	\$798,026	18.8%
Multi Family	296	9.8%	1,030.5	23.7%	\$944,148	22.3%
Commercial/Industrial	230	7.6%	1,048.1	24.1%	\$960,304	22.7%
Vacant	220	7.3%	70.0	1.6%	\$64,142	1.5%
Subtotal	1,780	58.9%	3,019.5	69.3%	\$2,766,620	65.3%

Outside City						
Single Family	899	29.8%	796.5	18.3%	\$874,748	20.7%
Multi Family	173	5.7%	469.5	10.8%	\$515,624	12.2%
Commercial/Industrial	26	0.9%	49.5	1.1%	\$54,363	1.3%
Vacant	143	4.7%	21.0	0.5%	\$23,058	0.5%
Subtotal	1,241	41.1%	1,336.5	30.7%	\$1,467,793	34.7%
Total	3,021		4,356.0		\$4,234,413	

Note

Single family ERUs include Senior Citizen rate class which is equal to 0.5 ERUs

Vacant includes single family, multi family, and commercial

Customer and ERU counts from June of each year for FY 2015-2017; For FY 2018, billing data from April

1.1.2 Historic Data

Table 2 lists the number of sewer customers and ERUs from FY 2015 through FY 2018. The utility has experienced a slight increase in sewer customers the past few years from 2,856 to 3,021, an average annual increase of 1.9 percent. However, the total number of ERUs has declined at an average annual rate of 1.1 percent, decreasing from 4,504 ERUs in 2015 to 4,356 ERUs in 2018. The decrease in ERUs is associated with an increase in vacant customers both inside and outside the city that are charged half the regular rate and changes in commercial and multi-family accounts that resulted in less ERUs.

Table 2. Historic Customer Data, FY 2015-2018

		Numb	er of Custo	omers			Nu	mber of EF	RUs	
	FY	FY	FY	FY	%	FY	FY	FY	FY	%
Customer Class	2015	2016	2017	2018	Change	2015	2016	2017	2018	Change
Inside City										
Single Family	1,037.0	1,032.0	1,033.0	1,034.0	-0.1%	896.0	871.0	872.5	871.0	-0.9%
Multi Family	286.0	291.0	294.0	296.0	1.2%	1,066.5	1,056.5	1,056.0	1,030.5	-1.1%
Commercial/Industrial	222.0	223.0	224.0	230.0	1.2%	1,087.4	1,029.0	1,002.3	1,048.1	-1.2%
Vacant	149.0	185.0	200.0	220.0	13.9%	49.0	58.0	57.5	70.0	12.6%
Subtotal	1,694.0	1,731.0	1,751.0	1,780.0	1.7%	3,098.9	3,014.5	2,988.4	3,019.5	-0.9%
Outside City										
Single Family	879.0	887.0	897.0	899.0	0.8%	798.5	805.5	807.5	796.5	-0.1%
Multi Family	161.0	163.0	167.0	173.0	2.4%	537.5	519.5	453.0	469.5	-4.4%
Commercial/Industrial	24.0	26.0	26.0	26.0	2.7%	47.5	40.0	41.0	49.5	1.4%
Vacant	98.0	114.0	125.0	143.0	13.4%	22.0	18.0	23.0	21.0	-1.5%
Subtotal	1,162.0	1,190.0	1,215.0	1,241.0	2.2%	1,405.5	1,383.0	1,324.5	1,336.5	-1.7%
Total	2,856.0	2,921.0	2,966.0	3,021.0	1.9%	4,504.4	4,397.5	4,312.9	4,356.0	-1.1%

1.1.3 Existing Rates

Tables 3 presents the current rate schedules for the City's sewer system. The City's rate structure is a flat fee per month based on customer type. As mentioned previously, the sewer system is an unmetered system and converts multi-family and commercial customers to ERUs to estimate wastewater production. An ERU represents the typical amount of wastewater a typical single family residential unit produces. The basis for the charge for each customer charge is presented in Table 3.

Rates are presented for inside city and outside city customers. The current sewer charge for a residential customer is \$80.16 per month. Outside city customer rates are 20 percent higher than inside city rates. The City also has a volume charge for septic haulers and the USCG that dump domestic waste at the treatment plant.

Table 3. Current Sewer Monthly Charge, FY 2019

Customer Type	Basis for Charge	Inside City (\$/mo)	Outside City (\$/mo)
---------------	------------------	------------------------	-------------------------

Apartments, per unit	one unit per dwelling	\$80.16	\$96.09
Auditorium	on unit per 3,500 sf of floor area or fraction thereof	\$80.16	\$96.09
Bakery	one unit per 200 sf of patron area or fraction thereof	\$80.16	\$96.09
Bar	one unit per 200 sf of patron area or fraction thereof	\$80.16	\$96.09
Beauty Shops/Barber/Animal Grooming	one unit per facility/residence	\$80.16	\$96.09
	one-half unit per operator chair/tub	\$40.09	\$48.04
B&B / Boarding House	one unit per facility/residence	\$80.16	\$96.09
	plus one-half unit per guest room	\$40.09	\$48.04
Churches	one unit per facility	\$80.16	\$96.09
Construction	one-half the regular rate for intended use of building		
Day Care Facilities	one unit per business/dwelling unit	\$80.16	\$96.09
	plus one-quarter unit for each 5 persons or fraction thereof	\$20.04	\$24.03
Dining Facility/Café/Bakeries	one unit per 200 sf of patron area	\$80.16	\$96.09
Doctor's office, medical clinic, dentist	one unit per 6 employees or fraction thereof	\$80.16	\$96.09
Dry Cleaners	one unit per 6 employees or fraction thereof	\$80.16	\$96.09
Gas Station / Auto Repair Shop	2 units per business	\$160.31	\$192.18
Hospital/Major Care Center	one unit per bed	\$80.16	\$96.09
Hotel/Motel	one-half unit per guest room w/o cooking	\$40.09	\$48.04
	three-quarter unit per guest room w/cooking	\$60.11	\$72.07
Industrial	one unit per 6 employees or fraction thereof	\$80.16	\$96.09
Laundries and bath houses	three-quarter unit per per washing machine	\$60.11	\$72.07
Meats or Produce Retail Stores	one unit per 6 employees or fraction thereof	\$80.16	\$96.09
Museums	one unit per dwelling	\$80.16	\$96.09
Office/Retail	one unit per 6 employees or fraction thereof	\$80.16	\$96.09
Powerhouses	one unit per 6 employees or fraction thereof	\$80.16	\$96.09
Residential (no additional charge for home-based office/retail use)	one unit per dwelling	\$80.16	\$96.09
Rest Home/Long Term Care	one unit per 2 beds or fraction thereof	\$80.16	\$96.09
Schools	one unit per 20 persons in daily attendance, including staff	\$80.16	\$96.09
Senior Citizens (primary residence)	one-half unit	\$40.09	\$48.04
Vacant Rate, per month	one-half the regular rate for intended use of building	\$40.09	\$48.04
Vacant Rate Noncompliance Fee		\$248.94	\$248.94
Warehouses	one unit per 6 employees or fraction thereof	\$80.16	\$96.09
Dump Fee			
disposal domestic sludge	per gallon	\$0.41	\$0.41
disposal septic tank/portable toilet water	per gallon	\$0.29	\$0.29

1.1.4 Historic Revenues

Figure 1 shows historical revenues for the sewer utility for FY 2016 through FY 2018 and budgeted revenues for 2019. Total system revenues ranged from approximately \$4.1 million in FY 2016 to nearly \$4.5 million in FY 2018. In FY 2018, sewer service rate revenues accounted for approximately \$4.2 million, or 94 percent, of total revenue. The remaining non-rate revenue was generated by miscellaneous other revenues, intergovernmental Public Employee Retirement System (PERS) revenue, septic discharges, compost sales, and laboratory fees. A sewer rate increase in FY 2019 is estimated to generate revenues of approximately \$4.7 million.

6

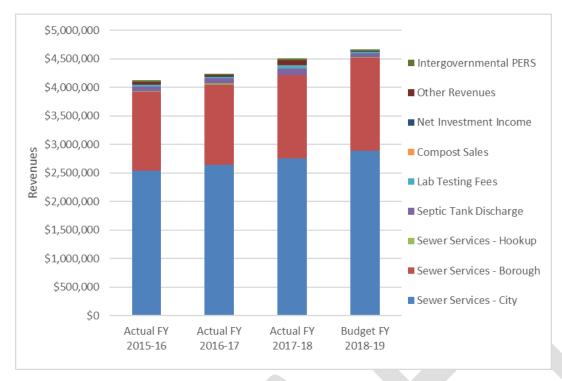


Figure 1. Historical Revenues, FY 2016-2018 and Budget FY 2019

1.1.5 Historical Operation and Maintenance Expenses

O&M expenses include all costs associated with operating and maintaining the sewer utility, including salaries and wages, benefits, utilities, materials and supplies, and general and administrative costs for the treatment plant, collection system, and compost facility. Table 4 summarizes actual cash operating expenses for FY 2016 through FY 2018. Cash operating expenses, which exclude depreciation and interest expense, totaled approximately \$2.7 million in FY 2018. Public utility service expenses decreased dramatically from FY 2016 to FY 2018. These savings were largely offset by increases in interfund transfers and salaries and wages.

Table 4. Operation and Maintenance Expenses, FY 2016-2018

Item	Actual FY 2016	Actual FY 2017	Actual FY 2018	Budget FY 2019
Salaries & Wages	\$604,667	\$608,137	\$691,779	\$730,034
Employee Benefits	\$545,496	\$544,617	\$570,094	\$755,802
Professional Services	\$35,089	\$42,175	\$43,945	\$46,500
Support Goods & Services	\$336,458	\$235,042	\$302,792	\$332,532
Repairs & Maintenance	\$51,659	\$66,934	\$44,850	\$61,600
Public Utility Services	\$484,836	\$234,772	\$232,976	\$254,800
Capital Outlays	\$14,524	\$34,371	\$34,938	\$194,544
Interfund Charges	\$643,664	\$823,972	\$792,808	\$801,618
Total	\$2,716,393	\$2,590,020	\$2,714,184	\$3,177,430

Note: Includes costs for treatment plant, collection system, and compost facility

Figure 2 presents a breakdown of operating expenses for FY 2019 budget, which are expected to be nearly \$3.2 million. Expense items that experienced the largest increase from FY 2018 include salaries and wages, benefits,

and capital outlays. Salaries, wages, and benefits accounted for 47 percent of cash-related operating expenses. Interfund charges that cover the utility's share of administrative, finance, and IT support represented 25 percent of total utility cash operating costs. Support goods and services accounted for 11 percent of the FY 2019 budget.

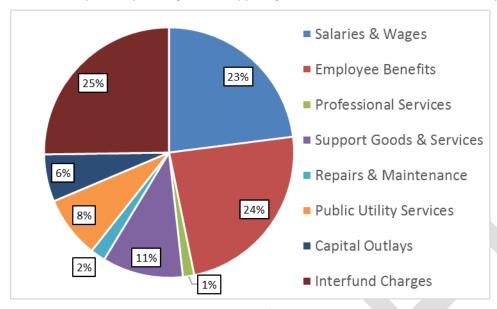


Figure 2. Total Budgeted Utility Operating Expenses, FY 2019

1.2 Existing Debt Service Expenses

Existing debt service costs are the annual principal and interest payments associated with outstanding loans. The sewer utility currently has four outstanding loans. Total annual debt service payments in FY 2018 are approximately \$224,000. The City is expected to pay off a \$550,000 loan in FY 2019, which will reduce debt service payments in FY 2020 to \$169,000. Table 5 provides a summary of the utility's existing debt service.

8

Table 5. Existing Debt Service, FY 2018-19

	Loan	Annual
	Amount	Debt
Loan		Service
DEC Loan ACWF 503111	\$550,000	\$55,000
DEC Loan ACWF 503121	\$1,000,000	\$47,287
DEC Loan ACWF 503101	\$341,930	\$32,302
DEC Loan	\$1,794,604	\$89,730
Total		\$224,319

Financial Plan

2.1 Assumptions

This financial analysis and rate study is based on projections of costs (both O&M and capital) that the City is expected to incur during the 5-year planning period, FY 2020 through FY 2024, and the revenues that utility 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 utility's capital spending.

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

- Wastewater sales under existing rates are expected to remain constant over the analysis period.
- O&M costs specific annual escalation factors used include:
 - salaries/wages: 2.5 percent
 - benefits/group insurance: 4.0 percent
 - materials & supplies: 3.0 percent
 - utilities: 5.0 percent
 - general inflation: 3.0 percent
- Capital costs will increase at an annual rate of 3.0 percent to account for inflation
- Interest earned on investments: 0.5%
- Debt service coverage requirement: 1.20
- Operating contingency equal to 60 days of operating expenses
- The target beginning balance for the sewer utility fund will be equal to the 60 days of operating contingency.
 Remaining available funds will be transferred internally to the sewer improvement fund to pay for upcoming capital needs
- O&M costs associated with the disinfection system will be approximately \$100,000 (FY 2019\$) and will begin in FY 2024.
- The City will use available operating and capital reserves to pay for unanticipated operating expenses and scheduled capital projects.
- Beginning available balance in sewer utility fund FY 2019: \$2.7 million
- Beginning available balance in sewer improvement fund FY 2019: \$2.0 million

2.2 Projected O&M

The total sewer system O&M expenses include salaries, benefits materials and supplies, utilities, and other daily operating expenses for the treatment plant, collection system, and compost facility. Table 6 presents the projected operating expenses for the utility for the analysis period. The utility's operating expenses are budgeted to be nearly \$3.2 million in FY 2019. Over the analysis period, O&M expenses are estimated to increase to approximately \$3.8 million by FY 2024, a cumulative increase of nearly 22 percent from FY 2019 levels. Interfund charges include the 10 percent sales revenue transfer from the sewer utility fund to the sewer improvement fund.

9

Table 6. Projected Operating Expenses

Expenditures	Budget FY 2019	Projected FY 2020	Projected FY 2021	Projected FY 2022	Projected FY 2023	Projected FY 2024
Salaries & Wages	\$730,000	\$748,000	\$767,000	\$786,000	\$806,000	\$826,000
Employee Benefits	\$756,000	\$801,000	\$849,000	\$900,000	\$954,000	\$1,011,000
Professional Services	\$47,000	\$48,000	\$49,000	\$51,000	\$52,000	\$54,000
Support Goods & Services	\$333,000	\$343,000	\$353,000	\$363,000	\$374,000	\$385,000
Repairs & Maintenance	\$62,000	\$63,000	\$65,000	\$67,000	\$69,000	\$71,000
Public Utility Services	\$255,000	\$268,000	\$281,000	\$295,000	\$310,000	\$325,000
Capital Outlays	\$195,000	\$200,000	\$206,000	\$213,000	\$219,000	\$226,000
Interfund Charges	\$412,000	\$424,000	\$437,000	\$450,000	\$463,000	\$477,000
Sewer Sales Fee	\$452,000	\$488,000	\$527,000	\$558,000	\$592,000	\$616,000
Additional O&M for New Facility	\$0	\$0	\$0	\$0	\$0	\$116,000
Total	\$3,242,000	\$3,383,000	\$3,534,000	\$3,683,000	\$3,839,000	\$4,107,000

2.3 Capital Improvements

The sewer utility operates an Improvement Fund to track utility capital expenditures. The primary source of revenue for the Improvement fund is the sewer sales fee transfer from the operating fund. The Sewer Sales fee is an annual transfer equal to 10 percent of sales revenues. For FY 2018 the actual amount transferred was approximately \$422,000.

For FY 2019, total capital expenditures are expected to total nearly \$3.8 million. It was assumed the sewer utility would receive a transfer from the water utility to complete the Downtown Phase 3 project (nearly \$1.8 million). Available fund balance and the sales revenue transfer from the sewer utility fund would be used to pay for the other projects planned for FY 2019.

The City's capital improvement plan (CIP) includes multiple wastewater capital improvement projects during the period from FY 2020–FY 2024, with a total estimated cost of \$33.2 million (2019 dollars). The plan includes repair and replacement of infrastructure at the treatment plant, a new treatment processes to meet EPA regulations, and repair aging collection system pipe in residential and downtown service areas. The largest expenditures during the analysis period are:

- Disinfection system (FY 2020): \$5.0 million
- Wastewater treatment plant upgrade (FY 2022): \$18.4 million

The capital improvements include an annual escalation rate of 3.0 percent. Inflated capital improvement costs are estimated at \$39.9 million. The utility plans to fund the capital improvements from reserves, rate revenue, and debt proceeds. Table 7 presents all the projects included in the CIP for the analysis period.

Table 7. Capital Improvement Program, 2020-2024

		Year of	Budget	Projected	Projected	Projected	Projected	Projected
Project	2019 Cost	Construction	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
Downtown Phase 3-Center St	\$1,779,750	2019	\$1,779,750					
Lift Station Electric	\$25,000	2019	\$25,000					
APDES Permit Renewal	000′69\$	2019	000'69\$					
Sewer Utility Rate Study	\$39,000	2019	\$39,000					
Upgrade Lift Stations #1 & #2	\$700,000	2019	\$700,000					
Upgrade Lift Stations #3 & #4	\$900,000	2019	\$900,000					
Lift Station #5 Rehab	\$200,000	2019	\$200,000					
I&I Repair	\$20,000	2019	\$20,000					
Sewer Utility Deferred Maintenance	\$72,000	2019	\$72,000					
Spill Prevention Containment & Countermeasures	\$11,600	2020		\$11,948				
Downtown Phase 4-Mecca to Center St	\$96,250	2020		\$99,138				
Inflow & Infiltration Repair Materials (annual)	\$85,000	2020		\$87,550				
Disinfection system	\$5,000,000	2020		\$5,150,000				
Downtown Phase 4-Mecca to Center St	\$1,771,000	2021			\$1,878,854			
Aleutian Homes Phase 7-Hemlock St	\$87,500	2021			\$92,829			
Water Utility Rate Study	\$0	2021			\$0			
Aleutian Homes Phase 7-Hemlock St	\$1,931,300	2022				\$2,110,384		
Downtown Phase 5-Mecca to Rezanof	\$108,526	2022				\$118,589		
Wastewater Treatment Plant Upgrade	\$18,400,000	2022				\$20,106,177		
Downtown Phase 5-Mecca to Rezanof	\$1,543,929	2023					\$1,737,706	
Downtown Phase 6-Alleys and Parking between Mall & Center St	\$140,875	2023					\$158,556	
Aleutian Homes Phase 8-Carolyn & Wilson St	\$129,402	2023					\$145,643	
Downtown Phase 6-Alleys and Parking between Mall & Center St	\$1.891.750	2024						\$2.193.057
Downtown Phase 7-Mission Rd, Marine Way to		,						
Kashevarof	\$93,625	2024						\$108,537
Aleutian Homes Phase 8-Carolyn & Wilson St	\$1,827,763	2024						\$2,118,878
Total			\$3,804,750	\$5,348,636	\$1,971,683	\$22,335,150	\$2,041,905	\$4,420,472
Debt funded			\$0	\$5,150,000	\$0	\$20,106,177	\$0	\$4,311,935
Pay Go			\$3,804,750	\$198,636	\$1,971,683	\$2,228,973	\$2,041,905	\$108,537

2.4 Debt Service

The system debt service requirements consist of the principal and interest payments on its outstanding debt and any new debt issued to pay for capital improvements. Revenues more than the Debt Service and O&M costs can be used to pay for capital outlays. The annual debt service payment on the system's currently outstanding debt amounts to approximately \$224,000 in FY 2019. The annual debt service payment is projected to decrease to approximately \$169,000 in FY 2020.

This analysis assumed new debt would be issued to pay for the disinfection project (FY 2020), the wastewater treatment plant upgrade (FY 2022), and sewer pipe replacement projects (FY 2024). The financial analysis assumes that the City will not receive any grants or state sponsored low interest loans to cover the costs associated with the CIP and, instead, will be required to issue revenue bonds to pay for a significant portion of the projects. The assumed loan has a term of 30 years, an interest rate of 5.0 percent, issuance costs of 2.0 percent, and a reserve requirement of 10 percent of the loan amount. It was assumed the issuance costs and reserve requirement would be capitalized.

Figure 3 presents the projected annual debt service for existing and new debt over the analysis period. Annual debt service payments on existing and new debt are projected to increase from \$224,000 in FY 2019 to nearly \$2.2 million in FY 2024.

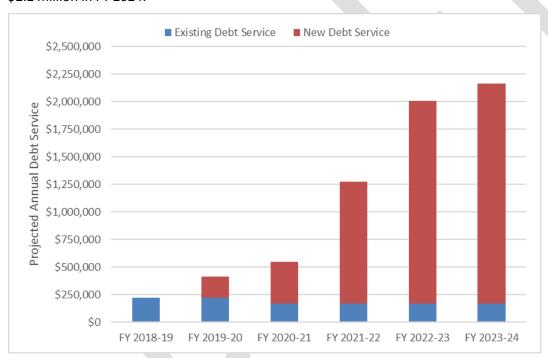


Figure 3. Projected Annual Debt Service

Include chart showing projected debt service for the three bond issues identified in Table 6.

2.5 Revenue Requirements

For this analysis, the cash basis method was used to determine the revenue requirements of the sewer utility. The essence of this method is that the revenues generated by the City must be sufficient to cover all its cash needs, as well as any other financial commitments for the period of the analysis. The components of the City's revenue requirements include:

- operation and maintenance (O&M) expenses
- annual capital improvement projects and renewal and replacement that are funded from system revenues

- Capital Contribution to Capital Improvement Fund
- debt service requirements

Table 8 summarizes the revenue requirements for the analysis period and the projected rate revenue from existing rates and projected rates. The wastewater system rate revenue requirement is expected to range between approximately \$5.0 in FY 2020 to nearly \$6.3 million through FY 2024. To repay the existing and projected debt service, and to pay for the additional capital and operating expenses forecast over the study period, sewer rate increases will be required.

Table 8. Projected Revenue Requirements

	Projected	Projected	Projected	Projected	Projected
Ite	-	-	-		-
m	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
Revenue Requirements					
Operation and Maintenance					
Wastewater Treatment Expense	\$1,879,621	\$1,955,043	\$2,033,912	\$2,116,405	\$2,318,633
Compost Facility Expense	\$635,008	\$658,118	\$682,184	\$707,248	\$733,360
Collection expenses	\$868,271	\$921,257	\$967,417	\$1,016,089	\$1,055,578
Subtotal	\$3,382,901	\$3,534,418	\$3,683,513	\$3,839,742	\$4,107,571
Capital Costs					
Existing Debt Service	\$224,319	\$169,319	\$169,319	\$169,319	\$169,319
New Debt Service	\$188,000	\$376,000	\$1,108,000	\$1,840,000	\$1,997,000
Transfer to Improvement Fund	\$4,040,166	\$1,328,017	\$768,162	\$218,852	\$16,009
Subtotal	\$4,452,485	\$1,873,336	\$2,045,481	\$2,228,171	\$2,182,328
Total Requirements	\$3,566,905	\$7,835,386	\$5,407,754	\$5,728,994	\$6,067,913
Less Non-rate revenue					
Other revenue	\$85,300	\$85,300	\$85,300	\$85,300	\$85,300
Subtotal	\$85,300	\$85,300	\$85,300	\$85,300	\$85,300
Uses of (additions to) Fund Balance	\$2,798,826	-\$24,907	-\$24,509	-\$25,682	-\$44,027
Annual Requirements from Rates	\$4,951,260	\$5,347,361	\$5,668,202	\$6,008,295	\$6,248,626

Note: Collection expenses includes 10 percent sales fee transfer to the improvement fund

2.6 Proposed Rates

As of the beginning of FY 2019, the City wastewater utility has an estimated \$2.7 million in available in reserves in the operating fund and \$2.0 million in the improvement fund. As discussed previously, this analysis assumes that the utility will use a combination of rate revenue, existing reserves, and debt to pay for the planned projects. To have sufficient funds to pay for increases in operating expenses, repay the existing and new debt service, maintain appropriate debt service coverage requirements, and maintain sufficient operating reserves, sewer rate increases will be required.

For this analysis, rate increases are introduced every year beginning in FY 2020. Table 9 presents the projected annual rate increases needed to meet the utility's revenue requirements and the impact to the inside city residential rate. The rate increases presented would be applied to both fixed and volume charges and would impact all customer classes. Appendix A presents the sewer rate schedule for all customers for FY 2020-2024.

Table 9. Projected Annual Rate Increases

Fiscal Year	Annual Sewer Increase	Residential Rate (\$/mo)
FY 2020	8.0%	\$80.16
FY 2021	8.0%	\$86.58
FY 2022	6.0%	\$91.77
FY 2023	6.0%	\$97.28
FY 2024	4.0%	\$101.17
Overall Increase*	32.5%	\$24.82

^{*}Overall increase represents compounded increase over the analysis period.

If the City is successful in obtaining external funding (i.e. grants or low interest loans) for the planned capital projects, the additional debt and rate increases may be reduced.

2.7 Projected System Revenues

The revenue projections are made up of two major sources: operating revenues and non-operating revenues. Operating revenues include sewer service sales, septic tank discharge revenue, compost sales, and miscellaneous revenues. Sewer service sales revenues under the current rates in FY 2019 amount to \$4.6 million for the wastewater system. Revenue from intergovernmental PERS revenue, interest, laboratory fees, and other revenues are approximately \$85,000 in FY 2019 and are projected to remain at this level throughout the study period.

Projected system rate revenues under existing rates are expected to remain stable at approximately \$4.6 million as the number of customers and wastewater revenues are projected to remain constant.

Table 10 presents the projected sewer revenues as well as miscellaneous revenues for the analysis period. Total sewer system revenues with proposed rate increases are projected to amount to \$4.6 million in FY 2019 and increase to approximately \$6.3 million in FY 2024. With the proposed rate adjustments, system revenues are projected to be sufficient to cover the projected system revenue requirements in each year of the study period.

Table 10. Projected Total System Revenue with Proposed Rate Adjustments

	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
Sewer Revenue	\$4,584,500	\$4,951,260	\$5,347,361	\$5,668,202	\$6,008,295	\$6,248,626
Percentage Change		8.0%	8.0%	6.0%	6.0%	4.0%
Misc. Revenues	\$85,300	\$85,300	\$85,300	\$85,300	\$85,300	\$85,300
Total Revenue	\$4,669,800	\$5,036,560	\$5,432,661	\$5,753,502	\$6,093,595	\$6,333,926

Figure 4 presents the rate revenue requirements for the utility during the analysis period and projected revenues under existing and proposed rates. Rate revenue requirements consist of O&M expenses, administrative and general expenses, debt service requirements, and depreciation expenses. As Figure 3 illustrates, existing rate levels (green line) will not be sufficient to meet the projected revenue requirements, and increases in rate revenues will be necessary to pay for projected costs.



Figure 4. Revenue Requirements and Rate Revenues

Figure 5 presents the projected debt coverage for the wastewater system. The analysis shows that with the proposed rates, the System is projected to exceed the debt coverage requirements on the current and new bonded debt of 120 percent in each year of the study period. Debt service coverage is the amount of revenue that a utility must generate annually more than its operation, maintenance, and debt service requirements. This additional revenue is required by bond buyers as a condition of issuing revenue bonds; it provides the bond buyers a measure of security regarding debt repayment by the utility.

Debt service coverage requirements generally require net revenues (system income and revenue less operation and maintenance expenses) be at least 1.20 times the average annual principal and interest requirements of all outstanding bonds. The actual debt service coverage requirement will vary depending on the requirements presented in a loan's official statement. For this analysis, it was assumed the City would need to meet a debt service coverage requirement of 1.20. Based on the proposed wastewater rate increases, the analysis projects that the City will generate sufficient revenue to cover its projected expenses and to meet any bond coverage requirements for FY 2020 through FY 2024.

While the study period for this report covers FY 2020 to FY 2024, it should be noted that coverage beyond FY 2024 could drop below the 1.20 debt coverage requirements of all outstanding bonds. Additional rate adjustment may be required beyond FY 2024 to continue to meet the debt service coverage requirement and other system needs.

15

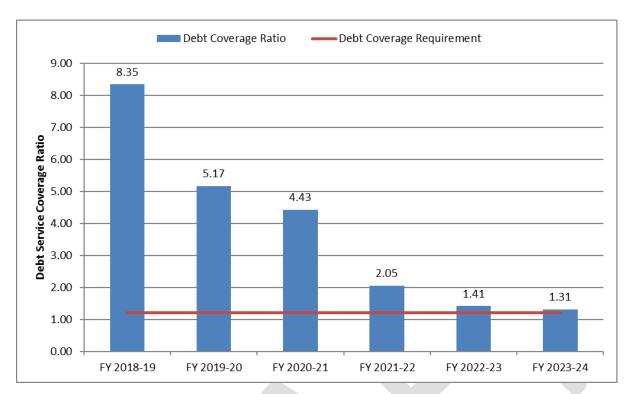


Figure 5. Debt Service Coverage City of Kodiak Wastewater Utility

See Appendix B for projected sources and uses of funds for the utility for the analysis period.

2.7.1 Impact on Typical User Bills

Figure 6 shows the impact of the proposed FY 2019–FY 2024 rates on the bills of typical residential users. Residential customers will see an increase in their monthly sewer bills of 27.5 percent, or \$21.01, over the 5-year study period.



2.7.2 Bill Comparison with Other Communities

Figure 7 presents a comparison of the City's residential sewer bills with other communities in Alaska. The chart shows that the City's current sewer bills are slightly higher than the average of the other communities. The projected bills for FY 2024 for the City are higher than most of the existing bills for the other communities surveyed. The bills for the other communities are expected to also increase from current levels over the projection period, although by how much is unknown.

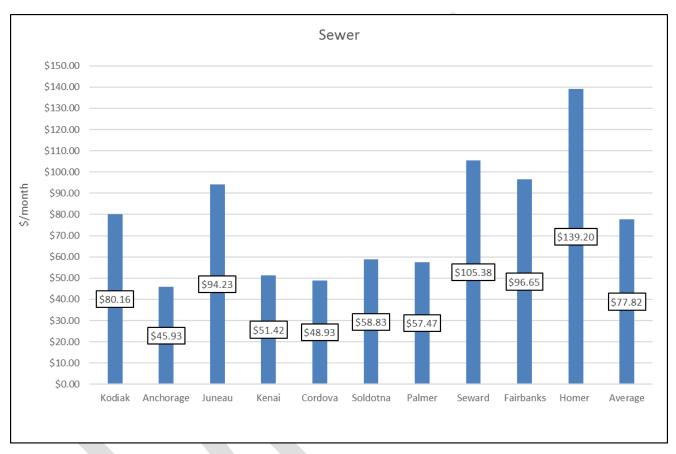


Figure 7. Comparison of Kodiak's Residential Sewer Bills with Other Communities

2.8 Conclusions and Recommendations

CH2M HILL recommends that the City adjust its wastewater rates in each year from FY 2020 through FY 2024 to help ensure that sufficient revenues will be generated to meet current debt service requirements and other financial commitments, and to cover current and projected revenue requirements.

With the proposed rate adjustments presented herein, the City's wastewater rates should generate sufficient revenues, under the forecast assumptions, to meet the wastewater system's needs through FY 2024.

In addition, CH2M HILL recommends:

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.

17

- Increase rates as needed in future years to meet the financial needs of the systems. The projected rate increases presented herein, are based on the best available data and assumptions developed by the City and CH2M HILL as of February 2019.
- The City should actively pursue other sources of funds to pay for the planned capital expenditures. While the grant process is very competitive, CH2M HILL recommends the City apply for grants through various state and federal agencies as well as grants offered by other organizations. The City should also pursue loans that have lower costs of capital than revenue bonds, such as those offered through ADEC or the United States Department of Agriculture. If the City can secure lower cost funding, the rates presented herein could be lowered to reflect the lower cost of debt.





Table A-1. Proposed Sewer Rate Schedules, Inside City FY 2020-2024

		Existing FY 2018-	Projected FY 2019-	Projected FY 2020-	Projected FY 2021-	Projected FY 2022-	Projected FY 2023-
Service Charge - Inside City	Basis for Charge	19	70	21	22	23	24
Apartments, per unit	one unit per dwelling	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Auditorium	on unit per 3,500 sf of floor area or fraction thereof	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Bakery	one unit per 200 sf of patron area or fraction thereof	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Bar	one unit per 200 sf of patron area or fraction thereof	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Beauty Shops/Barber/Animal Grooming	one unit per facility/residence	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
	one-half unit per operator chair/tub	\$38.18	\$40.09	\$43.30	\$45.89	\$48.65	\$50.59
B&B / Boarding House	one unit per facility/residence	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
	plus one-half unit per guest room	\$38.18	\$40.09	\$43.30	\$45.89	\$48.65	\$50.59
Churches	one unit per facility	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Construction	one-half the regular rate for intended use of building						
Day Care Facilites	one unit per business/dwelling unit	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
	plus one-quarter unit for each 5 persons or fraction thereof	\$19.08	\$20.04	\$21.64	\$22.94	\$24.32	\$25.29
Dining Facility/Café/Bakeries	one unit per 200 sf of patron area	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Doctor's office, medical clinic, dentist	one unit per 6 employees or fraction thereof	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Dry Cleaners	one unit per 6 employees or fraction thereof	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Gas Station / Auto Repair Shop	2 units per business	\$152.68	\$160.31	\$173.14	\$183.53	\$194.54	\$202.32
Hospital/Major Care Center	one unit per bed	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Hotel/Motel	one-half unit per guest room w/o cooking	\$38.18	\$40.09	\$43.30	\$45.89	\$48.65	\$50.59
	three-quarter unit per guest room w/cooking	\$57.25	\$60.11	\$64.92	\$68.82	\$72.95	\$75.86
Industrial	one unit per 6 employees or fraction thereof	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Laundries and bath houses	three-quarter uniter per washing machine	\$57.25	\$60.11	\$64.92	\$68.82	\$72.95	\$75.86
Meats or Produce Retail Stores	one unit per 6 employees or fraction thereof	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Museums	one unit per dwelling	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Office/Retail	one unit per 6 employees or fraction thereof	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Powerhouses	one unit per 6 employees or fraction thereof	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Residential (no additional charge for home-		\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
based office/retail use)	one unit per dwelling						
Rest Home/Long Term Care	one unit per 2 beds or fraction thereof	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Schools	one unit per 20 persons in daily attendance, including staff	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Senior Citizens (primary residence)	one-half unit	\$38.18	\$40.09	\$43.30	\$45.89	\$48.65	\$50.59
Vacant Rate, per month	one-half the regular rate for intended use of building	\$38.18	\$40.09	\$43.30	\$45.89	\$48.65	\$50.59
Vacant Rate Noncompliance Fee		\$237.08	\$248.94	\$268.85	\$284.99	\$302.08	\$314.17
Warehouses	one unit per 6 employees or fraction thereof	\$76.35	\$80.16	\$86.58	\$91.77	\$97.28	\$101.17
Dump Fee							
disposal domestic sludge	per gallon	\$0.39	\$0.41	\$0.44	\$0.47	\$0.50	\$0.52
disposal septic tank/portable toilet water	per gallon	\$0.28	\$0.29	\$0.32	\$0.34	\$0.36	\$0.37

A-1

Table A-2. Proposed Sewer Rate Schedules, Outside City FY 2020-2024

		Existing	Projected	Projected	Projected	Projected	Projected
		FY 2018-	FY 2019-	FY 2020-	FY 2021-	FY 2022-	FY 2023-
Outside City		19	20	21	22	23	24
Apartments, per unit	one unit per dwelling	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Auditorium	on unit per 3,500 sf of floor area or fraction thereof	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Bakery	one unit per 200 sf of patron area or fraction thereof	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Bar	one unit per 200 sf of patron area or fraction thereof	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Beauty Shops/Barber/Animal Grooming	one unit per facility/residence	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
	one-half unit per operator chair/tub	\$45.75	\$48.04	\$51.88	\$55.00	\$58.30	\$60.63
B&B / Boarding House	one unit per facility/residence	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
	plus one-half unit per guest room	\$45.75	\$48.04	\$51.88	\$55.00	\$58.30	\$60.63
Churches	one unit per facility	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Construction	one-half the regular rate for intended use of building						
Day Care Facilites	one unit per business/dwelling unit	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
	plus one-quarter unit for each 5 persons or fraction thereof	\$22.89	\$24.03	\$25.95	\$27.51	\$29.16	\$30.33
Dining Facility/Café/Bakeries	one unit per 200 sf of patron area	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Doctor's office, medical clinic, dentist	one unit per 6 employees or fraction thereof	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Dry Cleaners (one unit per 6 employees or		\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
fraction thereof)	one unit per 6 employees or fraction thereof						
Gas Station / Auto Repair Shop	2 units per business	\$183.03	\$192.18	\$207.56	\$220.01	\$233.21	\$242.54
Hospital/Major Care Center (one unit per bed)	one unit per bed	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Hotel/Motel	one-half unit per guest room w/o cooking	\$45.75	\$48.04	\$51.88	\$55.00	\$58.30	\$60.63
	three-quarter unit per guest room w/cooking	\$68.64	\$72.07	\$77.84	\$82.51	\$87.46	\$90.96
Industrial	one unit per 6 employees or fraction thereof	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Laundries and bath houses	three-quarter uniter per washing machine	\$68.64	\$72.07	\$77.84	\$82.51	\$87.46	\$90.96
Meats or Produce Retail Stores	one unit per 6 employees or fraction thereof	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Museums	one unit per dwelling	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Office/Retail	one unit per 6 employees or fraction thereof	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Powerhouses	one unit per 6 employees or fraction thereof	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Residential (no additional charge for hom-based		\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
office/retail use)	one unit per dwelling						
Rest Home/Long Term Care	one unit per 2 beds or fraction thereof	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Schools	one unit per 20 persons in daily attendance, including staff	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Senior Citizens (primary residence)	one-half unit	\$45.75	\$48.04	\$51.88	\$55.00	\$58.30	\$60.63
Vacant Rate, per month	one-half the regular rate for intended use of building	\$45.75	\$48.04	\$51.88	\$55.00	\$58.30	\$60.63
Vacant Rate Noncompliance Fee		\$237.08	\$248.94	\$268.85	\$284.99	\$302.08	\$314.17
Warehouses	one unit per 6 employees or fraction thereof	\$91.52	\$96.09	\$103.78	\$110.01	\$116.61	\$121.27
Dump Fee							-
disposal domestic sludge	per gallon	\$0.39	\$0.41	\$0.44	\$0.47	\$0.50	\$0.52
disposal septic tank/portable toilet water	per gallon	\$0.28	\$0.29	\$0.32	\$0.34	\$0.36	\$0.37

Appendix B Sources and Uses of Funds

Table B-1. Sources and Uses of Funds

	Actual	Budget	Projected	Projected	Projected	Projected	Projected
Item	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24
Sources of Funds							
Beginning Balance	\$1,293,610	\$2,697,650	\$3,354,919	\$556,093	\$581,000	\$605,509	\$631,191
Intergovernmental PERS	\$32,812	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
Sewer Services - City	\$2,755,042	\$2,895,000	\$3,126,600	\$3,376,728	\$3,579,332	\$3,794,092	\$3,945,855
Sewer Services - Borough	\$1,465,067	\$1,621,000	\$1,750,680	\$1,890,734	\$2,004,178	\$2,124,429	\$2,209,406
Sewer Services - Hookup	\$2,313	\$10,300	\$10,300	\$10,300	\$10,300	\$10,300	\$10,300
Septic Tank Discharge	\$108,424	\$68,500	\$73,980	\$79,898	\$84,692	\$89,774	\$93,365
Lab Testing Fees	\$43,902	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Compost Sales	\$8,850	\$0	\$0	\$0	\$0	\$0	\$0
Net Investment Income	\$28,788	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Other Revenues	\$67,616	\$0	\$0	\$0	\$0	\$0	\$0
Appropriation from Fund Balance	\$0	-\$549,182	\$0	\$0	\$0	\$0	\$0
Total Sources of Funds	\$5,806,425	\$6,818,268	\$8,391,479	\$5,988,754	\$6,334,503	\$6,699,104	\$6,965,117
Uses of Funds							
Wastewater Treatment	\$1,437,513	\$1,807,483	\$1,879,621	\$1,955,043	\$2,033,912	\$2,116,405	\$2,318,633
Compost Facility	\$540,629	\$612,811	\$635,008	\$658,118	\$682,184	\$707,248	\$733,360
Collection	\$736,042	\$818,736	\$868,271	\$921,257	\$967,417	\$1,016,089	\$1,055,578
Existing Debt Service	\$224,319	\$224,319	\$224,319	\$169,319	\$169,319	\$169,319	\$169,319
New Debt Service		\$0	\$188,000	\$376,000	\$1,108,000	\$1,840,000	\$1,997,000
Capital Contribution	\$0	\$0	\$4,040,166	\$1,328,017	\$768,162	\$218,852	\$16,009
Ending Fund Balance	\$2,421,755	\$2,822,476	0\$	\$0	\$0	\$0	\$0
Operating contingency	\$446,167	\$532,443	\$556,093	\$581,000	\$605,509	\$631,191	\$675,217
Total Uses of Funds	\$5,806,425	\$6,818,268	\$8,391,479	\$5,988,754	\$6,334,503	\$6,699,104	\$6,965,117
Capital Improvement Fund							
Beginning Balance	\$0	\$1,984,333	\$431,183	\$4,760,442	\$4,643,522	\$3,741,144	\$2,509,942
10% Sewer Revenues		\$451,600	\$487,728	\$526,746	\$558,351	\$591,852	\$615,526
Debt Proceeds	\$0	\$0	\$5,768,000	\$0	\$22,519,000	\$0	\$4,829,000
Transfer from Water Fund		\$1,800,000					
Transfer In	\$0	\$0	\$4,040,166	\$1,328,017	\$768,162	\$218,852	\$16,009
Subtotal	0\$	\$4,235,933	\$10,727,077	\$6,615,205	\$28,489,035	\$4,551,847	\$7,970,478
C C	Ç	7 000 7	767 046 15	64 074 683	טטט זיני כרט	700 041	CA A20 A72
בור היים ביים היים היים היים היים היים היים	O¢	55,604,750	55,546,050	51,971,063	051,555,255	52,041,905	54,420,472
Bond Issuance Cost		\$0	\$103,000	80	\$402,124	\$0	\$86,239
Transfer to Bond Reserve Fund	\$0	\$0	\$515,000	\$0	\$2,010,618	\$0	\$431,193
Subtotal	\$0	\$3,804,750	\$5,966,636	\$1,971,683	\$24,747,891	\$2,041,905	\$4,937,904
Ending Balance	\$0	\$431,183	\$4,760,442	\$4,643,522	\$3,741,144	\$2,509,942	\$3,032,574



Paul J. Merkouris, Manufacturer's Representative
Alster Communications, Alaska
Federal Signal Representative for Alaska

al Signal Representative for Alasi 3062 North Circle Anchorage, AK 99507-3955 W 907-344-9674 F 907-336-7912 C 907-301-2168 paul@dbmsale.com paul@alster.com

To: Police Chief, Tim Putney

From: Paul J Merkouris, Federal Signal Representative for Alaska

Date: March 29, 2019

Subject: Kodiak Site Survey for the Tsunami Warning/Notification System

Introduction

Federal Signal Corporation is focused on providing security and well-being to communities and workplaces around the world. As such, we offer a wide range of solutions and products for government and industry. Federal Signal is a manufacturer and worldwide supplier of public safety, signaling and communication equipment, fire trucks, emergency and street sweeping vehicles, industrial vacuum equipment, revenue control systems, and precision cutting tools. The Company is comprised of several major operating groups: Safety & Security, Fire Rescue, and Environmental Products & Tools.

Federal Signal, founded in 1901, has supported the needs of public safety and emergency management personnel for over 87 years. As a manufacturer of alert and notification systems, Federal Signal's Safety & Security Division provides critical communication solutions for public safety and emergency management personnel world-wide. Our primary products include Outdoor Warning Sirens, Command and Control Software, remote terminal units/controllers for sirens and other devices, indoor central amplification systems for mass notification, and tonealert radios. Federal Signal's Safety & Security Division partners with local and regional contractors to supply solutions uniquely adapted to meet the needs of Government and Safety officials focused on integrating critical communications with public warning.

Federal Signal, Safety and Security Division designs and manufactures equipment and systems for warning and notification at University Park, Illinois, USA.

Page 2 – Federal Signal

Operations

Federal Signal Corporation's University Park, IL, manufacturing facility is the world's largest facility dedicated to the design and manufacture of public warning and safety, signaling, and communication products.

Federal Signals Safety & Security Division designs, engineers, and manufactures complete siren systems within its own facility, which includes a radio frequency design and test facility; computer, microcontroller and software design and test; and an agency approved Anechoic Chamber and other test laboratories. This facility is: **ISO 9001, 2000-CERTIFIED BY DET NORSKE VERITAS,**

QUALITY SYSTEM CERTIFICATE No. CERT-8514-2002-AQ-HOU-RAB

Federal Signal systems and equipment can be found in 45 countries around the world. A great number of installations are in areas with diverse and adverse climate and environmental conditions, i.e., Hawaii, Latin America, Canada, Kuwait, the Kingdom of Saudi Arabia, the United Arab Emirates, Alaska and the Aleutian Islands.

Examples of Nuclear Power Warning Systems Implemented by Federal Signal

Nearly 60 percent of all nuclear power plants in the United States utilize Federal Signal siren systems. Since 1999, Federal Signal has been awarded 18 nuclear facility Upgrade projects equaling approximately 70% of all nuclear projects bid over this period.

Project Approach

Phase I requires Federal Signal to develop a community-wide siren system design/layout and related cost estimates for that work. You have also requested a suggested time frame for task completion. We will utilize all of the available information to develop a project approach taking into account such items as but not limited to:

- a) Availability of local resources i.e.: equipment that can be utilized for installation.
- b) Contact/coordination with local personnel in Kodiak, Alaska.
- c) Transportation of our equipment to Kodiak, Alaska.
- d) Siren equipment that meets the specifications of the project proposal.

Once all of the data has been gathered during this phase, that information will be conveyed to the Federal Signal, Safety and Control Division support team. Our team includes expertise in four major areas: Design Engineering, Application Engineering; Project Management; & Installation & Field Service.

Each Engineer holds either a BS or MS degree in specific fields of Electronic Engineering, Mechanical Engineering or Computer Science. The average tenure with Federal Signal is over ten years. The total number of Engineers employed by Federal Signal at our University Park, IL location is approximately 50. The specific number of Engineers assigned to the Safety & Security Group will vary depending upon schedules and developments throughout the year within the entire organization.

Page 3 – Federal Signal

Upon review by the Federal Signal, Safety and Security Division team members, a proposed scope of work for the City and Borough of Kodiak will be developed. All data that was gathered during the investigation process and any information that was received by others pertinent to the project will be incorporated into our approach. An estimated project budget will then be developed from this information that will provide all of the equipment necessary for a complete turn-key installation with all the required equipment and assemblies.

We will propose a Modulator Siren package and assemblies for Kodiak, AK with battery backup. Control and activation of your siren will occur from two central radio controlled radio and encoder (Police & Fire Department) at your designated locations.

Qualifications and Experience in Alaska

With this statement I will show that we have adequate qualifications and experience to provide the services required. I will include the names and phone numbers of three (3) Alaskan references that know of our qualifications here in Alaska. Since this is an Alaskan Project, I will quickly outline some of the Projects that we have either performed a complete turn key operation on, or have only provided equipment and installation information that was ultimately installed by that local Alaskan Community. Some of the complete turn key installations were/are: Fort Greely, Fort Richardson/Elmendorf AFB (Now called JBER, Fort Wainwright, and the Kenai Peninsula Borough that included the communities of Seward, Homer, Nanwalek, Port Graham and Seldovia, the Village of Perryville and the City of Chignik. Some of the other communities that have purchased our equipment are: Petersburg, the City of Nome, Dillingham, Cordova, Juneau, Eareckson Air Station on Shemya, Islands in the Aleutians. Our equipment is also installed on the North Slope of Alaska. In addition we have sold and installed Tsunami warning systems in Whittier, Sand Point, Sitka, Yakutat, Cordova, Savoogna and the City of Valdez, Alaska.

A Project Manager will be assigned to the Projects that are an employee or approved contractor of Federal Signal. This person will be responsible for all aspects of the project through project completion. This individual will coordinate the effort of the installation crew and all related services. Federal Signal has several experienced contractors that are familiar with our equipment and installation requirements in and around our diverse and unique State. Your installations will be installed by a team of installation professionals who have many years of field installation experience. You can be assured that whoever is assigned to your project should you select Federal Signal as you vendor of choice, that our onsite personnel are experienced and your project will have been completed professionally.

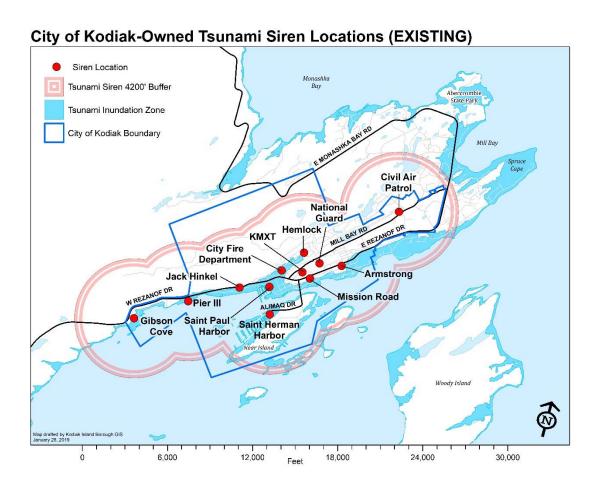
Once the installation is complete, Federal Signal factory personnel will perform Factory Acceptance Testing (FAT) to verify that all of the equipment sold is manufactured and assembled correctly and is operating as designed and in compliance with the contractual requirements. We will demonstrate that the system will communicate between Central Control and the distant siren locations. A full test of both the hardware and software operation will be completed on the system. Each component will be configured and serialized.

Once the Factory Acceptance Testing is completed, our installers will then train the appropriate local person/personnel on the operation and the basic maintenance of your Warning system.

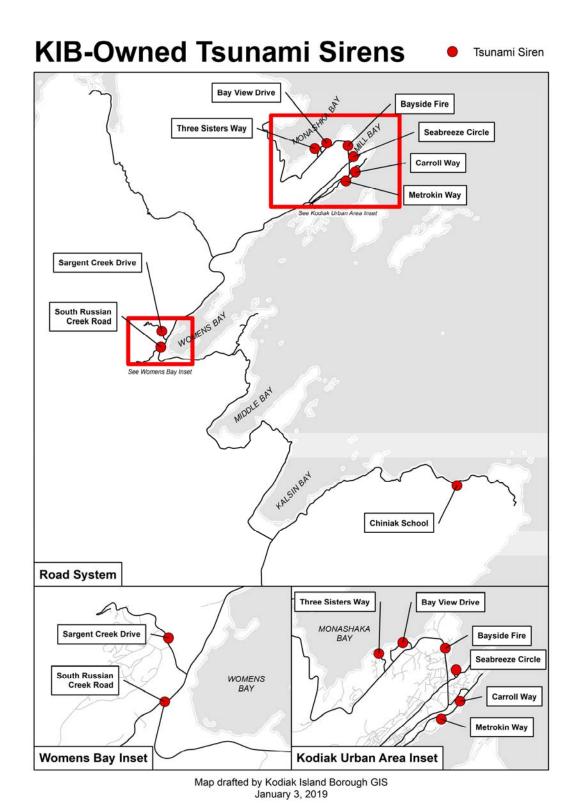
Page 4 – Federal Signal Kodiak Site Survey

Kodiak Site Survey

On February 26, 2019, Jeff Dupilka of West Shore Services, Inc. an Authorized and Certified Installation Company to Federal Signal Corporation and Paul J Merkouris, of Alster Communications, the Federal Signal Corporation Authorized Manufacturers Representative for Alaska arrived at the Airport in Kodiak, Alaska. We were met there by Lt Francis de la Fuente of the Kodiak Police Department. Our scope of work during this trip was to travel to and inspect all of the Kodiak Tsunami Sites located within the City of Kodiak, as well as the Tsunami Siren Sites at all of the Kodiak Borough locations. We traveled to the Kodiak Police Department and met there with Police Chief Tim Putney, Lt Francis de la Fuente and other Kodiak City and Borough Representatives. Prior to arrival in Kodiak, Jeff Dupilka and I, Paul J. Merkouris had received a number of documents from Chief Putney that detailed the current Kodiak City & Borough Tsunami Siren Site locations, and conditions as identified below.



Page 5 – Federal Signal Kodiak Site Survey



Page 6 – Federal Signal Kodiak Site Survey

Kodiak Individual Siren Evaluations as Identified by Chief Tim Putney

The sirens owned by the City consist of the following: 2 Alerting Communicators of America (ACA) RDT/TTS, 5 Plectron, and 2 American Signal Corporation, and 3 American Signal Corporation Compulert computer programmable sirens. I reviewed Aksala Electronics' 2012, 2013, and 2014 annual inspections of the City's sirens. The inference from the reports is critical repairs were prioritized, most of the battery banks were 10 years old but still functioning well, and moisture and rust were a regular concern. The following is a summary of the current inventory with notes on each siren.

Siren at Gibson Cove is an ACA RDT/TTS

- Speaker array rusting through and was recommended for replacement in 2014
- Replaced gel cell batteries in 2017
- Inspected again in late 2017
- This siren is not operational today.

Siren at Pier III is an American Signal Corporation

- Electronics enclosure and speaker array were rusting through in 2014
- Repairs were made in 2016 to keep the siren functioning

Siren on Jack Hinkle is a Plectron

- Electronics enclosure was rebuilt in 2004
- Speaker array was replaced in 2010
- Inspected in 2016 and 2018

Siren at Harbor Master's Office is an American Signal Corporation Compulert

- Siren battery replaced in 2018
- Speaker array and electronics enclosure were rebuilt in January 2019

Siren behind the Fire Department is an ACA RDT/TTS

Surface rust on the speaker array

Siren on Hemlock Street is a Plectron

- Speaker array showing signs of rust
- Repairs made in 2016 and 2018

Siren in the 700 block of Mission Road is a Plectron

- Gel cell batteries replaced in 2017
- Another inspection made in late 2017
- Siren is not operational today and is scheduled for repairs now

Siren in Dog Bay is a Plectron

- Speaker array is rusting
- Repairs were made in 2016 to keep it functional

Siren in the alley behind 1300 block of Rezanof Drive is a Plectron

- Repairs were made in 2016
- Speaker array has rust holes

Page 7– Federal Signal Kodiak Site Survey

- Siren output is muffled by Spruce trees growing around it (tree branches are in contact with speaker array). They should be trimmed back at least 10 feet.
- This siren is not in the inundation zone. There is potential to slightly relocate this siren to a more strategic location, depending on available property access and nearby utilities.

Siren at the Dairy Barn (Signal Hill) is an American Signal Corporation Compulert

- Siren speaker array appears rusted
- This siren is not functioning today
- This siren is far from the inundation zone and may not serve any notification purpose for a tsunami

Siren at the National Guard Armory is an American Signal Corporation Compulert

- This siren is not functioning today
- This siren is far from the inundation zone and may not serve any notification purpose for a tsunami

Siren at the Civil Air Patrol (CAP) Hangar is an American Signal Corporation

- Speaker array has a large rust hole
- Electronics box shows signs of rust and should be replaced
- This siren is far from the inundation zone and serves no notification purpose for a tsunami

Note: In each annual report I reviewed, Aksala recommended removing or relocating the sirens at the Civil Air Patrol Hangar, National Guard Armory, and the Dairy Barn.

Conclusion by Chief Tim Putney

The units making up the current SAWS are 25 to 35 years old with some individual units having newer enclosures or electrical components. The software used in the three "new" computer programmable Compulert sirens is from the 1990's and requires the almost obsolete DOS (disk operating system) to run.

New sirens come in different sizes which are capable of broadcasting signals that reach about 1,200 feet to 4,200 feet. The further a siren's signal reaches the bigger and more expensive it is. A good starting point for budgetary considerations would be approximately \$57,000 per siren. This includes a new mounting pole, shipping to Kodiak, and installation. If a new siren can be integrated into the existing SAWS it will sound different.

The inundation zones and communication methods have all changed since the current SAWS was designed and installed. Further evaluation of the current site locations and any potential relocation site is being conducted.

Page 8 – Federal Signal Kodiak Site Survey

Federal Signal Site Survey Findings Continued

During our site survey on February 26th and February 27th, 2019 on Kodiak Island, we visited 20 of the 21 existing sites that encompass the Kodiak City/Borough Tsunami Warning/Notification System. Chief Tim Putney and Lt Francis de la Fuente brought us to these sites. These two gentlemen were able to open their schedules and give Jeff Dupilka and I the time and we needed to visit 20 of the existing sites and were most helpful and kind. We thank you for that support! Our goal was to identify what the ideal coverage area is based on your City/Borough requirements. Based on our findings, we expect to be able to recommend what would be ideal site locations for the installation of the new siren assemblies.

Utilizing existing infrastructure at your existing sites was to be our first consideration. At the existing sites we looked at the condition of the poles and if the poles were acceptable, whether or not the poles/apertures would be able to handle the weight and wind load of the new siren assemblies. As an example, any new site considerations that would use our Federal Signal Modulator Sirens, would require a120v, 20amp power drop to run the battery plant located at the siren and grounding. The availability of power near the site would be an important consideration. Without going into great detail, other considerations were: Proximity to homes and commercial buildings to prevent hearing loss and window property damage during an activation. That the location of the poles is away from buildings and tall trees to prevent the tones, digital messaging and RF signals from being blocked. That the new sites under consideration are City/Borough owned and able to be placed on City/Borough owned property. That the RF network that will activate the sirens is available at all of the siren locations. Our poles must be a minimum of 50' so that the bottom 10' of the pole is placed into the ground. After visiting with several local contractors, City and Utility personnel, it was discovered that rock conditions when drilling a new pole location will be an important consideration as we look at new potential site locations, We learned that the rock is extremely hard and difficult to determine in advance, the time and cost of drilling a new pole site. Other considerations that we took into account where, that the bottom of our siren equipment must be a minimum of 40' off of the ground. Again, this is to mitigate a potential hearing loss during an activation. The site location soils are always a consideration when looking at any potential new site. Soils that are very rocky, or sands that are very loose can be a problem towards installation and grounding. Sites that are in a flight zone, must have the appropriate lighting mounted on top of the siren assembly. These were just some of the considerations that we will take into account when making recommendations for siren notification coverage at the City/Borough of Kodiak.

Our installer, Jeff Dupilka was able to check about the availability of City/Borough/Commercial equipment, and local equipment rental facilities to facilitate the installation of the poles and sirens at the various site locations. This equipment will typically include, bucket trucks, a crane for setting the poles and siren heads, an auger truck to bore the holes and other commercial equipment on the island to complete the installation.

Page 9 – Federal Signal Kodiak Site Survey

<u>Kodiak Site Survey Discovery</u>

Site Survey for Kodiak Tsunami Siren System

Completed by Jeff Dupilka and Paul Merkouris on 2/26/2019-2/27/2019

City of Kodiak Sirens

- Site 1- Civil Air Patrol
 - o 57.8075 -152.36912
 - o 3-45 pole approximately 8.5 feet in the ground. Replace w/Class 2, 50' Pole
 - o Overhead service
 - American Signal site
 - o Recommend installing a Mod 8032B siren at this location
- Site 2- Armstrong
 - o 57.79509 -152.38505
 - o 3-45 pole 7.5 feet in the ground. Recommend removing equipment
 - o Recommend relocating this site due to tree growth and service issues
 - ACA siren using Overhead Service
- Site 2- Armstrong Alt
 - o 57.79644 -152.38553
 - We recommend utilizing this site location
 - o Recommend installing a **Mod 5020B siren,** Class 2 50' Pole at this new location
- Site 3- National Guard Alt
 - o 57.7943 -152.39282
 - o Existing siren is currently mounted on the building
 - We recommend abandoning this site
- Site 4- KMXT/BARN ALT
 - o 57.79243 -152.3971
 - This is currently a building mounted site. We recommend relocating the siren to a pole mount location approximately 150 feet East of the current site on a Class 2 50' Pole
 - o Our recommendation is for a FS Modulator **5020B siren** at this location
- Site 5- Mission Road
 - o 57.7913 -152.39465
 - o 3-45 pole 6.5 feet in the ground. Replace w/Class 2 50' Pole
 - Overhead Service
 - There is a wire attached to this pole
 - o Recommend installing a Mod 8032B siren at this location
- Site 6- Hemlock
 - 0 57.79543 -152.40022
 - o 3-45 pole 6 foot in the ground. Replace w/Class 2 50' Pole
 - o Overhead service
 - o We recommend installing a **Mod 5020B siren** at this location

Page 10 – Federal Signal Kodiak Site Survey

- Site 7- City Fire
 - 0 57.79155 -152.40578
 - Siren mounted on steel tower
 - Underground service
 - We recommend that you abandon this site and remove equipment
- Site 7- City Fire Alt
 - o 57.79175 -152.40625
 - o Recommend installing a Mod 8032B siren at this location, with a Class 2 50' Pole
- Site 8- Saint Paul Harbor
 - o 57.78779 -152.40836
 - Siren mounted on steel tower by Harbor masters office, recommend removing
 - Power from the building
- Site 8- Saint Paul Harbor Alt
 - 0 57.78664 -152.40722
 - o Recommend installing a Mod 8032B siren on a new 50' Class 2 Pole at this location
- Site 9- Jack Hinkel
 - o 57.78644 -152.41887
 - o 3-45 7 feet in the ground. We recommend a new Class 2 50' pole at this location
 - o Overhead Service
 - Cable attached to the pole
 - o Recommend installing a Mod 8032B siren
- Site 10- Pier II
 - o 57.7819 -152.43567
 - o Existing siren mounted on side of building
 - Siren is bolted to the top of the steel structure utilizing approximately 12 inch steel square plate
 - Recommend a 1-2 foot extension to raise the siren up in the air above the roof
 - o Recommend installing a **Mod 3012B siren** at this location
- Site 11- Gibson Cove
 - o 57.77588 -152.45316
 - o Class 3, 35' Pole mounted siren. Replace with a Class 2 50' pole
 - Overhead service. This site may have to be re-located because of overhead wires
 - o Recommend installing a Mod 4016B siren at this location
- Site 12- Saint Herman Harbor/Near Island
 - 0 57.7824 -152.40619
 - o 3-40 pole. Replace w/Class 2 Pole
 - Recommend installing a Mod 4016B siren at this location

Page 11 – Federal Signal Kodiak Site Survey

- Site 13- Ramp two (New site)
 - o 57.77815 -152.40972
 - o New Class 2 pole mounted location
 - Overhead service from an existing transformer
 - o Recommend installing a Mod 5020B siren at this location

Borough Sites

- Site 1- Bayside Fire
 - o 57.82568 -152.3550
 - Building mounted siren on side of hose tower.
 - Recommend relocating the siren to a 50'Class 2 pole adjacent to the generator building
 - Recommend installing a Mod 8032B at this location
- Site 2- Bay View Drive
 - o 57.82723 -152.37974
 - o 3-45 pole 7 foot in the ground. Replace with a Class 2 50' pole
 - Overhead electrical service
 - o Recommend installing a Mod 8032B siren at this location
- Site 3- Three Sisters Way
 - 0 57.82373 -152.3941
 - 3-45 pole 6 foot in ground. Replace w/Class 2 Pole
 - o Overhead electrical service
 - o Recommend installing a **Mod 8032B siren** at this location
- Site 4- Seabreeze Circle
 - o 57.81815 -152.34916
 - o 3-45 foot pole.
 - Overhead electrical service
 - Lots of equipment mounted to pole for lift station, so the pole will need to stay.
 - Propose a new Class 2 50' pole location as close to the current site as possible.
 - o Recommend installing a Mod 8032B siren
- Site 5- Carroll Way
 - o 57.80859 -152.34715
 - o 3-45 6 foot in the ground. Replace w/Class 2 Pole
 - Overhead service
 - o Recommend installing a **Mod 8032B siren** at this location
- Site 6- Metrokin Way
 - o 57.80311 -152.3595
 - o 3-45 6.5 feet in the ground. Replace w/Class 2 Pole
 - o Overhead electrical service
 - o Recommend installing a Mod 8032B siren at this location

Page 12 – Federal Signal Kodiak Site Survey

- Site 7- Sargent Creek Drive
 - o 57.71582 -152.57903
 - o Recommend the building mounted siren on the side of the hose tower be removed
 - o Recommend installing the new siren to a 50' Class 2 pole behind the fire station
 - Underground power from the fire department 20-25 feet away
 - o Recommend installing a **Mod 8032B siren** in this location
- Site 8- South Russian Creek Drive
 - o 57.70294 -152.57716
 - o 3-45 6.5 feet in the ground. Replace with a 50' Class 2 pole
 - Underground electric
 - Site is next to a cell tower
 - o Recommend installing a Mod 8032B siren.
- Site9- Chiniak
 - We were not able to visit. We do have photos of the site
 - o We would recommend a new Class 2 50' pole located near the existing site
 - o Recommend installing a **Mod 5020B siren** at this location
 - Would require repeaters or satellite activation from the dispatch centers
 - May consideration local activation only initially

Additional Recommendations From Federal Signal

- 1) That your Radio Service Provider (ProComm Alaska) provide a direct radio link to your repeater site on Pillar Mountain for your main siren activation at your City Police Department. During our visit in late February, we became aware of a recent outage of the existing Tsunami System when a power outage occurred at your Near Island Site location. This took down the entire Tsunami warning system until your local on site back-up at the Kodak Police Department was activated. Currently the signaling goes by cable to Near Island, then the information is sent to Pillar Mountain by an exiting microwave shot. Removing these what appears to be unnecessary system links and proving a direct radio shot to Pillar Mountain removes two of the potential failure points. We also determined that you're your local backup Motorola Radio/Zetron encoder system activates a limited number of your siren sites. They say that something is better than nothing. It might make sense to provide a second backup system at your Pillar Mountain site by moving your existing Police Department on site activation equipment to Pillar Mountain. We did not look at the logistics of such a move and what the associated costs would be.
- We are recommending that you provide a separate computer that will run our Federal Signal Commander System Software. You have mentioned that you are very interested in two way system status monitoring. Our pricing and quote will reflect this system monitoring. It will be important that ProComm Alaska be able to interface our Commander software into your new Console configuration at your two dispatch sites.

Page 13 – Federal Signal Kodiak Site Survey

- 3) We were not able to visit the Fire Dispatch Center to first see of there is line if site coverage to Pillar Mountain is available, and to understand if the Motorola Consoles were also being upgraded here?
- **4**)

References

Sandra K. Dixson

Petersburg, Fire/EMS Director Petersburg Borough 907-772-3355 (office) 907-518-0119 (cell) sdixson@petersburgak.gov

Craig Warren

Sitka Fire Department 209 Lake Street Sitka, AK 99835 T 907-747-3233 F 907-747-7450 craig@cityofsitka.com

George Keeney, Retired Fire Chief

Valdez Fire Department
PO Box 307, 212 Chenega St.
Valdez, AK 99685
T 907-834-3463
F 907-834-3411
gkeeney@ci.valdez.ak.us

Maintenance Program

Federal Signal's standard warranty is two (2) years for parts and factory-performed labor. In addition, Federal Signal can provide pricing for three (3) different levels of on-site service: 1) On-Site Warranty Repair Service, 2) Preventative Maintenance and Routine Care visits, and 3) On-Site Warranty and non-warranty repair service. A more detailed description of these services can be furnished upon your request.

Page 14 – Federal Signal Kodiak Site Survey

Ability to Meet Project Time frame

Why choose Federal Signal, Safety & Security Division for your Kodiak Tsunami System, because we have years of valuable experience here in Alaska. You have a Product Representative here in Anchorage, Alaska. Our Alaskan installers are experienced with our products and doing business here in Alaska. We stand firmly behind all of the products that we sell and service here in Alaska. Our very reputation depends on that we get it right every time.

We welcome you to check on the commitment that we have to standing behind any and all of the products that we offer through Federal Signal Corporation within the communities here in Alaska. Because we sell and service Emergency Warning Public safety products, we understand the important of having a reliable warning system when your Kodiak community really has an emergency. It just has to be ready when it is needed.

Please call your Alaska Representative, Paul J Merkouris for any questions or comments that you may have on this response to your Request of Qualifications as represented in our Federal Signal Site Survey response for this important Alaskan Tsunami Warning Siren Project for the City/Borough of Kodiak, Alaska.

V/R

Paul, J. Merkouris

Paul J. Merkouris, Manufacturer's Representative

Alster Communications, Alaska

Federal Signal Representative for Alaska

3062 North Circle

Anchorage, AK 99507-3955

W 907-344-9674

F 907-336-7912

C 907-301-2168

paul@dbmsale.com

paul@alster.com

alsterpaul@gmail.com

www.alster.com



Protecting people and our planet

Kodiak, Alaska

SoundPLAN Map

APRIL 2, 2019

Submittal By:



2645 Federal Signal Drive University Park, Illinois 60484 708-534-3400



SOUND PROPAGATION MODEL

Federal Signal Corporation utilized 'SoundPLAN', an internationally recognized noise modeling software, to estimate the Siren sound level. The SoundPLAN model is based on the International Standardization ISO 9613 and takes into account physical effects including geometrical divergence, atmospheric absorption, ground effect, reflection from surfaces, and screening by obstacles.

The environmental conditions applied in this noise model are based on the summertime daily averages for the area in interest include:

- Humidity 84.33 %
- Air Pressure 1012.30 mbar
- Temperature 48.33°F

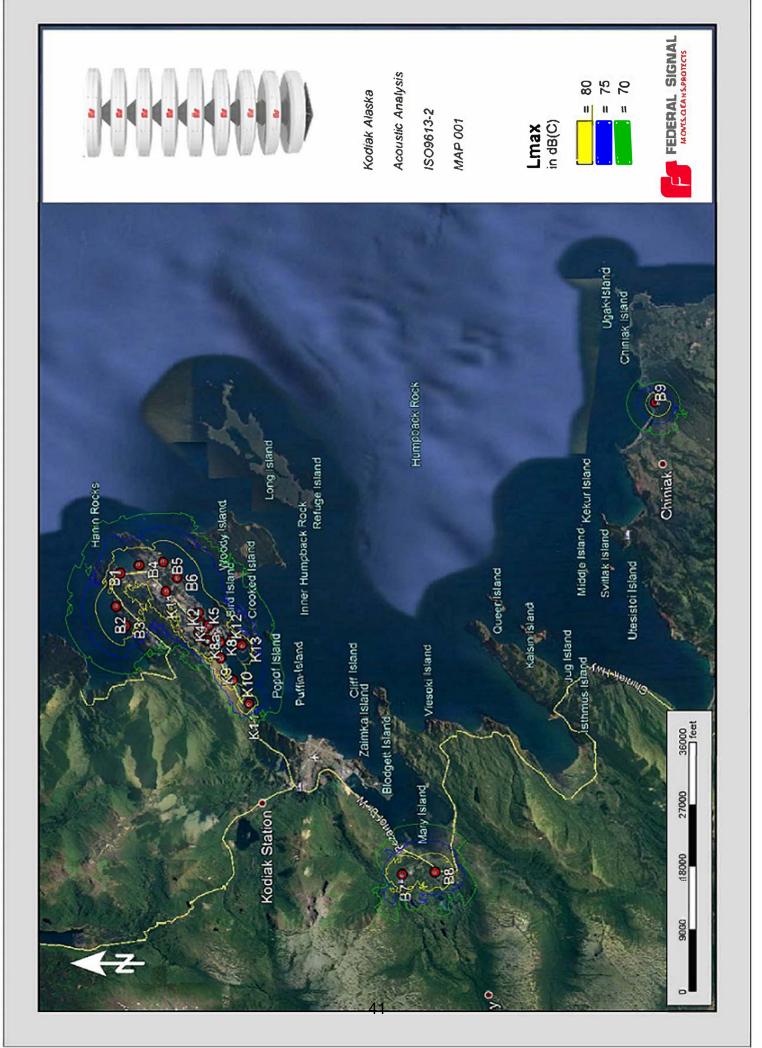
Siren data for this noise model includes:

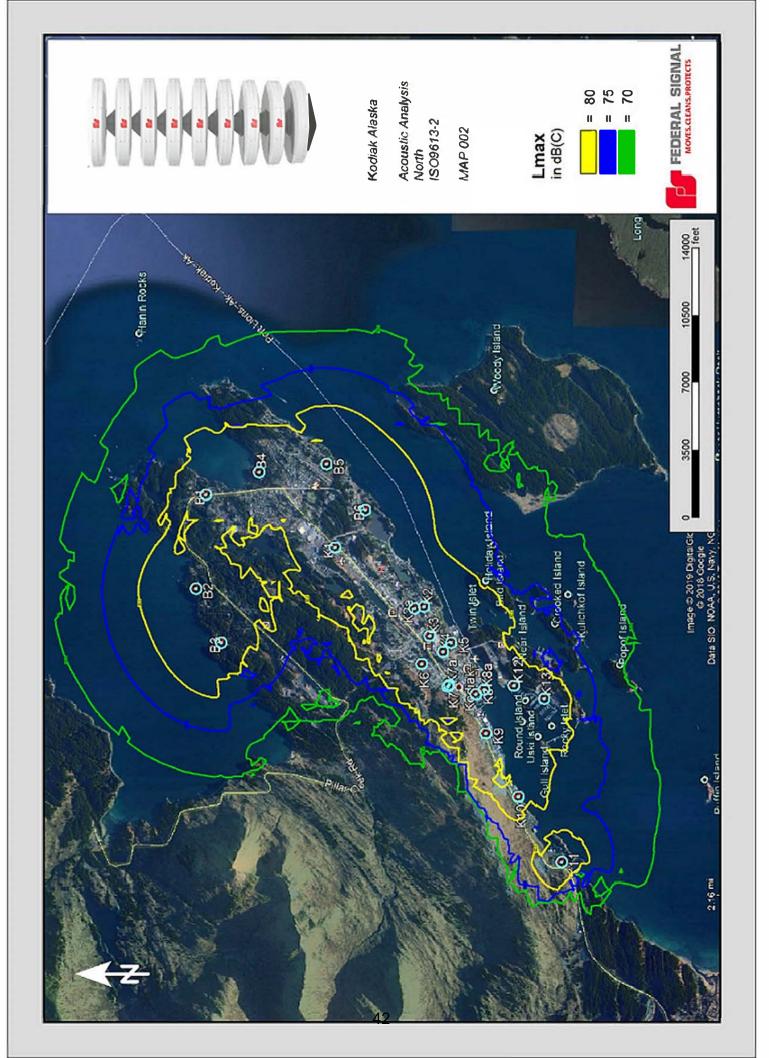
Name	Description	Latitude	Longitude	Туре	Pole (ft)	Note
K1	Civil Air patrol	57.8075	-152.36912	Mod 8032b	50	
K2	Armstrong	57.79509	-152.38505	ACA siren		relocate to 2 alt
K2a	Armstrong alt	57.79644 - 152.38553	-152.38553	Mod5020b	50	
К3	National Guard alt	57.7943	-152.39282	N/A		abandon this site
K4	KMXT/BARN ALT	57.79243	-152.3971	Mod5020b	50	relocate to a pole 150 east
K5	Mission Road	57.7913	-152.39465	Mod 8032b	50	
К6	Mhemlock	57.79543	-152.40022	Mod5020b	50	
K7	City Fire	57.79155	-152.40578	N/A		abandon this site
К7а	City Fire alt	57.79175	-152.40625	MOD5020b	50	
К8	Saint Paul Harbor	57.78779	-152.40836	N/A		remove
K8a	Saint Paul Harbor alt	57.78664	-152.40722	Mod 8032b	50	
К9	Jack Hinkel	57.78644	-152.41887	Mod 8032b	50	



Name	Description	Latitude	Longitude	Туре	Pole (ft)	Note
K10	Pier 11	57.7819	-152.43567	Mod 3012b	2 ft	
					above	
					roof	
K11	Gobson Cove	57.77588	-152.45316	Mod 4016b	50	
K12	Saint Herman	57.7824	-152.40619	Mod 4016b	40	
	Harbor / Near					
	Island					
K13	Ramp two (new	57.77815	-152.40972	Mod 5020b	50	
	site)					
B1	Bayside Fire	57.82568	-152.355	Mod 8032b	50	
B2	Bay View Drive	57.82723	-152.37974	Mod 8032b	50	
В3	Three Sisters	57.82373	-152.3941	Mod 8032b	50	
	Way					
B4	SeaBreeze Circle	57.81815	-152.34916	Mod 8032b	50	
B5	Carroll Way	57.80859	-152.34715	Mod 8032b	50	
В6	Metrokin Way	57.80311	-152.3595	Mod 8032b	50	
B7	Sargent Creek	57.71582	-152.57903	Mod 8032b	50	
	Drive					
B8	South Russian	57.70294	-152.57716	Mod 8032b	50	
	Creek Drive					
В9	Chiniak	57.6137	-152.234616	Mod 5020b	50	

Note: The technical specifications on the enclosed document are only estimates. This correspondence may contain confidential information intended for the use of the individual. If the reader of this is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying is strictly prohibited without written authorization from Federal Signal Corporation. Maps are generated by computer simulator which are approximate anticipated coverage for outdoor sirens, that are based on a variety of factors, and do not guarantee coverage.





MISSION STATEMENT

We serve organizations that rely on critical communication solutions to connect and inform their employees, partners, customers, and stakeholders during emergency and routine operations.

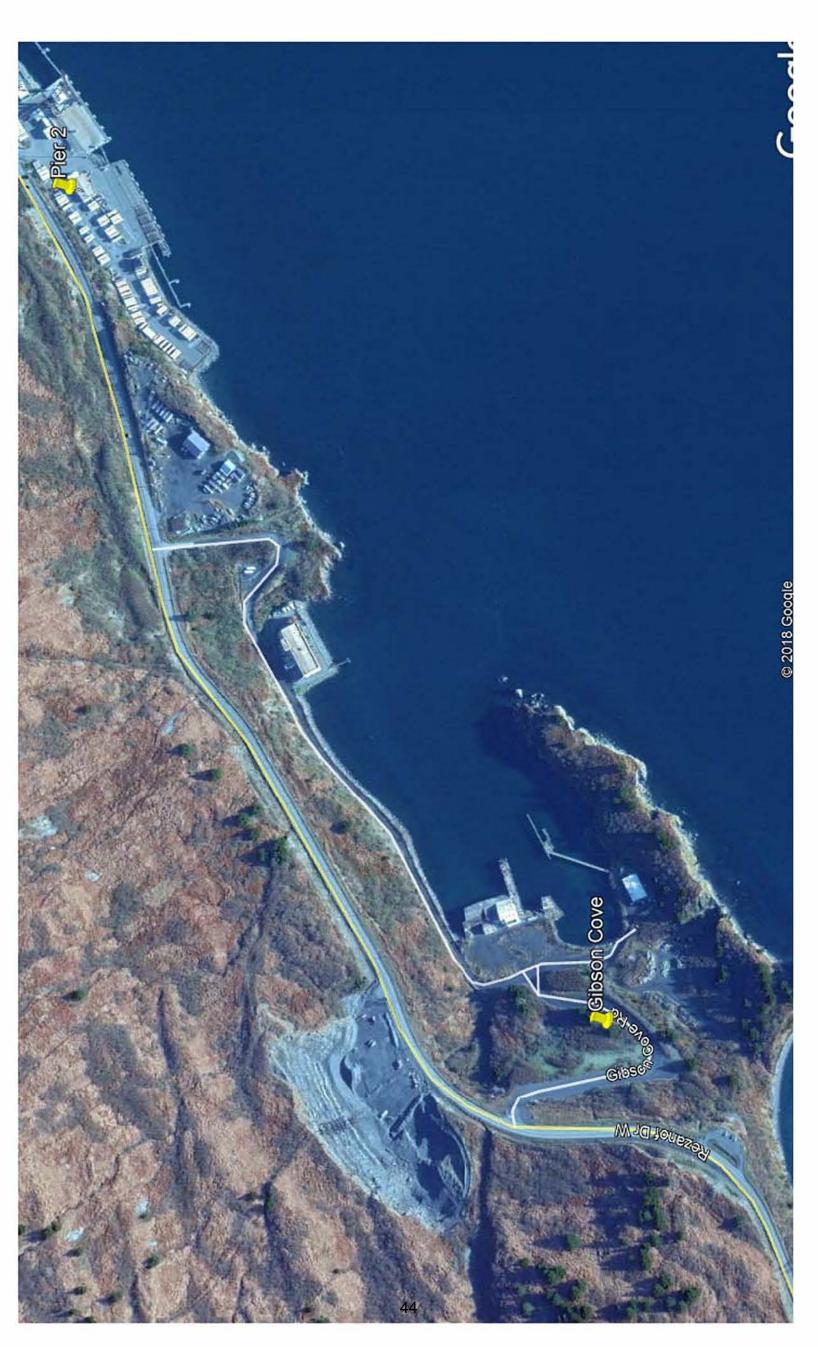
We listen to customers and imagine ways to help them address emerging needs.

We create innovative solutions drawing upon the knowledge and talent of our employees, a rich portfolio of products and services, and our ability to blend these effectively with the most useful technologies, products and organizations found outside our walls.

We deliver consistent, profitable growth, enhanced earnings and cash flow for our stakeholders.

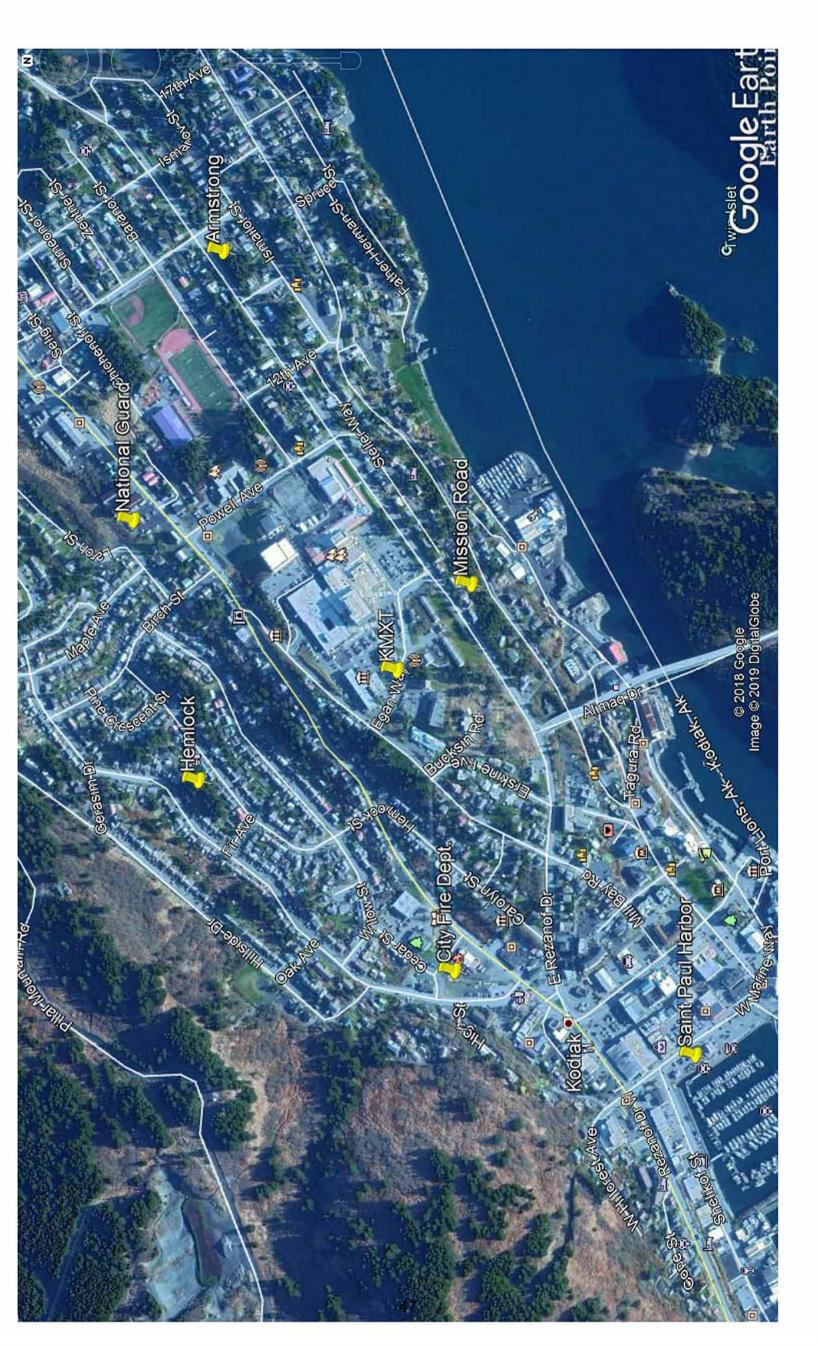


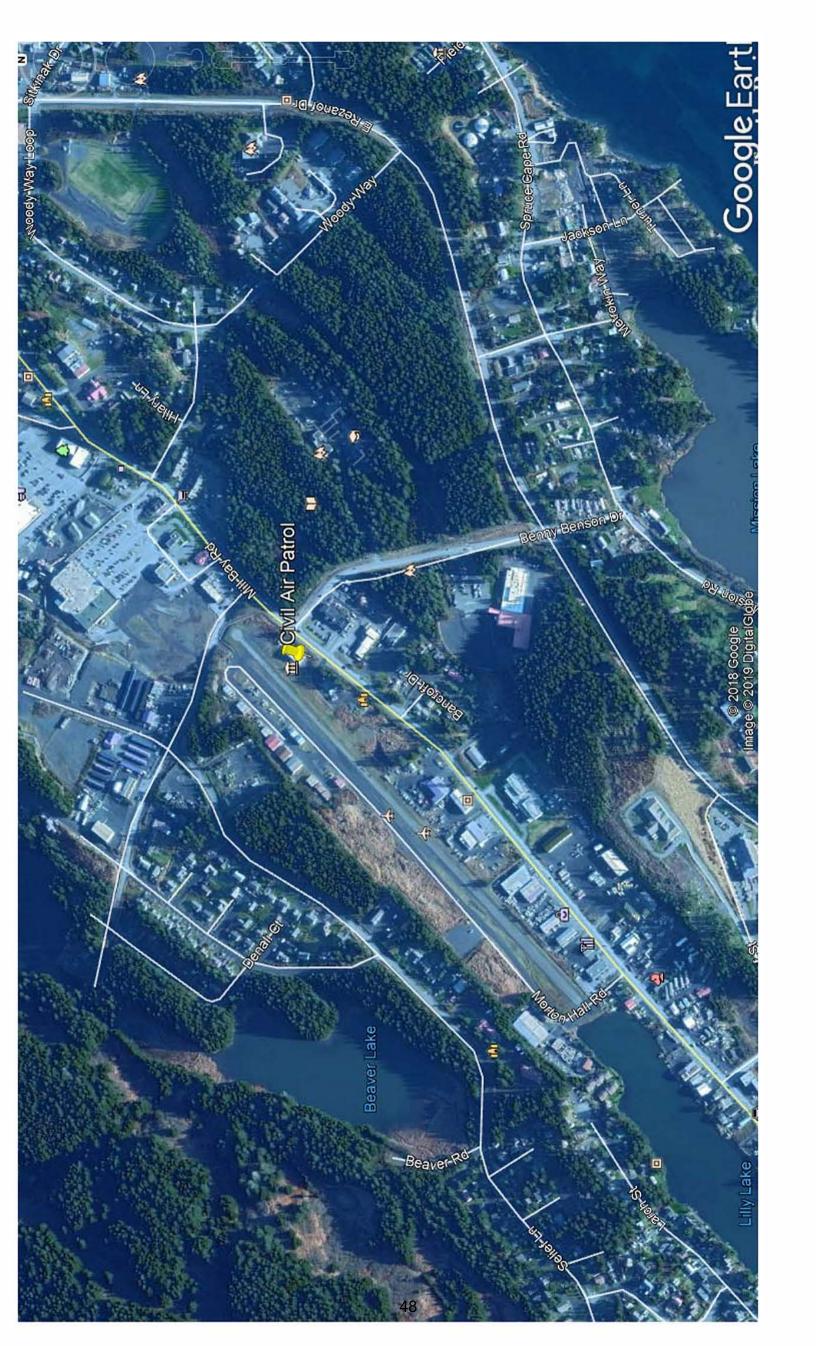
2645 Federal Signal Drive University Park, Illinois 60484 708-534-3400



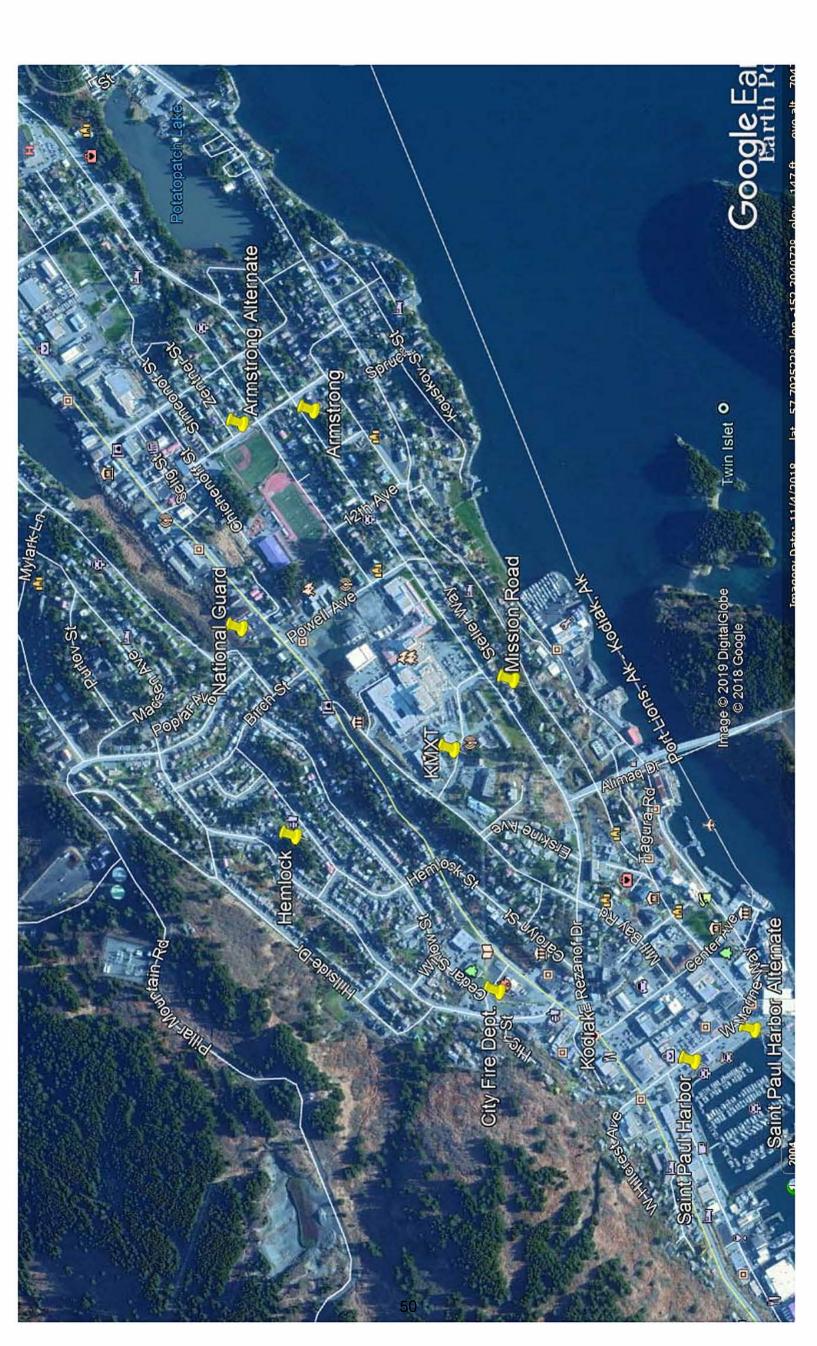






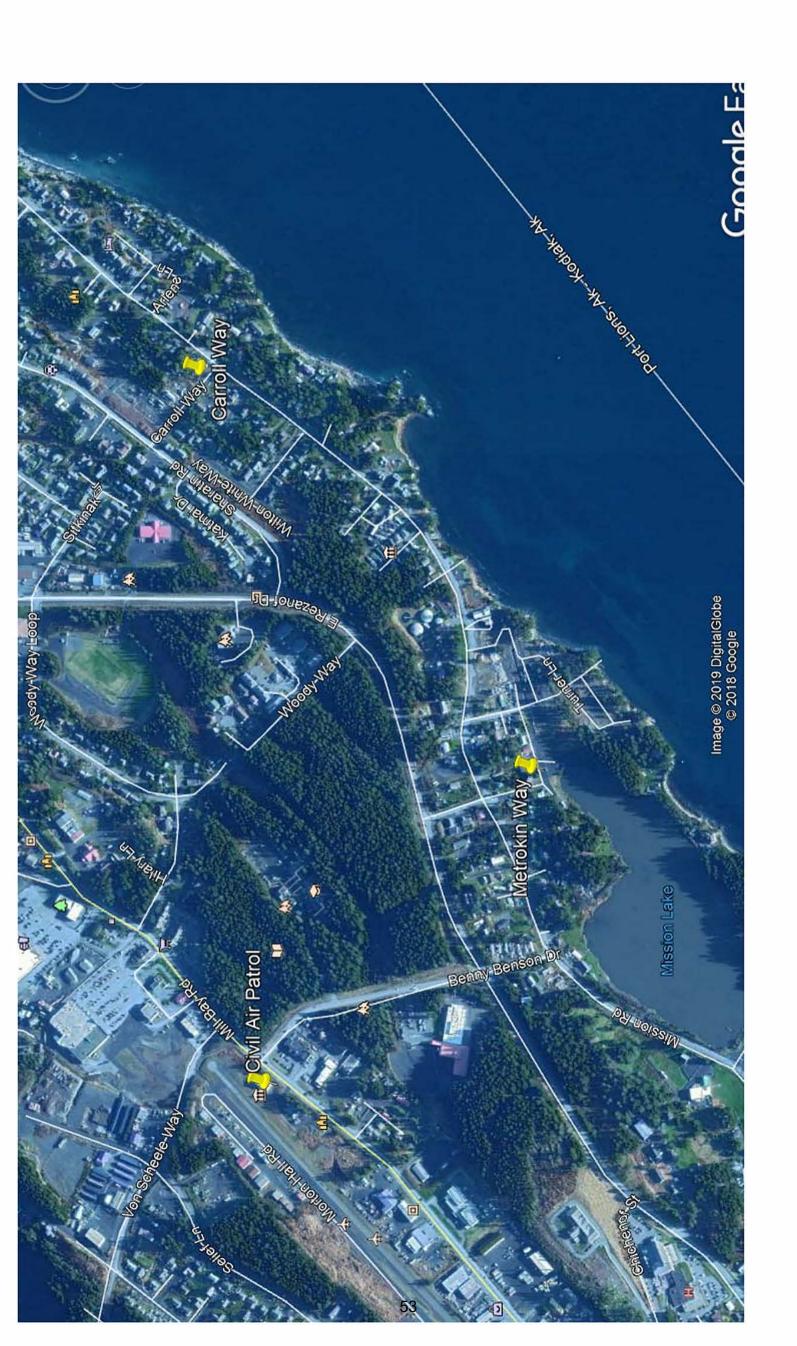


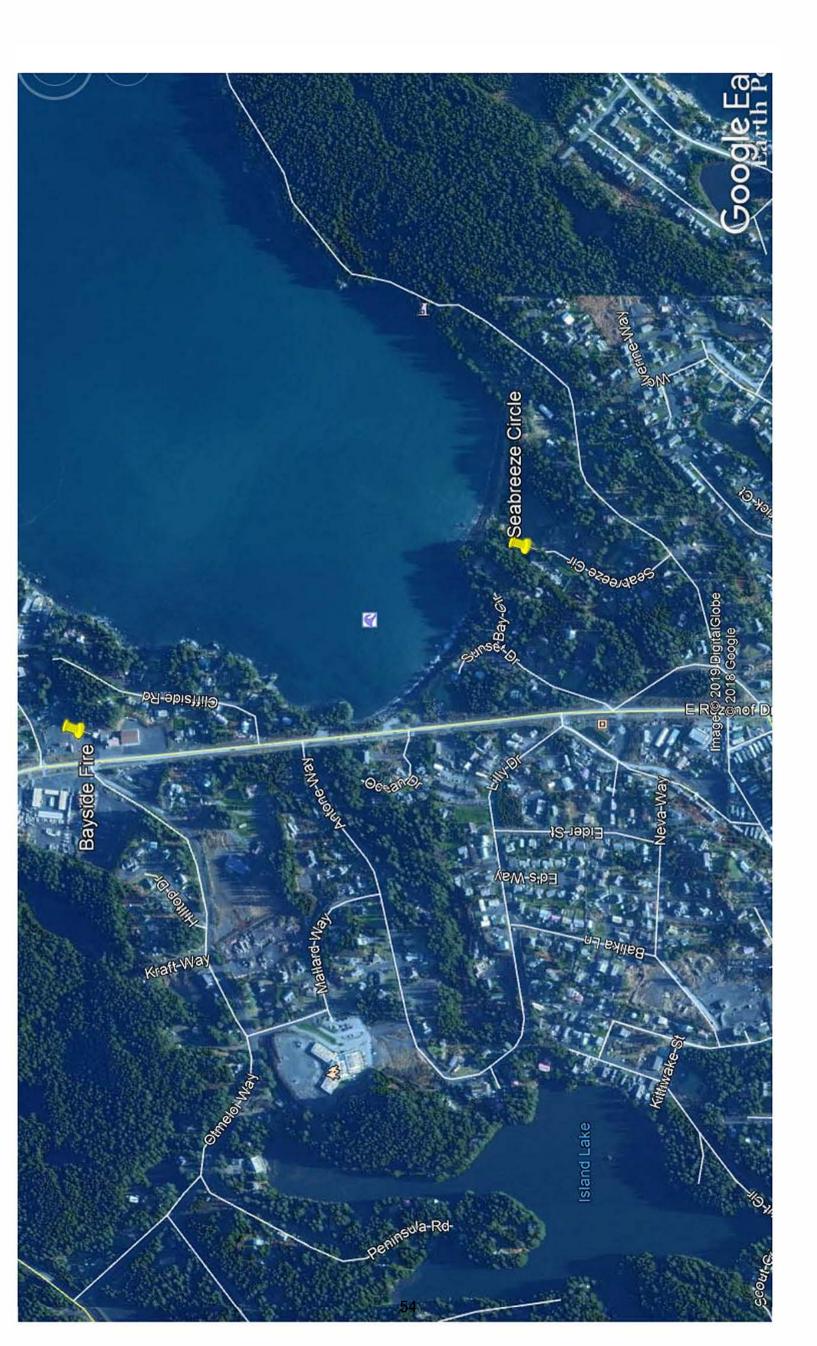


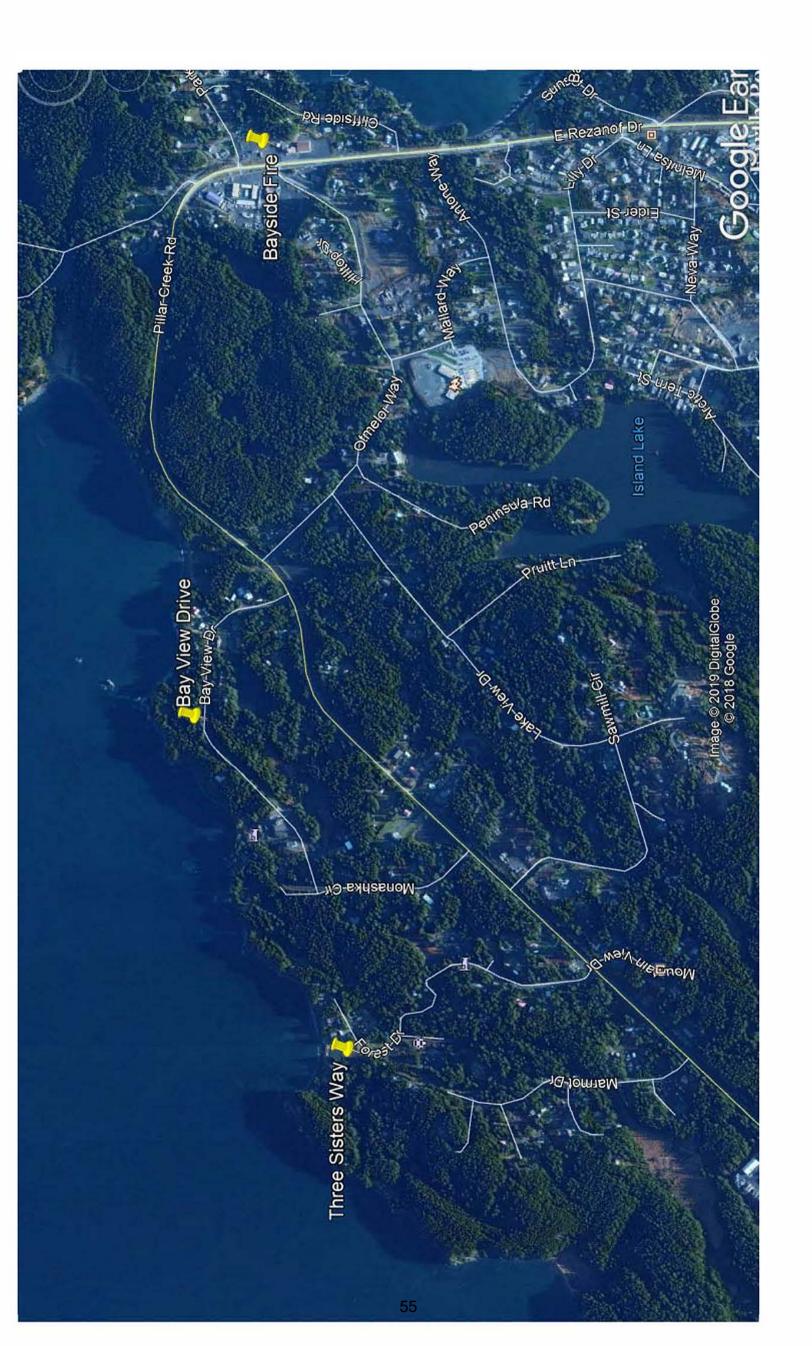












City of Larsen Bay P.O. Box 8 Larsen Bay, AK 99624 (907) 847-2211 Fax (907) 847-2239

Email: cityoflarsenbay@gmail.com

Resolution 17-13

A RESOLUTION TO RECOGNIZE NEED FOR AN AMBULANCE

WHEREAS, the Larsen Bay City Council recognizes the need for enhanced emergency response resources; and

WHEREAS, the City Council recognizes the willingness of local residents to be involved in their community by volunteering during times of disaster; and

WHEREAS, the City Council passed Resolution 17-01 establishing a Community Emergency Response Team; and

WHEREAS, the community not only has roughly eighty year-round residents, but has a population spike in the summer because of the cannery, lodges, fishing boats, and set net sites; and

WHEREAS, the increase of population causes concern regarding general welfare and safety, and

WHEREAS, the community of Larsen Bay does not have an ambulance for emergency responses; and

NOW THEREFORE BE IT RESOLVED THAT: The Larsen Bay City Council, by this resolution, hereby recognizes the need of an ambulance:

PASSED and ADOPTED by a duly constituted quorum of the Larsen Bay City Council this 9th Day of AUGUST, 2017

SIGNED:

(Mayor

ATTEST:



PHONE(907) 847-2207 Fax (907) 847-2307

> PO Box 50 Larsen Bay Alaska 99624

Resolution 17-18

A RESOLUTION TO RECOGNIZE NEED FOR AN AMBULANCE

WHEREAS, the Larsen Bay Tribal Council recognizes the need for enhanced emergency response resources; and

WHEREAS, the Larsen Bay Tribal Council recognizes the willingness of local residents to be involved in their community by volunteering during times of disaster; and

WHEREAS, the community not only has roughly eighty year-round residents, but has a population spike in the summer because of the cannery, lodges, fishing boats, and set net sites; and

WHEREAS, the increase of population causes concern regarding general welfare and safety, and

WHEREAS, the community of Larsen Bay does not have an ambulance for emergency responses; and

NOW THEREFORE BE IT RESOLVED THAT: The Larsen Bay Tribal Council, by this resolution, hereby recognizes the need of an ambulance:

PASSED and ADOPTED by a duly constituted quorum of the Larsen Bay Tribal Council this 10th Day of AUGUST, 2017

CICNED.

Chad Aga, Président

ATTEST: