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H 7

2/14 DEC SB-47 Billie Trent -- testimony - yes - ~~Admin~~ ^{Envir Conservation} 465-2600
no fiscal note -- no advisory opinion (position paper)

C&RA -- Marjorie Listberger 465-4708
Muni of Ave -- Suzanne - 586-2401
Ferguson/Scott advised

2/20 ^{Called} Listberger ^{who} says Jennifer Fate was suppose to
contact me - were preparing - decided not to present
called Billie Trent - Gary Hayden will testify Dir, Div of ^{Facility} Construct/
Operation
Suzanne has talked w/ Bill Miles - he knows

2/21 Talked to Greg Capito - Hayden in mtg -
Sec 2 in bill is prioritized and will
be presented by Hayden or Ross -
I asked for written hand-outs

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY
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POUCH Y - STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

May, 1986

Copies of minutes listed below were originally included in this file. The minutes are available on the STAIRS date base CM 14. In order to save space copies of minutes have not been left in the files.

Jeanie Henry

Senate Community and Regional Affairs
2/21/85, 3:50
3/19/85, 3:50

Alaska State Legislature

Senate

Committee on Community and Regional Affairs



Official Business

Senator Edna DeVries, Chairman

Members:

Senator Ferguson, Vice Chairman

Senator Cognill

Senator Sturgulewski

Senator V. Fischer

Pouch V

Juneau, Alaska 99811

April 11, 1985

Mr. Wayne Holley
P. O. Box 388
Talkeetna, AK 99676

Dear Mr. Holley:

I have received your correspondence concerning funding for the Talkeetna water/sewer system, and am in total agreement with you that the system is badly needed.

While I was Borough Mayor and meetings were being held by the Assembly to set up the capitol project funding priorities for this Legislative Session, the Talkeetna sewer/water project was not requested. I was aware of the study that was being done by the Village Safewater agency; but it was my understanding at the time that present Borough Mayor, Dorothy Jones, was working directly with the Governor to secure the necessary funding. Since the funding for the project was already being taken care of, the Borough did not include it as a priority.

Since coming to Juneau I have met with the two key people familiar with state funding for water and sewer projects. They are Gary Hayden, Director of the Division of Facility Construction and Operation; and Greg Capito, Chief of the Village Safe Water program. Money for the Talkeetna system was included in the capitol projects budget submitted by Safe Water. It is my understanding that it was removed prior to the budget being submitted to the Legislature.

Under any circumstances it would be difficult to secure the needed funds without them being a part of the Borough's funding priorities; however with the major reductions in spending mandated this year by the reduction in revenue, I feel it is going to be almost impossible. This does not mean that I will stop working to get this funding. I will continue to do all I can because I believe Talkeetna badly needs a modern sewer/water system.

Please drop by my office if you are in Juneau, or feel free to call me at 465-4712. I am always interested in your concerns. May God bless you.

Sincerely,

Edna DeVries
Senator

Board of Supervisors
Talkeetna Water and Sewer Service Area
P.O.Box 388
Talkeetna, Alaska 99676
Phone 733-2341

March 26, 1985

The Honorable Edna B. DeVries
Alaska State Legislature
Pouch V (MS 3100)
Juneau, Alaska

Dear Senator DeVries:

We, the Board of Supervisors of the Talkeetna Water and Sewer Service Area, request your support in our effort to obtain funding for the installation of a water and sewer system in our town.

In August of 1984 the Alaska Department of Environmental Conservation completed a Sanitation Facilities Preliminary Engineering Study which recommended that a water and sewer system be constructed in Talkeetna. In the October, 1984 Matanuska-Susitna Borough General Election voters of Talkeetna approved the creation of the Talkeetna Water and Sewer Service Area. This service area is an arm of the Borough and is overseen by a three-member board of supervisors who act as advisors to the Mayor. The Service Area is charged with planning and design, construction, operation and maintenance of the system. Through the Borough, it has the power to generate revenue by assessing user fees and/or levying taxes on real property. These powers will insure that the cost of continuing operations will be met but the small population base would probably not be sufficient to meet the demands of the initial capital project. Therefore, we are requesting that the State of Alaska assist us with funding for the construction of the water and sewer system.

Our need for a water and sewer system has arisen because of several factors. Some are of natural origin. These include:

- a) a shallow water table which ranges from 1 to 6 feet often renders many private septic treatment systems inoperative.
- b) porous soils, in conjunction with the high water table, allow any contaminants to disperse over a wide area, thus affecting large numbers of people.

Other factors result from human actions. These include:

- c) small lot sizes, a legacy of the original survey of the townsite, make it impossible to satisfy Health Department requirements as to separation distance between any water source and any waste treatment system.
- d) shallow wells are the most numerous type of water source in the area and are especially susceptible to contamination under the circumstances which exist.

- e) a growing population brought about by population pressures in Anchorage and the Palmer-Wasilla area and encouraged by the attractiveness of the Talkeetna area has put much additional pressure on existing systems.
- f) a significant increase in tourism brought about not only by the efforts of local businesses and citizens but also through the encouragement of both the State of Alaska and the Matanuska-Susitna Borough has multiplied the strain on existing water and septic systems to a critical level.

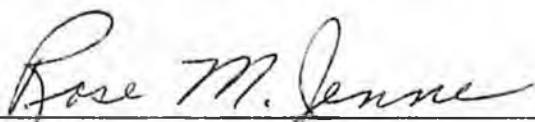
There are two major results which follow from the above factors. First, there is a growing potential for a serious health problem as a result of inadequate disposal of waste products and the resultant contamination of the ground water. There has been at least one documented case of hepatitis in the area. Several locations have been forced to use some type of purification system before using water from the site. Even the water at the elementary school is rated as marginal.

Secondly, most of the business in the area depends on tourism. This means there is a great emphasis on "service industry" business. Motels, bars, restaurants and other businesses which service the tourists put large demands on the very systems which have been found to be inadequate. This may be the single most important factor which prevents businesses in Talkeetna from fully participating in the growth of the tourism industry in Alaska and the Matanuska-Susitna Borough.

In summary, we are a small town with a large and growing problem. Your support in our efforts to obtain the necessary funding for this project will help insure the good health of the people and will also help promote a thriving business community which in turn will be better able to support the local population with much needed jobs and other opportunities.

Talkeetna Water and Sewer Service Area


Wayne Holley, Service Area Supervisor


Rose Jenne, Service Area Supervisor


Tom Scanlon, Service Area Supervisor

TALKEETNA, ALASKA
SANITATION FACILITIES
PRELIMINARY ENGINEERING STUDY

Prepared by:
VILLAGE SAFE WATER PROGRAM
Alaska Department of Environmental Conservation
Pouch 0
Juneau, Alaska 99811

AUGUST, 1984

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I. SUMMARY AND RECOMMENDATIONS

Talkeetna, Alaska was established on the Alaska Railroad in the early 1900's. Lot sizes established then are, in many cases, too small to allow development when today's water and wastewater disposal regulations are applied.

Many wells are very shallow and have inadequate separation distance from subsurface waste disposal sites. Soils are very porous and there is a high groundwater table. These conditions coupled with higher population densities create a potential for contamination. Tests conducted during this study found no positive evidence of pollution, however, records show some of the same wells have been contaminated in the past.

For this report, Talkeetna has been divided into three (3) service areas. These are:

Service Area 1: The Old Town Site west of the Railroad.

Service Area 2: South of Old Town Site bordering the Spur Road;

Service Area 3: Denali and Talkeetna Heights Subdivisions and the Airport.

Please refer to Figure 2 on page 15 for clarification.

It is recommended that the community construct a water system for Areas 1, 2 and 3. This will provide a safe source of water for all residents of the community.

It is also recommended that the community construct a sewer system in Area 1 (Old Town Site). This system would serve the lots in the

community which are too small for on-site sewers. This will also bring these small lots into compliance with current water and wastewater regulations.

It is further recommended that the Matanuska-Susitna Borough use the remaining funds appropriated for this study to drill a test well to determine water quality in the proposed well site area. The community of Talkeetna should form an improvement district to operate and maintain the system that is constructed.

As Table 1 suggests, the estimated operation and maintenance cost for water and sewer service in the Old Town Site (Area 1) totals \$ 40.72 per household per month. The operational cost of water service only in Areas 2 and 3 is \$14.34 per household per month.

TABLE 1
ESTIMATED CAPITAL AND O&M COSTS
FOR RECOMMENDED ALTERNATIVES

Recommended Alternative	Capital Cost	Operation and Maintenance Cost (O & M) House/Month*
Piped water system for entire community (Areas 1, 2 & 3)	\$ 2,033,000	\$26,675.00/year Cost/House/Month \$14.34
Sewer system in Old Town Site (Area 1)	\$ 1,129,000	\$18,991.00/year Cost/House/Month \$26.38

*Assumes every house in area served is connected with the system. If fewer services are connected, the cost per house will increase.

II. INTRODUCTION

In December 1983, the Matanuska-Susitna Borough requested that the Village Safe Water Program conduct a water and sewer feasibility study in Talkeetna. Forty thousand dollars was made available by the Borough for this study. Work began in March 1984. The purpose was to investigate the existing sanitation facilities in Talkeetna and present alternatives. Cost estimates for construction, operation and maintenance of various alternative systems are proposed for the community's consideration. Information was obtained from field investigations by Village Safe Water staff and from published reports by various public agencies (see Addendum, page 39). An ad hoc committee consisting of six Talkeetna residents was established to represent the community in this planning process and to review the report. Meetings were held to discuss this project on March 15, April 5, and July 31, 1984. The committee's comments are on page 48.

III. DESCRIPTION OF THE PLANNING AREA

Location

The community of Talkeetna is located at Mile 226.7 on the Alaska Railroad, approximately 80 air miles north of Anchorage. The area investigated by this report is bounded by the Susitna and Talkeetna Rivers on the north and west and by the State airport and Twister Creek on the east and south respectively. (See Figure 1, page 6.)

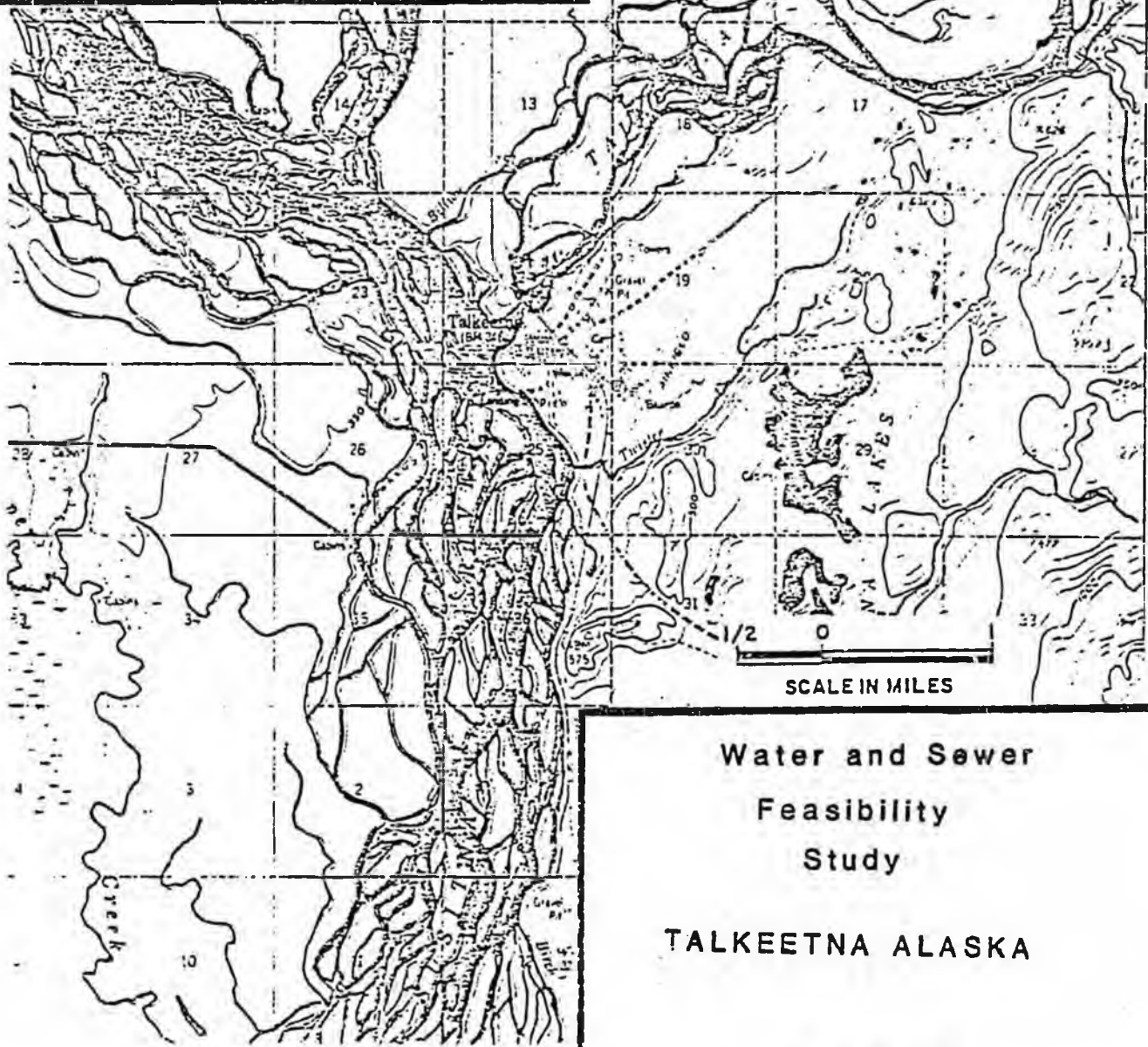
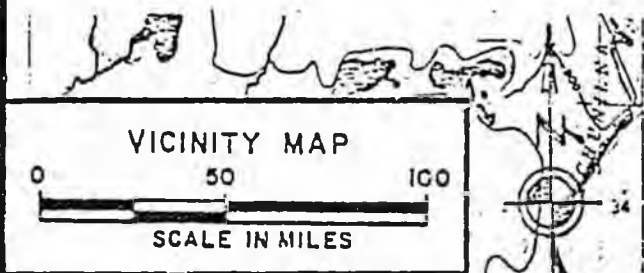
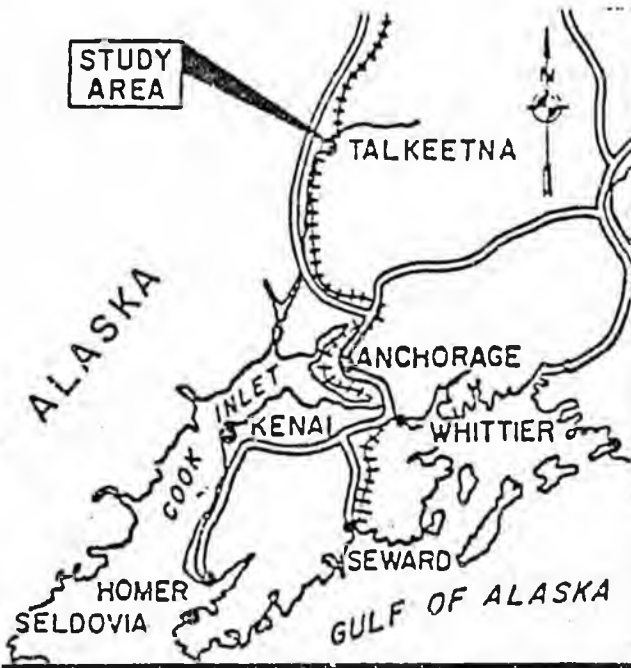
Climate

Talkeetna's climate varies between modified maritime and continental. Annual precipitation is approximately 28 inches (average snowfall is 102 inches). Temperature maximums range from -48 to 91 degrees F. Winds are from the north or south depending on the time of year.

TABLE 2
CLIMATE DATA

Mean July maximum temperature	70 degrees F.
Mean January minimum temperature	4 degrees F.
Mean annual precipitation	29 inches
Mean annual snowfall	102 inches
Heating index degree days	13,000
Freezing index degree days	3,500
Thawing index degree days	3,000
Average wind	N 3.7 kts.
Extreme wind	NE 33 kts.

STUDY AREA



**Water and Sewer
Feasibility
Study**
TALKEETNA ALASKA

figure 1

Soil

Soil conditions vary; detailed testing in the area of the airport was done by the Department of Transportation.⁴ Typically, one-half foot of organics and roots overlie a layer of sandy silt, followed by a sandy gravel at an average depth of 2.6 feet. Investigation of groundwater indicated an average depth of 7 feet with seasonal variations.

Flood and Seismic Hazard Evaluation

A study published in June of 1972 by the U. S. Army Corps of Engineers indicates that Talkeetna is subject to flooding from the Talkeetna, Susitna, and Chulitna Rivers.¹

The study indicates that large floods have occurred in the past and even larger floods are possible. The entire area considered in this feasibility study is included in the 100-year flood plain. If a flood of this magnitude occurs, all of the area this study considers will be under water. Flood elevations are reported to be:

TABLE 3

Flood	Elevation (feet, mean sea level)
Standard Project	354.4
Intermediate Regional (100 year)	351.8
August 1971 Flood	346.9
Approximate Elevation of roadway in front of Roadhouse	349.8

Any design and construction of water or sewer systems in Talkeetna must consider this potential for flooding.

Earthquake

Talkeetna is located in seismic zone 7. Major damage to structures can be expected from earthquakes greater than magnitude 6.0 on the Richter scale.

Economy

There are a total of 32 businesses in the Talkeetna area. The majority are retail (30%), service (30%) and transportation, communications and utilities (22%). The remainder are involved in construction, wholesale trade, finance, insurance and real estate. These businesses account for a total of 147 jobs, of which 75 percent are full-time. Total employment drops to 72 jobs during the winter. Frank Orth & Associates, Inc., reported that just under 50 percent of the businesses in Talkeetna plan to expand within the next year.⁶ This expansion should result in the creation of an additional 24 jobs. Six lodges and inns operate in Talkeetna with a combined total of 46 rooms which accommodate up to 96 people. Average summer occupancy rates are 19 percent. Many of the other businesses in Talkeetna are dependent upon hunting, fishing and tourism for the majority of their sales. Talkeetna does not receive revenue sharing funds directly from the State, instead, it relies on the Matanuska-Susitna Borough to provide many of the community services.

Housing and Public Facilities

The Matanuska-Susitna Borough (Mat-Su Borough) estimates that there are 140 dwelling units in Talkeetna.² The vacancy rate is reported to be 16.4 percent. Public facilities include an elementary school, fire station with an ambulance service, library, historical society museum, visitor's center, public boat launch, camping area and public park. Transportation is available year-round by rail, air or paved road.

Public Administration

Talkeetna lies within the Mat-Su Borough; the community is not incorporated. No organized or recognized governmental entity exists within the community at this time. The community is now in the process of forming a water/wastewater service area. This issue is expected to be placed on the October 1984 ballot.

Population

The 1983 Mat-Su Borough sample census² estimates the population of Talkeetna to be 325. A February 1984 report done for the Alaska Power Authority's (APA) Susitna hydroelectric project estimates the population to be 281 people.⁵ The discrepancy is probably due to the different time of year when each study was conducted (summer - higher population, winter - lower population). Results of each survey are tabulated below.

TABLE 4

	Mat-Su Census	APA Census
Total Housing Units	140	124
Vacant Housing Units	23	35
Vacancy Rate	16.43	28
Occupied Housing Units	117	89
Average Household Size	2.8	3.16
Total Population	325	281

For the purpose of this study, the higher population total of 325 will be used.

The population growth trend for Talkeetna is reported to be as follows:

TABLE 5

Percent Increase 1978-1981	Average Annual Percent Increase
10.09	3.36

Talkeetna's population is expected to continue to grow. Construction activity in the area and the possibility of the Susitna hydroelectric project may dramatically increase the rate of growth.

IV. SCHEDULED CAPITAL IMPROVEMENTS

Capital improvements funded for future construction include:

1. Larson Lake road access (\$149,300)
2. Yoder Road and bridges (\$113,500)
3. Talkeetna Spur Road pullout (\$100,000)
4. Improvements to the old German Casin/Visitor Center (\$7,000)
5. Talkeetna museum improvements (\$44,000)
6. Talkeetna boat launch and Christiansen improvements (\$1,000,000)
7. Talkeetna Nordic ski trail (\$50,000)
8. Talkeetna Elementary School ice facility complex (\$50,000)

V. EXISTING SANITATION FACILITIES

No community water or sewer service exists in Talkeetna. Businesses and many homeowners have constructed their own individual wells and septic systems. Due to high groundwater, some non-conventional or mound-type septic systems have been installed. Septic systems, in general, work well in Talkeetna. Waste disposal problems are reported more frequently in the Old Town Site.

Wells are less than 30 feet deep. Some are reported to be only 15 feet deep. Due to small lot sizes, many wells are located less than the required 100 feet from a waste disposal area. Water quality is good, with some wells having a moderate iron content. Random samples of water for quality tests were taken. Twenty-three samples were tested for phosphorus, dissolved solids, pH, chloride, sulfate, and conductivity (see Addendum, page 44). All indicators were within safe drinking water standards. No further chemical tests were done.

Fifteen water samples were tested for total coliform bacteria and there were no positive results. Some of the wells tested have in the past had positive coliform bacteria counts. The soils in most areas appear to be very porous and groundwater fluctuates seasonally. This may account for the inconsistency of the tests.

The small lot sizes, many very shallow wells, and lack of adequate separation between wells and septic systems creates the potential for contamination. If current practice continues as the population of Talkeetna increases, so will this potential.

A community survey was distributed to 160 homes in the study area. Fifty-six surveys were returned (see Addendum, page 41). Of those who responded, 45 said they had a private well. None said they hauled their water. Ten homeowners responded that they had problems with wastewater and seventeen responded that they had problems with drinking water quality. In answer to the question, "Does Talkeetna have a problem with water?" forty-seven said "yes." The reasons given most often were shallow wells, high groundwater and inadequate separation between the wells and septic systems. Forty-one answered "yes" to the question, "Does Talkeetna have a problem with sewage?" The reasons given were high groundwater, small lots and poor drainage.

There is no publicly operated community watering point available. People haul water from various businesses in the community. Concern has been expressed by some members of the community that these may not be safe sources of water because of inadequate separation distances from waste disposal areas.

Mat-Su Borough regulations specify a minimum lot size of 7,200 square feet. If the lots are under 20,000 square feet in size, they must have both a water and sewer system for the subdivision. If the lot sizes are over 20,000 square feet, but less than 40,000 square feet, they must have either a community water or sewer system. Many lots in Talkeetna are less than the minimum size allowed. Most lots in the Old Town Site fall within the requirement that they must be served with a community water and sewer system.

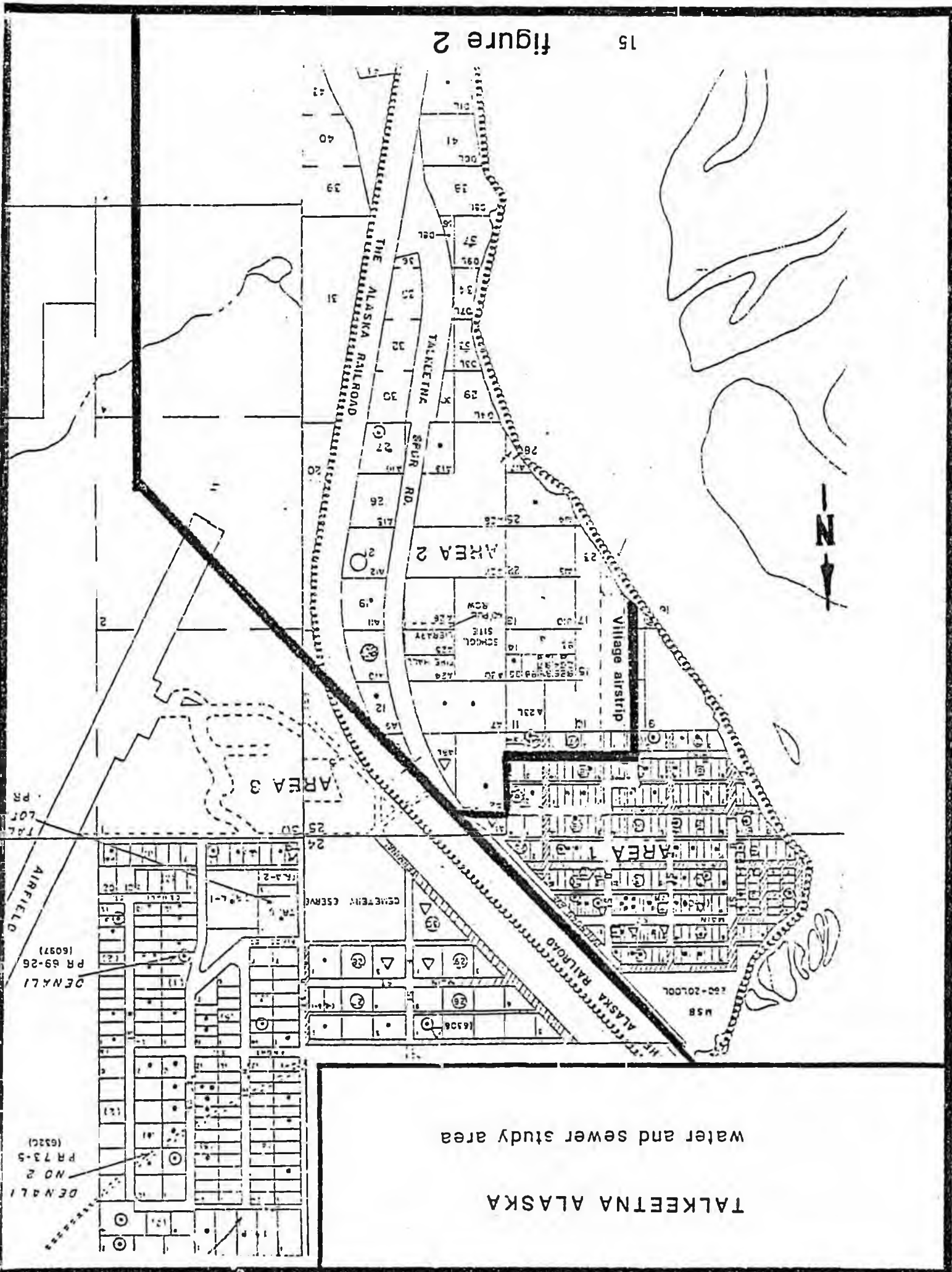
VI. SANITATION FACILITY ALTERNATIVES

Introduction

The study area was divided into three parts (see Figure 2, page 15). Study Area 1 includes the Old Town Site west of the Alaska Railroad; Area 2 is south of the townsite and borders the Talkeetna Spur Road; and Area 3 is the Denali and Talkeetna Heights subdivisions, including the area around the airport.

Assumptions made in estimating the cost of the water system were: The system would be deep buried and of ductile iron pipe; a community water supply would require minimal treatment; pressure for the system would be provided either by hydropneumatic tanks or by a ground level insulated water storage tank located on a hill just outside of town. The hydropneumatic system would also require a ground level storage tank located at the well.

In estimating the cost of the sewer system only, a septic tank effluent pumping system (STEP) was considered. The system would be constructed of polyethylene pipe. The relatively flat topography and high groundwater in Talkeetna would make a conventional gravity sewer system expensive and maintenance intensive. A STEP system utilizes a septic tank located at each service or group of services. From these, clear effluent is pumped under pressure to a waste disposal area. Accumulated sludge would be periodically pumped from the septic tanks and disposed of. The pumps would require maintenance and



water and sewer study area

TALKKEETNA ALASKA

periodic replacement. Maintenance of the tanks and pumps would be the homeowner's responsibility.

Three possible methods of wastewater disposal were evaluated. A community leach field was considered only for Area 1. An aerated lagoon and a rotating biological contactor (RBC) were considered for the other areas and for the whole system.

The leach field would only serve Area 1. It would be located near the river at the south end of the old village airstrip. The field itself would be located either on one side of the strip or on a parcel of vacant land in that area. Possible right-of-way acquisition problems exist with both locations. Due to high groundwater, the leach field would either be constructed as a mound system or with an insulating cover.

The aerated lagoons and the RBC sewage treatment facility could be located in an area adjacent to where the Alaska Railroad and Talkeetna Spur Road merge just south of town. This is a marshy area, but good soils are expected at a shallow depth.⁴ This area would require extensive foundation preparation for either facility. Right-of-way would need to be secured along with permits to construct in a wetland.

In all estimates, it is assumed that all residents are connected to each system. If fewer connections are made then individual service costs will increase proportionally.

TALKEETNA WATER SYSTEM

Water System Alternative 1

Areas 1, 2 and 3

Alternative 1 consists of a water system for the entire community (Areas 1, 2 and 3). The system consists of a community well with a small pumphouse located on land north of the Old Town Site. This property is owned by the Alaska Railroad and is leased by the Talkeetna Chamber of Commerce. There will be a 250,000 gallon steel storage tank which would provide five days water storage for the present population. Sufficient water to meet fire flows will be available with this system.

TABLE 6

	Costs	Totals
AREA 1:		
1 Well, 60-foot deep	\$ 20,000	
Pump, 15 hp	3,300	
Treatment building, 144 sq. ft. @ \$150 per sq. ft.	21,600	
Power installation	2,000	
Water lines, furnished and installed	332,150	
Fire hydrants, furnished and installed	<u>49,000</u>	
Subtotal for Area 1		\$ 428,050
AREA 2:		
Storage tank, steel, 250,000 gallon	\$ 250,000	
Water lines, furnished and installed	359,200	
Fire hydrants, furnished and installed	<u>41,250</u>	
Subtotal for Area 2		\$ 650,450
AREA 3:		
Water lines, furnished and installed	\$ 487,200	
Fire hydrants, furnished and installed	<u>60,500</u>	
Subtotal for Area 3		\$ <u>547,700</u>
Subtotal Areas 1, 2 and 3		\$1,626,200
Design, Management and Contingencies @ 25%		<u>406,550</u>
ALTERNATIVE 1 TOTAL COSTS		\$2,032,750
ALTERNATIVE 1 TOTAL ROUNDED COSTS		\$2,033,000
155 services @ \$13,115/service		

Water System Alternative 2

Areas 1 and 2

Alternative 2 consists of a piped water system for the Old Town Site and the area south of town along the Talkeetna Spur Road (Areas 1 and 2). There is a 250,000 gallon steel storage tank which provides for fire protection.

TABLE 7

	Costs	Totals
1 Well, 60-foot deep	\$ 20,000	
Pump, 15 hp	3,300	
Storage tank, steel, 250,000 gallon	250,000	
Treatment building, 144 sq. ft. @ \$150 per sq. ft.	21,600	
Water line, furnished and installed	691,357	
Fire hydrants, furnished and installed	90,750	
Power installation	2,000	
Subtotal Areas 1 & 2		\$1,079,007
Design, Management and Contingencies @ 25%		<u>269,752</u>
ALTERNATIVE 2 TOTAL COSTS		\$1,348,759
ALTERNATIVE 2 TOTAL ROUNDED COSTS		\$1,349,000
90 services @ \$14,987/service		

Water System Alternative 3

Area 1

Alternative 3 assumes only the Old Town Site is served with a piped water system. A larger pumphouse is required to house the hydro-pneumatic pressure system. Fire hydrants are provided in anticipation of a larger system in the future, but fire flows will not be available with this system.

TABLE 8

	Costs	Totals
1 Well, 60-foot deep	\$ 20,000	
Pump system	22,000	
Insulated water storage tanks	25,000	
Hydropneumatic tanks	24,000	
Treatment building, 780 sq. ft. @ \$150 per sq. ft.	117,000	
Power installation	2,000	
Water lines, furnished and installed	332,150	
Fire hydrants, furnished and installed	<u>49,000</u>	
Subtotal Area 1		\$ 591,150
Design, Management and Contingencies @ 25%		<u>147,788</u>
ALTERNATIVE 3 TOTAL COSTS		\$ 738,938
ALTERNATIVE 3 TOTAL ROUNDED COSTS		\$ 739,000
60 services @ \$12,315/service		

Water System Alternative 4

Areas 1 and 3

Alternative 4 assumes that only the Old Town Site and the Denali and Talkeetna Heights Subdivision areas are served. As in Alternative 3, a larger pumphouse is required. Fire flows will not be provided.

TABLE 9

	Costs	Totals
1 Well, 60-foot deep	\$ 20,000	
Pump system	22,000	
Water storage tank	25,000	
Hydropneumatic tanks, 3000 gal. cap.	24,000	
Treatment building, 780 sq. ft. @ \$150 per sq. ft.	117,000	
Power installation	2,000	
Water lines, furnished and installed	819,350	
Fire hydrants, furnished and installed	<u>109,500</u>	
Subtotals Areas 1 & 3		\$1,138,850
Design, Management and Contingencies @ 25%		<u>284,713</u>
ALTERNATIVE 4 TOTAL COSTS		\$1,423,563
ALTERNATIVE 4 TOTAL ROUNDED COSTS		\$1,424,000
125 services at \$11,389/service		

ESTIMATED ANNUAL
OPERATION AND MAINTENANCE COSTS

O&M Water System Alternative 1

Areas 1, 2 and 3

Assumes construction of system for Areas 1, 2 and 3, including a steel water tank storage pressure system. This system is capable of providing fire flows.

TABLE 10

	Costs
Heating fuel for pumphouse (92 gallons @ \$1.20/gal)	\$ 110
Labor (416 manhours @ \$15/hr)	6,240
Parts and repair (Assume one major repair per year with 3-man crew for one week: 50 hrs. x \$20/hr x 3)	3,000
Materials	1,000
Equipment rental (50 hrs. @ \$100/hr)	5,000
Electricity Water pumping (73,125 KWH x \$.09/KWH)	6,580
Lighting	165
Bookkeeping and billing (4 hrs. per month x 12 mo. @ \$12/hr)	580
Repaint tank at 10 years	<u>4,000</u>
ALTERNATIVE 1 TOTAL ANNUAL O&M COSTS	\$ 26,675
Divided by 155 services x 12 months = \$14.34 per month per household	

O&M Water System Alternative 2

Areas 1 & 2

Includes construction of Old Town Site and south end of town, with water storage tank pressure system. System capable of providing fire flows.

TABLE 11

	Costs
Heating fuel for pumphouse (92 gallons @ \$1.20/gal)	\$ 110
Labor (312 manhours @ \$15/hr)	4,680
Parts and repair (Assume one major repair per year with 3-man crew for one week: 50 hrs. x \$20/hr x 3)	3,000
Materials	1,000
Equipment rental (50 hrs. @ \$100/hr)	5,000
Electricity	
Water pumping (40,500 KWH x \$.09/KWH)	3,645
Lighting	165
Bookkeeping and billing (4 hrs. per month x 12 mo. @ \$12/hr)	580
Repaint tank at 10 years	<u>4,000</u>
ALTERNATIVE 2 TOTAL ANNUAL O&M COSTS	\$ 22,180
Divided by 90 services x 12 months = \$20.54 per month per household	

O&M Water System Alternative 3

Area 1

Operation and maintenance cost for the Old Town Site and immediate surrounding area with hydropneumatic pressure system:

TABLE 12

	Costs
Heating fuel for pumphouse (495 gallons @ \$1.20/gal)	\$ 590
Labor (208 manhours @ \$15/hr)	3,120
Parts and repair (Assume one major repair per year with 3-man crew for one week: 50 hrs. x \$20/hr x 3)	3,000
Materials	1,000
Equipment rental (50 hrs. @ \$100/hr)	5,000
Electricity Water pumping (27,000 KWH x \$.09/KWH)	2,430
Lighting	165
Bookkeeping and billing (4 hrs. per month x 12 mo. @ \$12/hr)	<u>580</u>
ALTERNATIVE 3 TOTAL ANNUAL O&M COSTS	\$ 15,385
Divided by 60 services x 12 months = \$22.06 per month per household	

O&M Water System Alternative 4

Areas 1 and 3

Assumes construction of Old Town Site and Denali and Talkeetna subdivision sections with hydropneumatic pressure system.

TABLE 13

	Costs
Heating fuel for pumphouse (495 gallons @ \$1.20/gal)	\$ 590
Labor (312 manhours @ \$15/hr)	4,680
Parts and repair (Assume one major repair per year with 3-man crew for one week: 50 hrs. x \$20/hr x 3)	3,000
Materials	1,000
Equipment rental (50 hrs. @ \$100/hr)	5,000
Electricity Water pumping (59,265 KWH x \$.09/KWH)	5,340
Lighting	165
Bookkeeping and billing (4 hrs. per month x 12 mo. @ \$12/hr)	<u>580</u>
ALTERNATIVE 4 TOTAL ANNUAL O&M COSTS	\$ 20,355
Divided by 125 services x 12 months = \$13.57 per month per household	

TALKEETNA SEWER SYSTEM

Sewer Alternative 5 - Leach Field

Area 1

Sewer Alternative 5 assumes that only the Old Town Site is served with a septic tank effluent pumping system (STEP). A community leach field is constructed either on or near the river end of the village airstrip. Sixty services would be hooked up to this system.

TABLE 14

	Costs	Totals
Clearing and grubbing	\$ 12,000	
Earthwork (field)	87,724	
Drain tile and insulation	45,678	
Sewer piping and earthwork	487,938	
Septic tanks, furnished & installed	240,000	
Pump and abandon old tanks	<u>30,000</u>	
Subtotal Sewer Alternative 5		\$ 903,340
Design, Management and Contingencies @ 25%		<u>225,835</u>
ALTERNATIVE 5 TOTAL COSTS		\$1,129,175
ALTERNATIVE 5 TOTAL ROUNDED COSTS		\$1,129,000
60 services @ \$18,820/service		

Sewer Alternative 6 - Lagoon

Areas 1, 2 and 3

Alternative 6 assumes that the entire community is sewered and an aerated lagoon with sufficient volume to store effluent over the winter is constructed. A STEP system will be utilized for sewage collection.

TABLE 15

	Costs	Totals
AREA 1:		
Sewer line, furnished and installed	\$ 447,024	
Septic tanks, furnished and installed	240,000	
Pump and abandon old tanks	30,000	
Lagoon earthwork	408,922	
Lagoon materials	527,860	
Facility for aeration system, 160 sq. ft.	<u>24,000</u>	
Subtotal	\$1,677,806	
Design, Management & Contingencies @ 25%	<u>419,451</u>	
SUBTOTAL ALTERNATIVE 6, AREA 1		\$2,097,257
SUBTOTAL ROUNDED ALTERNATIVE 6, AREA 1		\$2,097,000
60 services @ \$34,950/service		

	Costs	Totals
AREA 2:		
Sewer lines, furnished and installed	\$ 109,212	
Septic tanks, furnished and installed	120,000	
Pump and abandon old tanks	<u>15,000</u>	
Subtotal	\$ 244,212	
Design, Management and Contingencies @ 25%	<u>61,053</u>	
SUBTOTAL ALTERNATIVE 6, AREA 2		\$ 305,265
SUBTOTAL ROUNDED ALTERNATIVE 6, AREA 2		\$ 305,000
30 services @ \$10,167/service		
AREA 3:		
Sewer lines, furnished and installed	\$ 437,452	
Septic tanks, furnished and installed	260,000	
Pump and abandon old tanks	<u>32,500</u>	
Subtotal	\$ 729,952	
Design, Management and Contingencies @ 25%	<u>182,488</u>	
SUBTOTAL ALTERNATIVE 6, AREA 3		\$ 912,440
SUBTOTAL ROUNDED ALTERNATIVE 6, AREA 3		\$ 912,000
65 services @ \$14,037/service		<u> </u>
ALTERNATIVE 6 TOTAL COSTS		\$3,314,000
ALTERNATIVE 6 TOTAL ROUNDED COSTS		\$3,314,000
155 services @ \$21,380/service		

Sewer Alternative 7 - RBC System

Areas 1, 2 and 3

Alternative 7 makes the same assumptions as Alternative 6, but sewage treatment is by a rotating biological contactor instead of a lagoon.

TABLE 16

	Costs	Totals
AREA 1*:		
Sewer line, furnished	\$ 447,024	
Septic tanks, furnished and installed	240,000	
Pump and abandon old tanks	30,000	
Rotating Biological Contactor & Clarifier	102,600	
RBC shipping and installation	9,960	
RBC Facility, 800 sq. ft. @ \$150/sq. ft.	120,000	
RBC Facility foundation	<u>10,000</u>	
Subtotal	\$ 959,584	
Design, Management and Contingencies @ 25%	<u>239,896</u>	
SUBTOTAL ALTERNATIVE 7, AREA 1		\$1,199,480
SUBTOTAL ROUNDED ALTERNATIVE 7, AREA 1		\$1,200,000
60 services @ \$19,991/service		

	Costs	Totals
AREA 2*:		
Sewer line, furnished and installed	\$ 109,212	
Septic tanks, furnished and installed	120,000	
Pump and abandon old tanks	<u>15,000</u>	
Subtotal	\$ 244,212	
Design, Management and Contingencies @ 25%	<u>61,053</u>	
SUBTOTAL ALTERNATIVE 7, AREA 2		\$ 305,265
SUBTOTAL ROUNDED ALTERNATIVE 7, AREA 2		\$ 305,000
30 services @ \$10,176/service		
AREA 3:		
Sewer line, furnished and installed	\$ 437,452	
Septic tanks, furnished and installed	260,000	
Pump and abandon old tanks	<u>32,500</u>	
Subtotal	\$ 729,952	
Design, Management and Contingencies @ 25%	<u>182,488</u>	
SUBTOTAL ALTERNATIVE 7, AREA 3		\$ 912,440
SUBTOTAL ROUNDED ALTERNATIVE 7, AREA 3		\$ 912,000
65 services @ \$14,037/service		
ALTERNATIVE 7 TOTAL COSTS		\$2,417,185
ALTERNATIVE 7 TOTAL ROUNDED COSTS		\$2,417,000
155 services @ \$15,595/service		

*Much of the sewer piping in Area 2 is included in the Area 1 estimate because it connects Area 1 to the disposal site in Area 2.

ESTIMATED ANNUAL
OPERATION AND MAINTENANCE COSTS

O&M Sewer Alternative 5 - Leach Field

Area 1

TABLE 17

	Costs
Electricity for pressure pumps (120 KWH x \$.09/KWH x 60)	\$ 648
Monitor (60 tanks @ 6/day = 10 days 10 days x 8 hrs/day @ \$15/hr)	1,200
Tank pumping (1/2 home/year @ \$200 home x 60)	6,000
Major repair (Assume one major repair per year with 3-man crew for one week: 50 hrs. x \$20/hr x 3)	3,000
Materials	1,000
Equipment rental (50 hrs. @ \$100/hr)	5,000
Pump replacement (250 x 60 pumps ÷ 7 years)	<u>2,143</u>
ALTERNATIVE 5 TOTAL ANNUAL O&M COSTS	\$ 18,991
Divided by 60 services x 12 months = \$26.38 per month per household	

O&M Sewer Alternative 6 - Lagoon

Areas 1, 2 and 3

TABLE 18

	Costs
Building heat (102 gallons x \$1.20/gal)	\$ 122
Electricity for compressor (21,600 KWH x \$.09/KWH)	1,944
Labor (20-Hour Week x 50 weeks/year @ \$15/hr)	15,000
(40-Hour Week x 2 weeks/year @ \$15/hr)	1,200
Monitor (155 tanks @ 6/day = 26 days 26 days x 8 hrs/day @ \$15/hr)	3,120
Tank pumping (1/2 home/year @ \$200/home x 155)	15,500
Material	1,000
Major repair (Assume one major repair per year with 3-man crew for one week: 50 hrs. x \$20/hr x 3)	1,000
Materials	1,000
Equipment rental (50 hrs. @ \$100/hr)	5,000
Pump replacement (250 x 155 pumps ÷ 7 years)	<u>5,536</u>
ALTERNATIVE 6 TOTAL ANNUAL O&M COSTS	\$ 52,422
Divided by 155 services x 12 months = \$28.18 per month per household	

O&M Sewer Alternative 7 - RBC System

Areas 1, 2 and 3

TABLE 19

	Costs
Building heat (508 gallons x \$1.20/gal)	\$ 610
Electricity (3,000 KWH x \$.09/KWH)	270
Labor (16-Hour Week x 52 weeks/year @ \$15/hr)	12,480
Monitor (155 tanks @ 6/day = 26 days 26 days x 8 hrs/day @ \$15/hr)	3,120
Tank pumping (1/2 home/year @ \$200/home x 155)	15,500
Major repair (Assume one major repair per year with 3-man crew for one week: 50 hrs. x \$20/hr x 3)	3,000
Materials	1,000
Equipment rental (50 hrs. @ \$100/hr)	5,000
Pump replacement ((\$250 x 155 pumps ÷ 7 years)	<u>5,536</u>
ALTERNATIVE 7 TOTAL ANNUAL O&M COSTS	\$ 46,516
Divided by 155 services x 12 months = \$25.01 per month per household	

O&M Sewer Alternative 8 - RBC System

Area 1

TABLE 20

	Costs
Building heat (508 gallons x \$1.20/gal)	\$ 610
Electricity (3,000 KWH x \$.09/KWH)	270
Labor (16-Hour Week x 52 weeks/year @ \$15/hr)	12,480
Monitor (60 tanks @ 6/day = 10 days 10 days x 8 hrs/day @ \$15/hr)	1,200
Tank pumping (1/2 home/year @ \$200/home x 60)	6,000
Major repair (Assume one major repair per year with 3-man crew for one week: 50 hrs. x \$20/hr x 3)	3,000
Materials	1,000
Equipment rental (50 hrs. @ \$100/hr)	5,000
Pump replacement (\$250 x 60 pumps ÷ 7 years)	<u>2,143</u>
ALTERNATIVE 8 TOTAL ANNUAL O&M COSTS	\$ 31,703
Divided by 60 services x 12 months = \$44.03 per month per household	

O&M Sewer Alternative 9 - RBC System

Areas 1 and 2

TABLE 21

	Costs
Building heat (508 gallons x \$1.20/gal)	\$ 610
Electricity (3,000 KWH x \$.09/KWH)	270
Labor (16-Hour Week x 52 weeks/year @ \$15/hr)	12,480
Monitor (90 tanks @ 6/day = 15 days 15 days x 8 hrs/day @ \$15/hr)	1,800
Tank pumping (1/2 home/year @ \$200/home x 90)	9,000
Major repair (Assume one major repair per year with 3-man crew for one week: 50 hrs. x \$20/hr x 3)	3,000
Materials	1,000
Equipment rental (50 hrs. @ \$100/hr)	5,000
Pump replacement (250 x 90 pumps ÷ 7 years)	<u>3,214</u>
ALTERNATIVE 9 TOTAL ANNUAL O&M COSTS	\$ 36,374
Divided by 90 services x 12 months = \$33.68 per month per household	

O&M Sewer Alternative 10 - Lagoon

Area 1

TABLE 22

	Costs
Building heat (102 gallons x \$1.20/gal)	\$ 122
Electricity for compressor (8,280 KWH x \$.09/KWH)	745
Labor (20-Hour Week x 50 weeks/year @ \$15/hr)	15,000
(40-Hour Week x 2 weeks/year @ \$15/hr)	1,200
Monitor (60 tanks @ 6/day = 10 days 10 days x 8 hrs/day @ \$15/hr)	1,200
Tank pumping (1/2 home/year @ \$200/home x 60)	6,000
Major repair (Assume one major repair per year with 3-man crew for one week: 50 hrs. x \$20/hr x 3)	3,000
Materials	1,000
Equipment rental (50 hrs. @ \$100/hr)	5,000
Pump replacement (\$250 x 60 pumps ÷ 7 years)	<u>2,143</u>
ALTERNATIVE 10 TOTAL ANNUAL O&M COSTS	\$ 35,410
Divided by 60 services x 12 months = \$49.18 per month per household	

O&M Sewer Alternative 11 - Lagoon

Areas 1 and 2

TABLE 23

	Costs
Building heat (102 gallons x \$1.20/gal)	\$ 122
Electricity for compressor (12,600 KWH x \$.09/KWH)	1,134
Labor (20-Hour Week x 50 weeks/year @ \$15/hr)	15,000
(40-Hour Week x 2 weeks/year @ \$15/hr)	1,200
Monitor (90 tanks @ 6/day = 15 days 15 days x 8 hrs/day @ \$15/hr)	1,800
Tank pumping (1/2 home/year @ \$200/home x 90)	9,000
Major repair (Assume one major repair per year with 3-man crew for one week: 50 hrs. x \$20/hr x 3)	3,000
Materials	1,000
Equipment rental (50 hrs. @ \$100/hr)	5,000
Pump replacement (\$250 x 90 pumps ÷ 7 years)	<u>3,214</u>
ALTERNATIVE 11 TOTAL ANNUAL O&M COSTS	\$ 40,470
Divided by 90 services x 12 months = \$37.47 per month per household	

SUMMARY

WATER AND SEWER SYSTEM ALTERNATIVES
CAPITAL AND O & M COST ESTIMATES

TABLE 24

Alternative	Area(s)	Capital Cost	O&M Cost/Year
WATER:			
1*	1, 2 & 3	\$ 2,033,000	\$ 26,675
2	1, 2	1,349,000	22,180
3	1	739,000	15,885
4	1, 3	1,424,000	20,355
SEWER:			
5*	1	1,129,000	18,991
6	1, 2 & 3	3,314,000	52,422
7	1, 2 & 3	2,417,000	46,516
8	1	1,200,000	31,703
9	1, 2	1,505,000	36,374
10	1	2,402,000	35,410
11	1, 2	2,402,000	40,470

*Recommended Alternatives.

VII. ADDENDUM

References

1. Flood Plain Information
Talkeetna River - Susitna River - Chulitna River
Talkeetna, Alaska
Dept. of the Army, Alaska District, Corps of Engineers
Anchorage, Alaska June 1992
2. Matanuska-Susitna Borough
Population Projections and Growth Potential
3. FY's LEGISLATIVE TRANSPORTATION PROJECTS
4. Talkeetna Materials Investigation
January 1980 DOT/PF, Division of Aviation
5. Household Survey Report, Talkeetna
February 1984 DOC #1109
Alaska Power Authority, Project #7114
Frank Orth & Associates, Inc.
6. Business Survey Report, Talkeetna
February 1984
Alaska Power Authority
Frank Orth & Associates, Inc.
7. Alaska Regional Profiles

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION

BILL SHEFFIELD, GOVERNOR

Telephone: (907)

Address: 274-2533

437 E Street

Suite 200

Anchorage, AK

99501

Dear Resident:

In December 1983, a meeting was held between residents of Talkeetna, the Department of Environmental Conservation (DEC), and the representatives of the Mat-Su Borough. The reason for this meeting was the mutual concern over water and wastewater conditions in Talkeetna. As a result of that meeting the Mat-Su Borough made available \$40,000 to fund a feasibility study. The Village Safe Water section of DEC was asked to conduct this study. Wells and waste disposal systems are located close together and some wells have become contaminated. There is concern that in the future more wells could be contaminated. State Wastewater Regulations state that the minimum lot size is 40,000 square feet for on-site water and sewer. Minimum separation distances for a well and soil absorption system is 100 feet. Because lot sizes in Talkeetna are small most cannot meet these requirements.

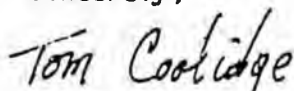
On March 1st a second meeting was held between Village Safe Water and the residents of Talkeetna. At that meeting it was decided there should be a consensus of the whole community, not just those present, that a water and sewer feasibility study is needed. It was decided that the way this consensus would be reached would be with a questionnaire distributed to residents in the affected area.

On March 15th, a third meeting was held to review and approve the questionnaire.

You are being asked to answer questions concerning your own water and wastewater facilities and those in the community as a whole. You are also being asked to decide whether or not a feasibility study needs to be done. If you decide yes, a study will be done to outline possible problems and develop alternative solutions. Capital cost and operation and maintenance cost estimates for each alternative will be developed. If a majority answer no, then the feasibility study process will stop here.

If you have any questions please call me at 274-2533.

Sincerely,



Tom Coolidge, P.E.
Village Safe Water

TALKEETNA PUBLIC SURVEY
Summary of Results

1. Name: 56 responses
2. Are you a resident and/or land owner in the area outlined in map A/B? (mark location on map).
3. If yes, what block and lot number(s) and subdivision?
4. Do you have a well in use on your lot? Yes 45 No 9
5. If yes, how deep is it? 14-115', Average 27'
6. How do you dispose of wastewater/sewage?
8-seepage pit 7-outhouse 3-no facilities
34-septic system 11-other
7. Have you ever had problems with it? Yes 10 No 41
8. What kind? Poor percolation.
9. Do you feel you have a problem with potable water?
Yes-17 No-30 1-Uncertain

If yes, what do you feel the problem is if known. Shallow wells located too close to waste disposal site.
10. How far is your well from the closest waste disposal area?
Greater than 100'-27 Less than 100'-11
Don't know-4
11. Do you get water from any other source in Talkeetna?
Yes-9 No-__ Where? various, Union 76
12. About how much water do you haul each time and how often?

13. Do you feel that Talkeetna has a problem with potable water?
Yes-47 No-3 2-Don't know

If yes, what do you feel the problem is?
High water table-downtown area-shallow wells
14. What area of town has the problem? _____

15. Do you feel that Talkeetna has a problem with sewage disposal?

Yes-41 No-5 3-Don't know

If yes, what do you feel the problem is? 3-Don't know, small lots, poor drainage, shallow wells.

16. What area of town? _____

17. Do you support a water and sewer feasibility study that would investigate the possible problems in Talkeetna, and would propose alternative solutions to those problems along with capital cost and operation and maintenance costs?

Yes-43 No-8 5-No Answer

GROUNDWATER ELEVATION DATA

Well No.	Description	Elevation	Water Elevation	Ground Elevation	Difference
1	Block 3, Lot 7 Talkeetna Townsite Top of 6.5" steel cap	342.122 -7.9'	334.222	340.872	6.65
2	Govt. Lot 32 T26N, R5W, Sec. 25 Top of 7" cap	346.114 -13.6'	332.514	343.414	10.9
3	Block 25, Lot A-14 Talkeetna Townsite Top of 6.5" steel cap	342.615 -12.6'	330.015	339.615	9.6
4	Block 1, Lot 11 Denali Subdivision Top of 6.5" steel casing	350.209 -9.0'	341.209	348.293	7.08
5	Govt. Lot 6 T26N, R5W, Sec. 25 Top of 6.5" casing	344.121 -8.7'	335.421	342.621	7.2
6	Block 3, Lot 4 Talkeetna Heights Top of 6.5" steel cap	354.145 -9.7'	344.445	351.978	7.53
7	Block 12, Lot 8 Talkeetna Townsite Top of 6.5" steel cap	343.950 -9.5'	334.450	341.200	6.75

SUMMARY
WATER SAMPLE ANALYTICAL REPORT
TALKEETNA

Sample No.*	pH	Nitrate-N	Phosphorous	Sulfate	TFR	Chloride	Conductivity
1	7.1	0.57	<0.021	4.5	57	4.0	110
2	7.4	0.37	0.032	5.9	82	6.9	140
3	7.7	0.46	0.017	5.2	85	6.9	130
4	7.3	0.35	0.018	5.9	86	8.9	140
5	7.1	0.58	<0.01	4.4	74	8.9	130
6	7.0	1.0	<0.01	5.4	86	9.9	140
7	7.1	1.1	0.02	5.6	54	1.0	140
8	7.2	0.6	0.037	4.7	92	3.0	140
9	7.5	0.42	<0.01	4.8	100	7.9	120
10	7.3	0.46	0.029	4.5	74	8.9	130
11	7.1	<0.10	0.054	1.3	81	1.0	120
12	7.5	<0.10	0.037	<1.0	72	1.0	120
13	7.4	<0.10	0.040	1.8	103	1.0	140
14	7.9	<0.10	0.053	4.6	84	1.0	130
15	7.2	0.36	0.04	3.1	86	1.0	120
16	7.2	1.6	<0.01	7.7	98	11.0	140
17	7.4	0.92	0.105	5.8	85	11.0	140
18	7.5	0.40	0.100	4.6	89	7.9	140
19	7.5	0.40	0.07	5.0	95	7.9	120
20	7.4	0.26	0.079	3.6	80	4.0	110
21	7.3	0.13	0.035	1.5	77	2.0	110
22	7.3	<0.10	0.033	<1.0	116	1.0	160
23	7.6	0.43	0.032	4.8	32	7.9	120

*Exact locations of sample sites are available from Village Safe Water, 437 "E" Street, Anchorage, Alaska 99501.

SUMMARY
DRINKING WATER ANALYSES
TOTAL COLIFORM BACTERIA

Fermentation Tube
Untreated Water

Sample No.*	Result
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0

*Exact locations of sample sites are available from Village Safe Water, 437 "E" Street, Anchorage, Alaska 99501.

TALKEETNA COMMUNITY MEETING

ATTENDANCE SHEET

March 1, 1984

Tom Coolidge
Jim Kellard
Susan Kellard
Deloris Scott
Waymon West
John Carlson
Phillip Wellona
Kathy Krompacky
Norm Solberg
Ron Garrett
Tom Sisul
Verner J. Ranhauskin
Wayne Holley
Jim Okonek
Tom Scanlon
Rose Jenne
Patsy Krompacky
Verna Thompson
Arthur Mannic
Richard Derrickson
Kercy Trump

AD HOC COMMITTEE MEETING

July 31, 1984

Rose Jenne
Tom Scanlon
Verner Ranschuskin
Mac Stevens
Margaret Melnick
Mr. Clark

Wayne Holley
Committee for Safe Water
P.O.Box 388
Talkeetna, Alaska 99676

August 9, 1984

Tom Coolidge
Department of Environmental Conservation
Village Safe Water Division
437 E Street, Suite 200
Anchorage, Alaska

Mr. Coolidge:

Our committee has reviewed your report on the study of the possible water supply and waste disposal problems in Talkeetna. We agree with your findings and are ready to begin the task of implementing your recommendations.

Committee for Safe Water



Wayne Holley

Statement of Support
for Creation of
TALKEETNA WATER AND SEWER SERVICE AREA

Good evening Madame Mayor, Mr. Thurlow, Assembly Members, and Visitors. Tonight I represent those 137 residents of the Talkeetna area who signed a recent petition requesting that you place on the October General Election Ballot the question of whether to establish a water and sewer service area in Talkeetna.

There are several reasons for this request. One of these reasons is that many of the existing septic systems are only marginally dependable because;

- 1) the soil in much of the area is saturated with silt and sludge resulting from many years of on-site waste disposal in a crowded area, and
- 2) the water table ranges from a shallow few feet up to nearly zero in wet seasons.

Either of these situations can render a septic system useless and when they occur together there is a doubly serious problem.

A second reason for the request results from the growth of Talkeetna in the past few years and its expected growth which is tied to both the growth of the borough as a whole and the large capital projects which are anticipated for the Susitna Valley area. This growth results in requests for new septic system permits for both residential and business use. However, the conditions of the area mean that most of those permits must be refused and thus our growth is stunted.

Of course, the problems cited earlier are small when compared with the potential health problem. During wet seasons many septic systems have the potential for releasing improperly treated waste products into and onto the ground. This has happened in some areas requiring that all water from wells in those areas be boiled before use. There is a growing potential for this to occur more frequently and in other areas.

All of the reasons mentioned earlier bear upon one problem which looms over the entire community. Both the State of Alaska and you, the Borough, have recognized tourism as our single most valuable renewable resource. If exploited intelligently it is an inexhaustible and non-destructive source of revenue for the Talkeetna area and for the Borough as a whole. And yet, we are severely restricted in our attempts to attract this resource.

Many times in the past the waste disposal systems of our merchants who serve the tourists have been over-taxed. Not only has this caused pressure to scale down our attempts to attract tourism, it also tends to scare people away. Add to this the refusal of new permits which prevents any new service oriented businesses from locating in the area and I think we can expect very little growth in our share of this very important resource.

Our problem extends beyond our area. To illustrate this, consider the following points:

Throughout the spring and early summer, hundreds of mountain climbers from all over the world converge on Talkeetna in preparation to climbing Denali. Last year the National Park Service recognized that this was creating a severe waste disposal problem on the mountain and the problem was widely publicized. What they did not recognize is that all of those climbers pass through our town and leave as much or more waste there.

Talkeetna is one of the popular stops along the Alaska Railroad. Each year hundreds of travelers arrive at and depart from the Talkeetna station and yet the Railroad provides no public restrooms.

Talkeetna supplies drinking water, showers and laundry facilities for people over a very large area, some as far away as Trappers Creek. One of the public showers provides more than 600 showers each month.

In our efforts to solve our problem, we requested that a study be done by the Department of Environmental Conservation. In the preliminary draft of the report from that study, a water and sewer system was recommended for the area. In order to proceed any further, we must form the Service Area which would be the subject of the ballot question we are now requesting you to authorize.

We, the people of Talkeetna, ask you to please recognize our problem and to help us find its solution.

Ed's Copy

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Bill Sheffield
Governor

Richard Neve'
Commissioner of
Environmental Conservation



VILLAGE SAFE WATER

FY 86

PROPOSED CAPITAL PROJECTS

FACILITY CONSTRUCTION & OPERATION

OCTOBER 1984

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VILLAGE SAFE WATER
FY86 CAPITAL BUDGET REQUEST

Purpose

The purpose of this report is to provide State policy makers with backup information which supports the Village Safe Water program FY86 capital budget request.

Introduction

The Village Safe Water (VSW) Program within the Alaska Department of Environmental Conservation (ADEC) assists rural communities with the planning, design, and construction of sanitation facilities. This work is authorized by AS 46.07.

What follows is background information on projects included in the ADEC capital budget for FY86. There are two categories of projects:

- (1) Prioritized projects established by ADEC and the twelve regional health corporations; and
- (2) Various statewide projects commissioned by the Alaska Legislature.

Sec 3, SB47

Prioritized Projects

To determine construction priorities for the VSW Program in FY86, a panel was convened. It consisted of VSW people, an engineer from outside the Department, and a representative of the Governor's Office of Management and Budget. Twelve regional health corporations were contacted and six responded by recommending eighteen communities which were prioritized.

Three categories were established to aid in the evaluation:

Category A - Those villages that do not have community sanitation facilities or have a documented public health problem;

Category B - Communities with sanitation systems that are not fully operational, or potential health problems exist, or funds are available but additional money is needed to correct the problem;

Category C - Communities with operational facilities that need to be expanded or a higher level of service is desired by the residents.

Using available background information, VSW priorities were established as follows:

Category A

1. Shungnak
2. Healy Lake
3. Lime Village
4. Red Devil
5. Circle
6. Igushik
7. Lewis Point

Category B

8. Diomedes
9. Noatak
10. Kiana
11. St. Paul
12. Venetie
13. Kalskag
14. St. George
15. Telida

Category C

16. Kivalina
17. Golovin
18. Koyuk

Please keep the following points in mind when reviewing the fact sheets on each community (pages 2 - 22):

1. Because of the limited time available to prepare this year's capital budget, no visits were made to these villages. Background information was obtained from the regional health corporations, health professionals, and others.

2. Proposed improvements in each village are subject to review and approval by the appropriate village entity. Therefore, the scope of some projects may change.

3. Engineering feasibility studies have not been done on these proposed projects because planning funds were not available for this purpose. Studies will be done if projects are funded.

4. The cost estimates used on the attached fact sheets are subject to change due to local environmental conditions and other factors. For example, before construction starts in five villages, the relationship of 1984 direct municipal grants to proposed VSW projects must be evaluated.

5. Scheduling of construction depends upon the following:
- a. Availability of funds to initiate the work;
 - b. Completion of feasibility studies and review by the community;
 - c. Barge schedules;
 - d. Weather; and
 - e. Availability of VSW staff.

A lump sum appropriation of \$17 million is requested. This amount will enable VSW to plan, design, and build each project. If less is appropriated, the list will be worked from the top down until all funds are spent.

NOTE: For a discussion of various statewide projects, please refer to pages 23 - 34.

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
SHUNGNAK	1	NANA	210	\$ 720,000
			Other Funding*	Amount
			(1983) SB 162	\$ 400,000
			(1984) HB 691	300,000
				\$ 145,000
				50,000

EXISTING SITUATION

- Frozen PHS water and sewer system, only watering point in operation
- Winter 1984, large amount of sewage on ground near HUD subdivision

ASSUMPTIONS

- Assume water system frozen, replace extended water main
- Assume sewer system OK (effluent flowing through manholes to lagoon)
- Two lift stations need replaced; city's direct grant funds will pay for lift station repairs

FUNDING ESTIMATE

- Water system replacement:	
11,000 feet pipe @ \$60/ft installed	\$ 660,000
Contingency 10%	<u>60,000</u>
Total	\$ 720,000

COMMENTS

- Not sure how city will use direct grants
- Rural Ventures Alaska retained by city

*Direct municipal grants for water and sewer.

WORK TO BE DONE

- Engineering Plan
- Design
- Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
HEALY LAKE	2	DOYON	30	\$ 300,000
Other Funding			Amount	Balance
None known				

EXISTING SITUATION

- Water hauled from lake and boiled
- No sewage disposal system

ASSUMPTIONS

- No developed community sanitation facilities
- Eight homes need service
- Winter construction to transport drill rig across lake
- Assume wells < 100 feet/no treatment required
- Assume community drainfield for waste disposal

FUNDING ESTIMATE

8 wells @ \$6000	\$ 48,000
MOB & DeMOB well rig	40,000
Install pumps & pump houses	56,000
Install 8 septic tanks	32,000
Install drainfield (rock)	85,000
Engineering & contingency	<u>39,000</u>
Total	\$ 300,000

COMMENTS

WORK TO BE DONE

- X Engineering Plan
- X Design
- X Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
LIME VILLAGE	3	CALISTA	42	\$ 365,000
			Other Funding	Amount
			None known	Balance

EXISTING SITUATION

- No developed community sanitation facilities
- Water hauled from school or springs

ASSUMPTIONS

- No power plant in town
- Small generator set must be part of project
- Sewage disposal by individuals

FUNDING ESTIMATE

Community well & watering point	\$ 280,000
Sewage bunkers	38,000
Engineering & contingency	<u>47,000</u>
Total	\$ 365,000

COMMENTS

- One of the few villages that has never received sanitation facilities from federal or state government

WORK TO BE DONE

- X Engineering Plan
- X Design
- X Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
RED DEVIL	4	CALISTA	42	\$ 430,000
			Other Funding	Amount
			None known	Balance

EXISTING SITUATION

- Four families have wells; rest haul from river

ASSUMPTIONS

- Four existing wells need rehabilitation
- No community power

FUNDING ESTIMATE

5 new wells @ \$30,000	\$ 150,000
Renovate 4 wells @ \$11,000	44,000
Plumb 9 houses @ \$6000	54,000
9 septic tanks @ \$4000	36,000
9 seepage pits @ \$10,000	90,000
Engineering & contingency	56,000
Total	\$ 430,000

COMMENTS

WORK TO BE DONE

- Engineering Plan
- Design
- Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
CIRCLE	5	DOYON	51	\$ 150,000
		Other Funding	Amount	Balance
		None known		

EXISTING SITUATION

- Water hauled from river or school

ASSUMPTIONS

- City will make arrangements to assess and collect user fees to maintain watering point

FUNDING ESTIMATE

Drill community well	\$ 60,000
Construct well house	80,000
Pump & plumbing	<u>10,000</u>
Total	\$ 150,000

COMMENTS

- When VSW visited this village in 1980, community could not afford operation & maintenance costs associated with community water supply

WORK TO BE DONE

- X Engineering Plan
- X Design
- X Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
IGUSHIK	6	BRISTOL BAY	200 (seasonal)	\$ 45,000
			Other Funding	Amount
			None known	Balance

EXISTING SITUATION

- Seasonal fish camp with no potable water supply

ASSUMPTIONS

- No power, sanitation system must be completely self-supporting
- No water treatment required

FUNDING ESTIMATE

MOB & DeMOB well drilling rig	\$ 10,000
Drill well & install hand pump	<u>35,000</u>
Total	\$ 45,000

COMMENTS

WORK TO BE DONE

- Engineering Plan
- Design
- Construction

VSW F:86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
LEWIS POINT	7	BRISTOL BAY	200 (seasonal)	\$ 50,000
			Other Funding	Amount
			None known	Balance

EXISTING SITUATION

- Seasonal fish camp with no potable water supply

ASSUMPTIONS

- No power
- No water treatment required

FUNDING ESTIMATE

MOB & DeMOB drilling rig	\$ 15,000
Drill well & install hand pump	<u>35,000</u>
Total	\$ 50,000

COMMENTS

- Well driller will do Lewis Point first, then move to Ugashik

WORK TO BE DONE

- Engineering Plan
- Design
- Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
DIOMEDE	8	NORTON SOUND	135	\$ 500,000
Other Funding			Amount	Balance
PHS			\$ 750,000	

EXISTING SITUATION

- Inadequate water storage
- School runs out of water (BIA)

ASSUMPTIONS

- Assume PHS to provide 400,000-gallon storage, water treatment building and foundations, replace water transmission line and hook-up to BIA
- Assume additional VSW funds (\$500,000) needed to complete PHS job

FUNDING ESTIMATE

Develop water source	\$ 200,000
Provide additional water storage	<u>300,000</u>
Total	\$ 500,000

COMMENTS

WORK TO BE DONE

- Engineering Plan
- Design
- Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
NOATAK	9	NANA	290	\$ 450,000
			Other Funding	Amount
			None known	Balance

EXISTING SITUATION

- PHS piped water and sewer system to 73 homes
- South "Loop" frozen
- Sixteen homes and several businesses without service

ASSUMPTIONS

- Assume rest of system OK

FUNDING ESTIMATE

Replace South Loop 5000' @ \$50/ft	\$ 250,000
Replace service lines 40 @ \$2700	108,000
Upgrade pumphouse	51,000
Engineering & contingency	<u>41,000</u>
Total	\$ 450,000

COMMENTS

WORK TO BE DONE

- Engineering Plan
- Design
- Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
KIANA	10	NANA	345	\$ 330,000
		Other Funding *	Amount	Balance
		(1984) SB 420	\$ 300,000	\$ 60,000

EXISTING SITUATION

- Replace damaged sewer line in Spruce housing area

ASSUMPTIONS

- Rest of system OK
- Laundromat funds cannot be used for sewer rehabilitation

FUNDING ESTIMATE

Replace 4000' sewer line @ \$56/ft	\$ 220,000
Reset manholes 14 @ \$4800	67,200
Engineering & contingency	<u>42,800</u>
Total	\$ 330,000

COMMENTS

- Damaged sewer system apparently caused by improper construction

*Direct municipal grant for community laundromat

WORK TO BE DONE

- Engineering Plan
- Design
- Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
ST. PAUL	11	ALEUTIAN/ PRIBILOF	300	\$ 800,000
		Other Funding	Amount	Balance
		PHS	\$ 1,200,000	

EXISTING SITUATION

- Existing sanitation system inadequate
- Water storage tank leaking
- Sewage treatment needs improvement

ASSUMPTIONS

- PHS providing septic tank and outfall line, lift stations
- PHS funds not enough to finish job
- VSW will fund interceptor sewer and connect to PHS effluent sewer outfall

FUNDING ESTIMATE

Interceptor lines 10,000' @ \$60/ft	\$ 600,000
Storage tank lines	120,000
Engineering & contingency	<u>80,000</u>
Total	\$ 800,000

COMMENTS

WORK TO BE DONE

- Engineering Plan
- Design
- Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
VENETIE	12	DOYON	160	\$ 500,000
			Other Funding	Amount
			None known	Balance

EXISTING SITUATION

- PHS piped system frozen .

ASSUMPTIONS

- Improvements must be inexpensive to maintain
- PHS system completely inoperable
- Schools hauling water

FUNDING ESTIMATE

Rehab well & build watering point	\$ 60,000
New transmission line from well	180,000
Rehab water treatment building	100,000
New service line to 2 schools	95,000
Engineering & contingency	65,000
Total	\$ 500,000

COMMENTS

- Combination of factors led to demise of PHS system. Planning and design should proceed slowly.

WORK TO BE DONE

- X Engineering Plan
- X Design
- X Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
KALSKAG	13	CALISTA	160	\$ 500,000
		Other Funding	Amount	Balance
		None known		

EXISTING SITUATION

- PHS system of 13 individual wells and septic tanks in operation

ASSUMPTIONS

- Watering point needed for those without service
- High iron content in wells, treatment required

FUNDING ESTIMATE

New well	\$ 50,000
Water treatment building	285,000
Water treatment	100,000
Engineering & contingency	65,000
Total	\$ 500,000

COMMENTS

- Original piped water and sewer system failed in late 1960's.
- Various reasons cited for system failure.

WORK TO BE DONE

- Engineering Plan
- Design
- Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
ST. GEORGE	14	ALEUTIAN/ PRIBILOF	158	\$ 850,000
		Other Funding	Amount	Balance
		PHS	\$ 750,000	

EXISTING SITUATION

- Existing water system suffers from chronic water shortages and high sodium concentrations in well
- PHS to drill exploratory well several miles from town
- PHS to hook up new HUD homes to water and septic system

ASSUMPTIONS

- VSW money needed for additional exploratory wells and transmission line to transport water to town
- VSW funds will augment and help complete PHS project

FUNDING ESTIMATE

New well	\$ 100,000
Transmission line	600,000
Repair storage tank	73,000
Contingency	77,000
Total	\$ 850,000

COMMENTS

- Town sits on fresh water lens
- Salt water encroachment potential problem
- New wells several miles from town must be developed
- Distance of wells from town makes project expensive

WORK TO BE DONE

- Engineering Plan
- Design
- Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
TELIDA	15	DOYON	25	\$ 350,000
Other Funding			Amount	Balance
None known				

EXISTING SITUATION

- Community watering point
- Some residents haul from river and school
- No wastewater disposal

ASSUMPTIONS

- Watering point needs new pumphouse and treatment
- Storage tanks in homes required
- Assume existing well OK

FUNDING ESTIMATE

New water treatment building	\$ 112,000
Watering point treatment	80,000
8 water storage tanks @ \$2000/tank	16,000
8 septic tanks/seepage pits and plumbing @ \$12,000 each	96,000
Engineering & contingency	46,000
Total	\$ 350,000

COMMENTS

WORK TO BE DONE

- X Engineering Plan
- X Design
- X Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
KIVALINA	16	NANA	250	(PHASE I) \$2,200,000 (PHASE II) 2,800,000
			Other Funding*	Amount
			(1983) HB 105	\$ 150,000
				Balance
				\$ 120,000

EXISTING SITUATION

- PHS community watering point, 600,000-gallon storage tank in operation
- Sewage bunkers overloaded

ASSUMPTIONS

- Community desires piped water and sewer system
- Phased project: (1) Water System, (2) Sewer System

FUNDING ESTIMATE

- Water Distribution System	\$ 1,870,000
Engineering	143,000
Contingency	187,000
Total	<u>\$ 2,220,000</u>
- Sewage Disposal System	\$ 2,350,000
Engineering	215,000
Contingency	235,000
Total	<u>\$ 2,800,000</u>

COMMENTS

- Estimates on water system based on CH2M Hill Engineering Report done for city in 1984

WORK TO BE DONE

- Engineering Plan (completed)
- Design
- Construction

*Direct municipal grant for water and sewer.

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
GOLOVIN	17	NORTON SOUND	125	\$ 2,000,000
		Other Funding *	Amount	Balance
		(1984) SB 409	\$ 90,000	-0-
		(1984) HB 691	625,000	\$ 500,000

EXISTING SITUATION

- PHS community laundromat.in operation

ASSUMPTIONS

- More water storage needed to develop piped water supply
- Tough soil conditions exist
- Coordination with ongoing city project crucial

FUNDING ESTIMATE

Water storage	\$ 300,000
Water distribution system	926,000
50 septic tanks/drain fields	600,000
Engineering & contingency	<u>174,000</u>
Total	\$2,000,000

COMMENTS

- City has hired an engineer to hook-up community buildings to water service

*Direct municipal grant for water and sewer and waste heat.

WORK TO BE DONE

- X Engineering Plan
- X Design
- X Construction

VSW FY86 PRIORITY LIST
FACT SHEET

Village	VSW Priority	Region	Population	VSW Funding Request
KOYUK	18	NORTON SOUND	199	\$ 3,500,000
		Other Funding *	Amount	Balance
		(1984) HB 691	\$ 750,000	\$ 500,000

EXISTING SITUATION

- PHS laundromat in operation
- No toilets in laundromat
- Bunkers provided for waste disposal

ASSUMPTIONS

- City desires piped water and sewer system. This requires a water exploration project to provide adequate supply.
- Tough soil conditions for waste disposal

FUNDING ESTIMATE

New well and water exploration	\$ 150,000
Water transmission line	200,000
Upgrade laundromat	300,000
Water distribution line	993,000
Sewage disposal	1,400,000
Engineering & contingency	<u>457,000</u>
Total	\$3,500,000

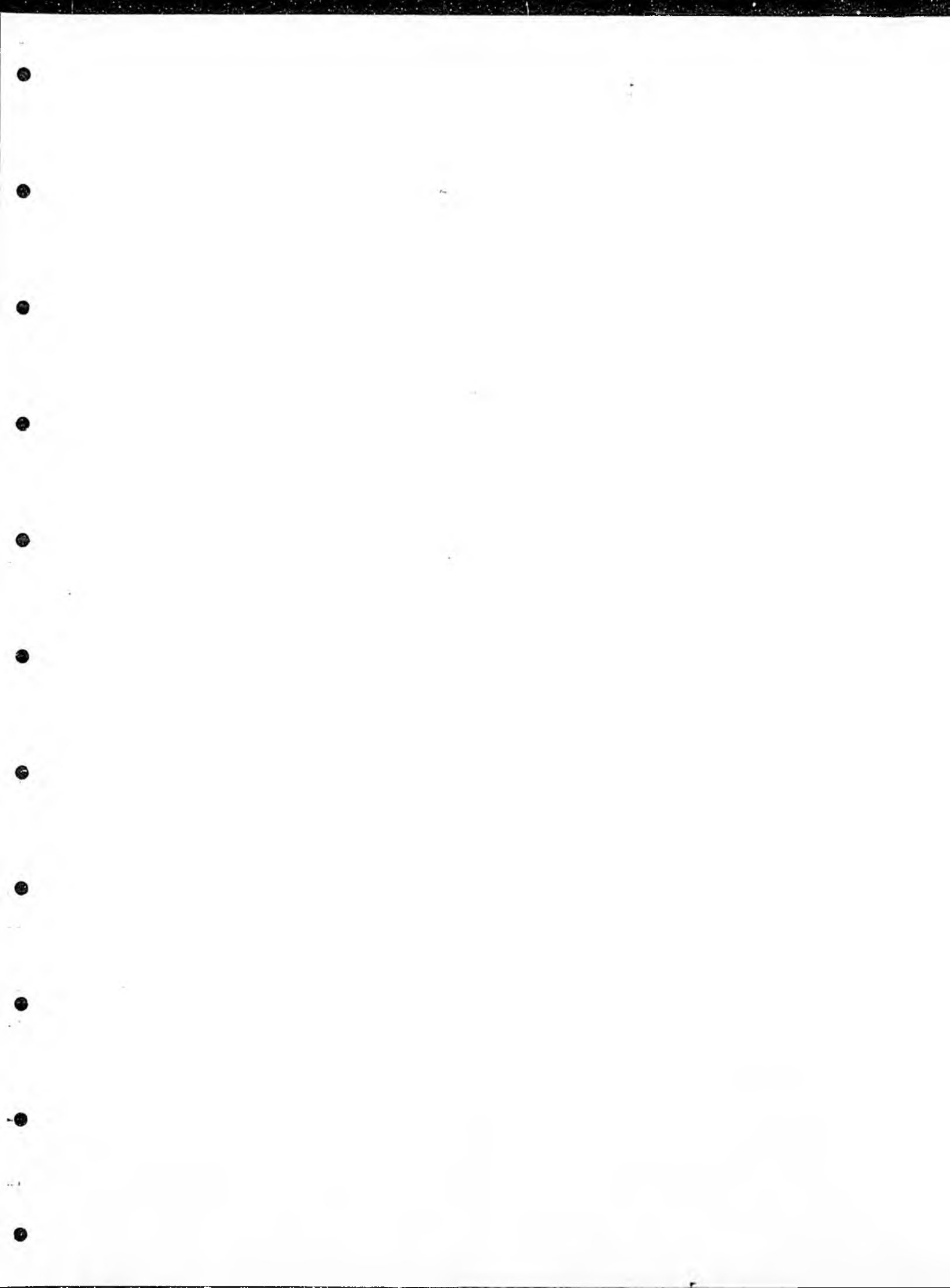
COMMENTS

- Not sure how city will use municipal grant funds

WORK TO BE DONE

- X Engineering Plan
- X Design
- X Construction

*Direct municipal grant for water and sewer.



Various Statewide Projects

During 1984, the Alaska Legislature provided funds for the VSW Program to initiate engineering feasibility studies in most of the following locations:

- Atmautluak
- Chefornak
- Chuathbaluk
- Glennallen
- Kasaan
- Napaskiak
- Newtok
- Platinum
- Port Protection
- Stony River
- Talkeetna

These studies are well underway or complete and are the basis for cost estimates used on each fact sheet. Therefore, a line item allocation for each project through VSW is requested. Copies of the engineering reports are available from the office of: Village Safe Water, Pouch 0, Juneau, Alaska 99811.

VSW FY86 VARIOUS STATEWIDE PROJECTS
FACT SHEET

Village	Region	Population	VSW Funding Request	Other Funding
ATMAUTLUAK	CALISTA	140	\$ 1,200,000	None Known

EXISTING SITUATION

- PHS watering point and iron treatment

ASSUMPTIONS

- System must be expanded to serve growing population
- Village watering point can be expanded into laundromat facility
- Lagoon could treat laundromat and school waste

FUNDING ESTIMATE

Expand watering point into laundromat	\$ 260,000
1200' sewer line @ \$40/ft	480,000
Lagoon	300,000
Engineering & contingency	<u>156,000</u>
Total	\$ 1,200,000

COMMENTS

- A line item allocation through VSW for this project is recommended

WORK TO BE DONE

- Engineering Plan (underway)
- Design
- Construction

VSW FY86 VARIOUS STATEWIDE PROJECTS
FACT SHEET

Village	Region	Population	VSW Funding Request	Other Funding
CHEFORNAK	CALISTA	236	\$ 300,000	None Known

EXISTING SITUATION

- PHS well, insulated water points on Loop in operation

ASSUMPTIONS

- Existing well will turn brackish due to increased water usage
- Alternative water source needs to be located and developed
- Tundra lake will provide adequate water source

FUNDING ESTIMATE

Pump installation	\$ 30,000
Water treatment	90,000
6000' transmission @ \$30/ft	<u>180,000</u>
Total	\$ 300,000

COMMENTS

- See VSW Study for details
- A line item allocation for this project through VSW is recommended

WORK TO BE DONE

- Engineering Plan (underway)
- Design
- Construction

VSW FY86 VARIOUS STATEWIDE PROJECTS
FACT SHEET

Village	Region	Population	VSW Funding Request	Other Funding
CHUATHBALUK	CALISTA	117	\$ 40,000	

EXISTING SITUATION

- Residents haul water from school to homes

ASSUMPTIONS

- Community desires an engineering study to develop Capital and Operation & Maintenance costs for water and sewer system

FUNDING ESTIMATE

Engineering study \$ 40,000

COMMENTS

- A line item allocation through VSW for this project is recommended

WORK TO BE DONE

X Engineering Plan

VSW FY86 VARIOUS STATEWIDE PROJECTS
FACT SHEET

Village	Region	Population	VSW Funding Request	Other Funding
GLENNALLEN	INTERIOR ROAD	365	\$ 2,200,000	None Known

EXISTING SITUATION

- High groundwater and poor soils contribute to sewage disposal problems for businesses and individual homesites

ASSUMPTIONS

- Community sewer system desired
- Water OK

FUNDING ESTIMATE

12,000' sewer main @ \$60/ft	\$ 720,000
10,000' sewer service line @ \$50/ft	450,000
1 highway crossing	40,000
1 lift station	60,000
Sewage lagoon	600,000
Engineering & contingency	<u>330,000</u>
Total	\$2,200,000

COMMENTS

- Consult VSW Study for details
- A line item allocation for this project through VSW is recommended

WORK TO BE DONE

- Engineering Plan (underway)
- Design
- Construction

VSW FY86 VARIOUS STATEWIDE PROJECTS
FACT SHEET

Village	Region	Population	VSW Funding Request	Other Funding
KASAAN	SEAALASKA	75	\$ 1,200,000	None Known

EXISTING SITUATION

- Existing PHS piped water and sewer system needs expansion into new housing areas

ASSUMPTIONS

- Existing system OK

FUNDING ESTIMATE

22,000' ductile iron water main @ \$25/ft	\$ 550,000
80,000-gallon storage tank	250,000
Booster pump station	50,000
120 house service lines @ \$1000/line	120,000
Engineering & contingency	230,000
Total	\$1,200,000

COMMENTS

- A line item allocation through VSW for this project is recommended

WORK TO BE DONE

- Engineering Plan (underway)
- Design
- Construction

VSW FY86 VARIOUS STATEWIDE PROJECTS
FACT SHEET

Village	Region	Population	VSW Funding Request	Other Funding
NAPASKIAK	CALISTA	293	\$ 1,325,000	None Known

EXISTING SITUATION

- PHS well and watering point in operation
- Laundromat desired

ASSUMPTIONS

- School will hook-up to proposed community laundromat and purchase water
- Waste heat can be obtained from power plant at fair cost

FUNDING ESTIMATE

New well	\$ 45,000
Laundromat/treatment building	600,000
Building equipment	250,000
Fuel storage	60,000
Waste water line	60,000
Lagoon	137,000
Engineering & contingency	<u>173,000</u>
Total	\$1,325,000

COMMENTS

- Negotiations underway with school and power company
- A single appropriation for this project through VSW is recommended

WORK TO BE DONE

- Engineering Plan (completed)
- Design
- Construction

VSW FY86 VARIOUS STATEWIDE PROJECTS
FACT SHEET

Village	Region	Population	VSW Funding Request	Other Funding
NEWTOK	CALISTA	150	\$ 250,000	None Known

EXISTING SITUATION

- Solid waste disposal site needed

ASSUMPTIONS

FUNDING ESTIMATE

Boardwalk	\$ 80,000
Dump fence	20,000
Excavation	40,000
4 haul vehicles	16,000
5 trailers	44,000
25 dumpsters	<u>50,000</u>
Total	\$ 250,000

COMMENTS

- A line item allocation for this project through VSW is recommended

WORK TO BE DONE

___ Engineering Plan (underway)
 Design
 Construction

VSW FY86 VARIOUS STATEWIDE PROJECTS
FACT SHEET

Village	Region	Population	VSW Funding Request	Other Funding
PLATINUM	CALISTA	65	\$ 600,000	None Known

EXISTING SITUATION

- Existing system is old and needs replaced and expanded

ASSUMPTIONS

FUNDING ESTIMATE

New well	\$ 20,000
10,000' transmission line	250,000
21 service connections	42,000
21 septic tanks and drain fields	210,000
Engineering & contingency	<u>78,000</u>
Total	\$ 600,000

COMMENTS

- A line item allocation for this project through VSW is recommended

WORK TO BE DONE

Engineering Plan
(completed)
 Design
 Construction

VSW FY86 VARIOUS STATEWIDE PROJECTS
FACT SHEET

Village	Region	Population	VSW Funding Request	Other Funding
PORT PROTECTION	SEALASKA	60	\$ 875,625	None Known

EXISTING SITUATION

- Springs used as water source. More reliable source needs to be developed.

ASSUMPTIONS

- No central power in village
- More reliable water source is needed
- Spring can be developed into year-round water source
- Waste water disposal not required
- City will organize to operate proposed facility

FUNDING ESTIMATE

Build access road and tank site	\$ 52,000
Build foundation for tank	15,000
167,000-gallon tank & construction	250,000
Collection structure & piping	10,000
Distribution piping 7300' @ \$40/ft	292,000
11 fire hydrants @ \$2500/hydrant	27,500
36 house service @ \$1500/house	54,000
Engineering, administration & contingency	<u>175,125</u>
Total	\$ 875,625

COMMENTS

- See VSW Engineering Study for details
- A line item allocation for this project through VSW is recommended

WORK TO BE DONE

- Engineering Plan (completed)
- X Design
- X Construction

VSW FY86 VARIOUS STATEWIDE PROJECTS
FACT SHEET

Village	Region	Population	VSW Funding Request	Other Funding
STONY RIVER	CALISTA	74	\$ 100,000	None Known

EXISTING SITUATION

- Thirteen individual wells in operation
- Waste disposal needed
- Wells need sanitary seals

ASSUMPTIONS

- Seepage pits will be adequate for grey water

FUNDING ESTIMATE

- Water Distribution System	
Seal 15 wells @ \$300/well	\$ 4,500
Slope drainage around 15 homes @ \$1000	15,000
- Sewer Disposal System	
Build 15 seepage pits @ \$2000/pit	30,000
Construct 15 privies @ \$2000/each	30,000
Contingency	<u>20,500</u>
Total	\$ 100,000

COMMENTS

- A line item allocation for this project through VSW is recommended

WORK TO BE DONE

- Engineering Plan
- Design
- Construction

VSW FY86 VARIOUS STATEWIDE PROJECTS
FACT SHEET

Village	Region	Population	VSW Funding Request	Other Funding
TALKEETNA	SOUTH CENTRAL	360	\$ 3,200,000	None Known

EXISTING SITUATION

- Individual wells and septic tanks on small lots have created potential groundwater contamination problems

ASSUMPTIONS

- Assume community will form LID and follow Study recommendations

FUNDING ESTIMATE*

- Piped water (Areas 1, 2 & 3) Well, pump, treatment building, lines, hydrants & storage	\$ 1,626,000
Design, management & contingency	406,550
- Sewer (Area 1 only) Septic tanks/leach field	903,340
Design, management & contingency	<u>255,835</u>
Total	\$ 3,200,000

COMMENTS

- Wells need to be drilled first, presumably with funds left over from Study (\approx 35,000)
- A line item allocation for this project through VSW is recommended

WORK TO BE DONE

- Engineering Plan (completed)
- Design
- Construction

*See pages 18 & 26 of VSW Talkeetna Engineering Study for details.

PROJECT TITLE: Village Safe Water Priority List	AGENCY PRIORITY: <u>03</u> of <u>10</u>
LOCATION: Norton Sound, NW Arctic, Yukon Kuskokwim, Interior, Aleutian Islands, and Bristol Bay Regions	
ELECTION DISTRICT: 22, 23, 24, 25, 26	FISCAL YEAR: <u>86</u> DURATION: <u>24</u>
APPROPRIATION TO: Department of Environmental Conservation	PROGRAM: Village Safe Water

	FUNDING:	CAPITAL REQUEST	REVISED REQUEST	OPERATING COSTS
1002	FEDERAL RECEIPTS	_____	_____	_____
1003	GENERAL FUND MATCH	_____	_____	_____
1004	GENERAL FUND	17,300,000	_____	_____
1005	INTER-AGENCY RECEIPTS	_____	_____	_____
1028	PROGRAM RECEIPTS	_____	_____	_____
		_____	_____	_____
	TOTALS:	17,300,000	_____	NA
			POSITIONS (PFT):	_____

PROJECT DESCRIPTION AND JUSTIFICATION:

LINE (1) This is a lump sum appropriation request with estimated allocations for each project. Actual costs may vary. Projects in order of priority are 1) Shungnak \$720,000; 2) Healy Lake \$300,000; 3) Lime Village \$365,000;

LINE (2) 4) Red Devil \$430,000; 5) Circle \$150,000; 6) Igashik \$45,000; 7) Lewis Point \$50,000; 8) Diomedede \$500,000;

LINE (3) 9) Noatak \$450,000; 10) Kiana \$300,000; 11) St. Paul \$800,000; 12) Venetie \$500,000; 13) Kalskag \$500,000;

LINE (4) 14) St. George \$850,000; 15) Telida \$350,000; 16) Kivalina \$5,200,000; 17) Golovin \$2,000,000; 18) Koyuk \$3,500,000.

CP1 CAPITAL PROJECTS DESCRIPTION
DATA ENTRY WORKSHEET

WORKSHEET

PAGE <u>1</u>	OF <u>3</u>
REVISED DATE 10/16/84	

FY 86

Regional Health Corporations submitted a list of communities in their areas most in need of sanitation improvements. Using health criteria, a technical committee developed the priority list. These communities are to receive funding for Village Safe Water (VSW) projects in FY86 as authorized by AS 46.07. This statute allows the VSW program to make grants to communities to plan, design, and build facilities. VSW staff will assist communities through all phases of project development by performance in the role of "city engineer." Communities are listed below in order of priority with a description of each project. What follows are estimates of how these funds should be allocated between projects. Actual costs and scope of each project may change due to local conditions.

<u>Community</u>	<u>Project Scope</u>	<u>Estimated Project Cost</u>
1. Shungnak	Rehabilitate system	\$ 720,000
2. Healy Lake	Wells and septic tanks	300,000
3. Lime Village	Watering point and bunkers	365,000
4. Red Devil	Wells and septic tanks	430,000
5. Circle	Community watering point	150,000
6. Igashik	Community well	45,000
7. Lewis Point	Community well	50,000
8. Diomede	Water storage and treatment	500,000
9. Noatak	Rehabilitate South Loop	450,000
10. Kiana	Spruce sewerage system upgrade	300,000
11. St. Paul	Interceptor sewer	800,000
12. Venetie	New watering point	500,000
13. Kalskag	New watering point	500,000

AGENCY Environmental Conservation

PROGRAM Village Safe Water

BRU _____

COMPONENT _____

CPI

ADDITIONAL
EXPLANATION
FORM

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14.	St. George	Water source development	850,000
15.	Telida	Watering point, treatment, & storage	350,000
16.	Kivalina	Water system	2,200,000
		Sewer system	3,000,000
17.	Golovin	Piped water and sewer	2,000,000
18.	Koyuk	Water exploration, washeteria upgrade, sewage lagoon	3,500,000
19.	Various Statewide projects and contingencies		83,900
20.	Administration (CIP costs)		281,000

AGENCY Environmental Conservation

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CPI
ADDITIONAL EXPLANATION FORM

Engineering studies were commissioned by the Alaska Legislature in 1984 for the projects listed below. These cost figures are based upon these feasibility reports (copies of these reports available upon request).

Chuathbaluk	Water treatment, sewer rehabilitation	\$ 40,000
Atmauthluk	Washeteria and lagoon	1,200,000
Port Protection	Develop water source	875,000
Kasaan	Water system expansion	1,200,000
Glennallen	Sewer system	2,200,000
Stony River	Septic tanks	100,000
Platinum	Water and sewer	600,000
Chefornak	Water Storage	300,000
Talkeetna	Water and sewer	3,200,000
Napaskiak	Washeteria and waste disposal	1,325,000
Newtok	Liquid and solid waste disposal	250,000
Various Projects and Contingencies		160,100

CPI

ADDITIONAL
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AGENCY Environmental Conservation

PROGRAM Village Safe Water

BRU _____

COMPONENT _____

FY 86

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ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Bill Sheffield
Governor

Richard Neve'
Commissioner of
Environmental Conservation



MUNICIPAL GRANTS

FY 86

FACILITY CONSTRUCTION & OPERATION

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MUNICIPAL GRANTS PROGRAM
FY86 CAPITAL BUDGET REQUEST

Purpose

The purpose of this report is to provide State policy makers with backup information on the Municipal Grants Program, FY86 Capital Budget Request.

Introduction

The Municipal Grants Program provides grants up to fifty percent of the non-federally financed costs for water, sewerage and solid waste improvements. These grants may be used to pay for engineering, construction, legal, administrative and equipment costs. Grants through this program are available only to incorporated municipalities. The State does not provide any operation and maintenance support behind technical assistance. This program is authorized by AS 46.03.030.

The Alaska Department of Environmental Conservation (ADEC) is concerned with approval of construction plans and specifications, contract documents for engineering design and for construction. Progress payments and interim construction inspections are made during the course of the project. Grantees' final project costs are audited by the Department. The emphasis of the program is to

minimize grant requirements with the grantees responsible for the majority of project administration.

In FY86 the Department is requesting three separate capital appropriations to be administered through the Municipal Grants Program. These are:

- (1) Water, Sewer and Solid Waste Projects \$ 50 million

- (2) Wastewater Disposal Facilities
 - Construction (State Match) \$ 3.4 million

- (3) Anchorage 50% Construction Grants \$ 9.716 million

The Governor's proposed capital budget contained \$10,106,500 for the Municipal Grants Program.

Water, Sewer and Solid Waste Projects

In July 1984, the Department solicited community input as to what projects they would like to have funded through the Municipal Grants Program. We also asked for their comments on a criteria system which would rank community needs in a statewide perspective. The criteria system is presented in Appendix A. We received approximately \$115.5 million in needs from forty-one communities for 148 projects. More details are available from the Department.

The projects were then scored and ranked to give a statewide perspective of need. This list is presented in Table I (page 4). . . . The Department has requested \$50 million to fund the construction of these projects. If less money is appropriated, the list will be worked from the top down until all funds are spent.

TABLE I
FY 86 STATE SANITATION PROJECT PRIORITY LIST 12/87/84

TOTAL SCORE	MUNICIPALITY	PROJECT NAME	FUNDING-ADEC	CUMMULATIVE TOTAL
670	KLAWOCK	EAST KLAUOCK WATER AND SEWER	320,000	320,000
590	KENAI	PRINCESS, CINDERELLA, MCCOLLUM, ALIAK, M AGIC WATER AND SEWER IMPROVEMENTS	620,000	940,000
580	NORTH SLOPE BOROUGH	ATOASUK SEWAGE TREATMENT FACILITY	1,200,000	1,920,000
575	KOTZEBUE	SEWAGE LAGOON IMPROVEMENTS	150,000	2,050,000
525	JUNEAU	MENDENHALL VALLEY STP EXPANSION, SEGMENT II & III, LIQUID TREAT.	1,292,500	3,342,500
525	JUNEAU	MENDENHALL VALLEY SEWER I/I CORRECTION	511,750	3,854,250
515	BRISTOL BAY BOROUGH	NAKNEK SOLID WASTE PROJECT	750,000	4,604,250
515	NORTH POLE	HIGHWAY PARK WATER AND SEWER	1,389,000	5,993,250
510	GALENA	WATER DISTRIBUTION AND WASTEWATER COLLEC TION	2,000,000	7,993,250
500	DRAIG	WATER SOURCE	3,800,000	11,793,250
500	JUNEAU	MENDENHALL PENINSULA DISTRIBUTION	1,087,500	12,880,750
500	JUNEAU	MENDENHALL VALLEY STP EXPANSION, SEGMENT IV & V, SOLIDS TREATMENT	621,600	13,502,350
485	KENAI	EAST KENAI INTERCEPTOR-THOMPSON PARK SEW ER IMPROVEMENTS	1,083,000	14,585,350
485	NORTH SLOPE BOROUGH	KAKTOVIK SEWAGE DISPOSAL	742,500	15,327,850
480	NORTH SLOPE BOROUGH	ATOASUK WATER TREATMENT FACILITY	1,000,000	16,327,850
475	VALDEZ	CAMPGROUNDS SANITARY DUMP STATION	10,000	16,337,850
470	BILLINGHAM	SEWERAGE TREATMENT FACILITY	700,000	17,037,850
470	FAIRBANKS	N. E. INTERCEPTOR -PHASE II	150,000	17,187,850
470	HAINES	SEWER OUTFALL EXTENSION	55,000	17,242,850
470	KETCHIKAN GATEWAY BORO	SOUTH TONGASS SERVICE DISTRICT SEWER	350,000	18,292,850
465	NORTH POLE	NORTHWEST SEWER INTERCEPTOR AND WATER TR ANSMISSION LINES	1,953,500	20,246,350
465	NORTH SLOPE BOROUGH	WAINWRIGHT WATER SUPPLY LINE	1,220,000	21,466,350
465	PETERSBURG	HAMMER AND MILL SLOUGH SEWER EXTENSION	220,000	21,686,350
460	NORTH SLOPE BOROUGH	WAINWRIGHT SEWAGE DISPOSAL	1,730,250	23,416,600
455	KENAI	SPRUCE, 2ND, 3RD AND 5TH WATER AND SEWER IMPROVEMENTS	300,000	23,716,600
455	PETERSBURG	SCOW BAY AREA SEWER SYSTEM	670,825	24,387,425
445	ST. MARY'S	WATER/SEWER UPGRADE PH. 1, ADREAFSY SEWE R PROJECT/ WATER LOOP REPAIR	575,071	24,962,496
440	FAIRBANKS	WATER TREATMENT PLANT EXPANSION, PHASE B	3,997,566	28,960,062
435	NOOME	ICY VIEW UTILITY EXTENSION	3,092,063	32,052,125
425	JUNEAU	EAST MENDENHALL VALLEY DISTRIBUTION	1,563,500	33,615,625

FY 86 STATE SANITATION PROJECT PRIORITY LIST 12/07/84

TOTAL SCORE	MUNICIPALITY	PROJECT NAME	FUNDING-ADEC	CUMMULATIVE TOTAL
420	ANGOON	GARBAGE DUMP IMPROVEMENT	50,000	33,261,625
420	NOME	LANDFILL IMPROVEMENTS	123,500	33,385,125
420	NORTH SLOPE BOROUGH	BARROW LANDFILL	1,000,000	34,385,125
420	PETERSBURG	WATER PLANT CLARIFICATION SYSTEM	350,000	34,735,125
420	SOLDOTNA	SLUDGE DEWATERER	50,000	34,785,125
420	WASILLA	WATER SYSTEM EXPANSION	1,220,000	35,995,125
410	KENAI	THOMPSON PARK WATER IMPROVEMENTS	350,000	36,345,125
420	FAIRBANKS	N.E. INTERCEPTOR -PHASE I	175,000	36,520,125
390	CORDOVA	NORTH HILL INDUSTRIAL PARK	720,000	37,220,125
390	CORDOVA	SOUTH HILL SEWER AND WATER	361,000	37,581,125
390	SITKA	CASCADE CREEK SEWER	140,500	37,721,625
385	KETCHIKAN GATEWAY BORO	MUD BITE SUBDIVISION SEWER	1,079,500	38,801,205
385	KLAWOCK	AIRPORT WATERLINE	300,000	39,101,205
375	CORDOVA	USS 900 - INTERCEPTOR-CRM	550,000	39,651,205
370	CORDOVA	POWER CREEK INTERCEPTOR	410,000	40,061,205
370	FAIRBANKS	WASTEWATER TREATMENT PLANT UPGRADE/EXPANSION	3,300,000	43,361,205
370	KENAI PENINSULA BOROUGH	CENTRAL PENINSULA INCINERATION FACILITY	5,500,000	48,861,205
370	NOME	WASTEWATER PLANT IMPROVEMENTS	1,250,000	50,111,205 <i>to here</i>
365	KENAI	NORTH SPUR WATER AND SEWER IMPROVEMENTS, WILDWOOD TO CITY LIMITS	400,000	50,511,205
350	KENAI	EAST KENAI SEWER INTERCEPTOR-VALHALLA HEIGHTS SEWER IMPROVEMENTS	1,686,000	52,197,205
350	KETCHIKAN PUBLIC UTILITIES	CARLANNA LAKE TREATMENT PLANT	415,850	52,613,055
345	JUNEAU	WEST MENDENHALL VALLEY INTERCEPTOR PHASE I	1,962,332	54,575,387
345	SOLDOTNA	K-BEACH ROAD WATER MAIN INTERTIE	225,100	54,800,487
340	HAINES	YOUNG ROAD SANITARY SEWER COLLECTOR	165,000	54,965,487
340	NORTH POLE	SEWAGE TREATMENT EXPANSION	1,425,000	56,390,487
340	SOLDOTNA	KNIGHT DRIVE WATER AND SEWER EXTENSIONS	846,170	57,236,657
340	SOLDOTNA	EAST REDOUBT-STERLING HWY TO SE CORNER, SECTION 28 WATER MAIN	326,000	57,562,657
340	VALDEZ	ALPINE WOODS SEWERAGE	1,300,000	59,062,657
335	KAKE	WATER AND SEWER IMPROVEMENTS - PUBLIC DUCK	26,050	59,090,707
330	CORDOVA	SKI HILL SEWER MAIN EXTENSION	137,500	59,228,207
330	JUNEAU	NORTH DOUGLAS RESERVOIR	999,000	60,227,207
330	JUNEAU	MONTANA CREEK RESERVOIR	622,500	60,849,707
330	JUNEAU	EAST VALLEY RESERVOIR	1,012,500	61,862,207
325	DILLINGHAM	WATER DISTRIBUTION SYSTEM EXPANSION	640,000	62,502,207
325	JUNEAU	NORTH DOUGLAS DISTRIBUTION	2,095,000	64,597,207
325	JUNEAU	WEST VALLEY RESIDENTIAL DISTRIBUTION	1,440,000	66,037,207
325	KETCHIKAN GATEWAY BORO	MOUNTAIN POINT WATER DISTRICT	100,000	66,137,207
325	SOLDOTNA	1.2 MG RESERVOIR AND FOOTHILLS TRANSMISSION	825,000	66,962,207

FY 86 STATE SANITATION PROJECT PRIORITY LIST 12/07/84

TOTAL SCORE	MUNICIPALITY	PROJECT NAME	FUNDING-ADEC	CUMMULATIVE TOTAL
		ION MAIN		
320	ANGOOK	CITY WATER STORAGE TANK	200,000	57,162,207
320	KETCHIKAN PUBLIC UTILITIES	WATER TANK RELOCATION, PUMP STATION AND TRANSMISSION LINE	247,000	57,409,207
320	NORTH SLOPE BOROUGH	BARROW SEWAGE DISPOSAL/WATER DISTRIBUTION	5,200,000	72,409,207
315	ANGOOK	ELEVATED WATER STORAGE TANK	75,000	72,484,207
315	DRAIG	WASTEWATER TREATMENT FACILITIES EXPANSION	1,000,000	73,484,207
315	HOMER	OCEAN DRIVE SEWER LINE	305,000	73,789,207
315	HOMER	WEST HOMER WATER & SEWER LINES	637,500	74,426,707
310	CORDOVA	INDUSTRIAL PARK PHASE IIIC SEWER	266,000	74,692,707
310	KENAI	VALHALLA HEIGHTS WATER IMPROVEMENTS	300,000	74,992,707
300	JUNEAU	DOUGLAS ZONE 2 AND 3 DISTRIBUTION	850,000	75,842,707
300	JUNEAU	WEST VALLEY INDUSTRIAL DISTRIBUTION	372,000	76,214,707
300	JUNEAU	CHANNEL MARINA DISTRIBUTION	37,000	76,251,707
300	JUNEAU	INDIAN POINT-AUKE BAY DISTRIBUTION	1,193,500	77,445,207
300	KENAI PENINSULA BOROUGH	NINILCHIK LANDFILL	150,000	77,595,207
295	FAIRBANKS	DERBY TRACTS LATERAL SEWERS	175,000	77,770,207
295	KODIAK	SANITARY LANDFILL	640,000	78,410,207
295	SOLDOTNA	PARK LANE WATER LOOP	183,890	78,594,097
295	SOLDOTNA	RIVERSIDE SEWER MAIN	96,600	78,690,777
295	SOLDOTNA	STERLING HIGHWAY-SALAMATOF SEWER EXTENSION	50,820	78,789,597
290	ANGOOK	WATER AND SEWER LINE EXTENSION	84,450	78,874,047
285	KODIAK	NEAR ISLAND WATER AND SEWER	2,000,000	80,874,047
285	NENANA	WATER AND SEWER EXPANSION PHASE II	2,000,000	82,874,047
285	NOOME	AIRPORT UTILITY EXPANSION	971,715	83,845,762
285	NORTH POLE	HIGH SCHOOL BYPASS FORCE MAIN	237,000	84,082,762
270	FAIRBANKS	WILBUR STREET WATER TIE	1,000,000	85,082,762
270	JUNEAU	J-D TREATMENT PLANT SLUDGE DEWATERING	155,700	85,238,462
270	KETCHIKAN PUBLIC UTILITIES	NORDSTROM-CONFIDENCE WATER	696,250	85,934,712
270	KODIAK	ELEVENTH AVENUE WATERLINE	300,000	86,234,712
270	SAXMAN	SEWAGE TREATMENT PLANT UPGRADE	308,750	86,543,462
270	VALDEZ	BLUEBERRY HILL WATER AND SEWERAGE SYSTEMS	450,000	86,993,462
255	KETCHIKAN PUBLIC UTILITIES	LOWER HIGHLAND WATER	34,000	87,027,462
255	SOLDOTNA	WATER LOOP - KENAI SPUR MAIN EXTENSION	470,000	87,497,462
255	KAKE	SEWER MAIN FOR SOUTHERN KAKE	1,013,956	88,511,418
250	KETCHIKAN PUBLIC UTILITIES	CARLANNA LAKE ROAD-TIMBERLINE TO FAIRVIEW WATER	20,500	88,531,918
245	HOMER	HOMER SPIT WATERLINE, PH IA	430,000	88,961,918
245	KODIAK	WASTEWATER TREATMENT PLANT MODIFICATIONS	250,000	89,211,918

FY 86 STATE SANITATION PROJECT PRIORITY LIST 12/07/84

TOTAL SCORE	MUNICIPALITY	PROJECT NAME	FUNDING-ADEC	CUMMULATIVE TOTAL
240	HOMER	DANVIEW WATER LINE	72,000	89,283,918
240	KENAI	KENAI SPUR WATER & SEWER BORE TO SOUTHWEST PORTION OF SECTION 36	50,000	89,333,918
225	KENAI PENINSULA BOROUGH	NEW SPECIAL SOLID WASTE SITE	250,000	89,583,918
220	CHEVAK	COMMUNITY INCINERATOR	20,000	89,603,918
220	SAND POINT	BOAT HARBOR/DOCK WATER AND SEWER	216,305	89,820,223
220	SOLDOTNA	AIRPORT INTERCEPTOR SEWER	948,000	90,768,223
220	VALDEZ	SANITARY LANDFILL EQUIPMENT SHED	30,000	90,798,223
215	DILLINGHAM	WATER WELLS	395,000	91,193,223
215	NOME	WATER SUPPLY IMPROVEMENTS	2,175,000	93,368,223
210	HAINES	GREENING DRIVE WATER AND SEWER	133,000	93,501,223
200	KETCHIKAN PUBLIC UTILITIES	MILLER STREET WATER EXTENSION	32,550	93,533,773
200	KETCHIKAN PUBLIC UTILITIES	THIRD AVENUE EAST WATER	37,000	93,570,773
200	VALDEZ	OLD TOWN LANDFILL CLOSURE	52,500	93,623,273
195	KING COVE	BOAT HARBOR/DOCK WATER AND SEWER	400,000	94,023,273
195	SOLDOTNA	SEWER SLUDGE INCINERATOR	1,015,000	95,038,273
195	VALDEZ	LOOP ROAD WELL HOUSE TELEMTRY	37,500	95,075,773
190	HAINES	SMALL TRACT/FAA SANITARY SEWER COLLECTION SYSTEM	195,325	95,271,098
190	KENAI	KENAI SPUR SEWER BORE AT ILIAMNA ROAD	25,000	95,296,098
190	SOLDOTNA	1.0 MG RESERVOIR AND SALAMATOF TRANSMISSION MAIN	381,050	96,277,148
170	KETCHIKAN PUBLIC UTILITIES	FAWN LAKE 36-INCH TRANSMISSION	544,400	96,921,548
160	FAIRBANKS	VAN HORN AREA WATER DISTRIBUTION	425,000	97,346,548
145	SKAGWAY	WATER STORAGE TANK	125,000	97,471,548
90	NOME	ALTERNATE WATER SUPPLY	776,250	98,247,798

APPENDIX A

CRITERIA SYSTEM

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CAPITAL PROJECTS
SFY 86

1. Problem Addressed	<u>Points</u>
A. Public Health	
1. A documented <u>existing</u> disease event exists (documented by a recognized public health organization and confirmed by ADEC sanitarians).	500
2. The <u>potential</u> for a disease event exists. (All the elements are there, it just has not yet happened.)	200
3. The potential for a disease does not exist. Not all the elements exist but <u>development</u> suggests the event will occur in the future unless this project is constructed.	100
B. Public Safety	
1. This project is needed to provide water for fire protection. The existing population currently has no fire protection through a piped water/hydrant system.	100
2. This project is needed to provide water for fire protection. New development is being constructed which needs a piped water/hydrant system.	50
C. Environmental	
1. A documented existing pollution event exists.	100
2. The potential for a pollution event exists.	75
3. Development suggests a pollution event will occur in the future unless this project is constructed.	50
4. An esthetic "pollution" problem needs correcting.	25
2. This project is being done in conjunction with an EPA funded project.	100
3. Project Development Status	
A. Project has engineering plans and specification already prepared.	75
B. A feasibility study or facility plan has been prepared for the project.	45
C. A comprehensive study has been prepared which addresses the need for this project among other community needs.	20
D. No documentation has been prepared for this project.	0

	<u>Points</u>
4. Matching Funds Available	
A. Matching funds are currently available for this project.	100
B. Matching funds have been approved by appropriate authorities.	60
C. There is reasonable expectation that matching funds will be available and the source has been specified.	25
5. Grant Funds Cost/Population Benefitted. This criteria will use the actual population expected to be benefitted.	
A. The cost/population ratio is low: 0 to 400.	75
B. The cost/population is moderate: 401 to 4,000.	45
C. The cost/population ratio is high: >4,000.	15
6. Operational and Maintenance costs have been considered and either are not existent or a source of funds will exist to pay for them.	50
7. Phased or Segmented Project	
A. Part of the project is already started. This phase is needed to make the project functional.	50
B. The project is composed of more than one segment. This segment is needed to meet the water quality or public health intent of the plan but is not necessary to make the project functional.	25
8. Effect on Other Projects	
A. Project needs to be accomplished in conjunction with another project to reduce overall cost to State (paving, etc.).	15

APPENDIX B

MUNICIPALITY	PROJECT NAME	FUNDING - ADEC	NO.
		Total:	
ANCHORAGE	ANTICIPATED LATERAL IMPROVEMENT DISTRICTS-SEWER	3,160,000	076
	ANTICIPATED WATER IMPROVEMENT DISTRICTS	1,020,000	079
	DISTRIBUTION RESERVOIRS AND SMALL RESERVOIRS	1,840,000	142
	MISCELLANEOUS NEW TRANSMISSION MAINS	1,200,000	144
	PUBLIC WORKS ROAD RELATED PROJECTS-SEWER	780,000	077
	PUBLIC WORKS ROAD RELATED PROJECTS-WATER	600,000	080
	STATE DOTPF HIGHWAY RELATED PROJECTS-SEWER	720,000	078
	STATE DOTPF HIGHWAY RELATED PROJECTS-WATER	320,000	081
TRANSMISSION SYSTEM INTERTIES	60,000	143	
		Total:	9,716,000
ANGSON	CITY WATER STORAGE TANK	200,000	037
	ELEVATED WATER STORAGE TANK	75,000	036
	GARBAGE DUMP IMPROVEMENT	50,000	034
	WATER AND SEWER LINE EXTENSION	84,450	035
		Total:	409,450
ANIAK	AREA II COMMUNITY SEWERAGE	589,650	023
		Total:	589,650
BRISTOL BAY BOROUGH	NAKNEK SOLID WASTE PROJECT	750,000	002
		Total:	750,000
CHEVAK	COMMUNITY INCINERATOR	20,000	022
		Total:	20,000
CORDOVA	INDUSTRIAL PARK PHASE IIIC SEWER	266,000	054
	NORTH FILL INDUSTRIAL PARK	700,000	056
	POWER CREEK INTERCEPTOR	410,000	058
	SKI HILL SEWER MAIN EXTENSION	137,500	055
	SOUTH FILL SEWER AND WATER	361,000	057
	USS 900 - INTERCEPTOR-CRH	550,000	059
		Total:	2,424,500
CRAIG	WASTEWATER TREATMENT FACILITIES EXPANSION	1,000,000	083
	WATER SOURCE	3,800,000	082
		Total:	4,800,000
DILLINGHAM	SEWERAGE TREATMENT FACILITY	700,000	003
	TRANSITE PIPE REPLACEMENT	486,000	005
	WATER DISTRIBUTION SYSTEM EXPANSION	640,000	004
	WATER WELLS	395,000	006

MUNICIPALITY	PROJECT NAME	FUNDING - ADEC	NO.
		Total:	2,221,000
FAIRBANKS	DERBY TRACTS LATERAL SEWERS	175,000	099
	N. E. INTERCEPTOR -PHASE II	150,000	098
	N.E. INTERCEPTOR -PHASE I	175,000	097
	VAN HORN AREA WATER DISTRIBUTION	425,000	102
	WASTEWATER TREATMENT PLANT UPGRADE/EXPANSION	3,300,000	100
	WATER TREATMENT PLANT EXPANSION, PHASE B	3,997,566	096
	WILBUR STREET WATER TIE	1,000,000	101
		Total:	9,222,566
GALENA	WATER DISTRIBUTION AND WASTEWATER COLLECTION	2,000,000	066
		Total:	2,000,000
HAINES	GRUENING DRIVE WATER AND SEMER	133,000	128
	SEWER OUTFALL EXTENSION	55,000	147
	SMALL TRACT/FAA SANITARY SEWER COLLECTION SYSTEM	195,325	129
	YOUNG ROAD SANITARY SEWER COLLECTOR	165,000	127
		Total:	548,325
HOMER	DANVIEW WATER LINE	72,000	019
	HOMER SPIT WATERLINE, PH IA	430,000	018
	OCEAN DRIVE SEWER LINE	305,000	020
	WEST HOMER WATER & SEWER LINES	637,500	021
		Total:	1,444,500
JUNEAU	CHANNEL MARINA DISTRIBUTION	37,000	149
	DOUGLAS ZONE 2 AND 3 DISTRIBUTION	850,000	153
	EAST MENDENHALL VALLEY DISTRIBUTION	1,563,500	130
	EAST VALLEY RESERVOIR	1,012,500	148
	INDIAN POINT-AUKE BAY DISTRIBUTION	1,193,500	133
	J-D TREATMENT PLANT SLUDGE DEWATERING	155,700	134
	MENDENHALL PENINSULA DISTRIBUTION	1,087,500	137
	MENDENHALL VALLEY SEWER I/I CORRECTION	511,750	132
	MENDENHALL VALLEY STP EXPANSION, SEGMENT II & III, LIQUID TREAT.	1,292,500	131
	MENDENHALL VALLEY STP EXPANSION, SEGMENT IV & V, SOLIDS TREATMENT	621,600	155
	MONTANA CREEK RESERVOIR	622,500	152
	NORTH DOUGLAS DISTRIBUTION	2,095,000	140
	NORTH DOUGLAS RESERVOIR	999,000	141
	WEST MENDENHALL VALLEY INTERCEPTOR PHASE I	1,962,332	135
	WEST VALLEY INDUSTRIAL DISTRIBUTION	372,000	150
	WEST VALLEY RESIDENTIAL DISTRIBUTION	1,440,000	151
		Total:	15,816,382
KAKE	SEWER MAIN FOR SOUTHERN KAKE	1,013,956	125
	WATER AND SEWER IMPROVEMENTS - PUBLIC DOCK	28,050	126

MUNICIPALITY	PROJECT NAME	FUNDING - ADEC	NO.
		Total:	1,042,006
KENAI	EAST KENAI INTERCEPTOR-THOMPSON PARK SEWER IMPROVEMENTS	1,083,000	024
	EAST KENAI SEWER INTERCEPTOR-VALHALLA HEIGHTS SEWER IMPROVEMENTS	1,686,000	028
	KENAI SPUR SEWER BORE AT ILIAMNA ROAD	25,000	032
	KENAI SPUR WATER & SEWER BORE TO SOUTHWEST PORTION OF SECTION 36	50,000	030
	NORTH SPUR WATER AND SEWER IMPROVEMENTS, WILDWOOD TO CITY LIMITS	400,000	031
	PRINCESS, CINDERELLA, MCCOLLUM, ALIAK, MAGIC WATER AND SEWER IMPROVEMENTS	600,000	025
	SPRUCE, 2ND, 3RD AND 5TH WATER AND SEWER IMPROVEMENTS	300,000	029
	THOMPSON PARK WATER IMPROVEMENTS	350,000	026
	VALHALLA HEIGHTS WATER IMPROVEMENTS	300,000	027
		Total:	4,794,000
KENAI PENINSULA BOROUGH	CENTRAL PENINSULA INCINERATION FACILITY	5,500,000	008
	NEW SPECIAL SOLID WASTE SITE	250,000	009
	NINILCHIK LANDFILL	150,000	010
		Total:	5,900,000
KETCHIKAN GATEWAY BORO	MOUNTAIN POINT WATER DISTRICT	100,000	069
	MUD BITE SUBDIVISION SEWER	1,079,580	017
	SOUTH TONGASS SERVICE DISTRICT SEWER	850,000	016
		Total:	2,029,580
KETCHIKAN PUBLIC UTILITIES	CARLANNA LAKE ROAD-TIMBERLINE TO FAIRVIEW WATER	20,500	121
	CARLANNA LAKE TREATMENT PLANT	415,850	117
	FAWN LAKE 36-INCH TRANSMISSION	644,400	116
	LOWER HIGHLAND WATER	16,500	120
	MILLER STREET WATER EXTENSION	32,550	122
	NORDSTROM-CONFIDENCE WATER	696,250	119
	THIRD AVENUE EAST WATER	37,000	123
	WATER TANK RELOCATION, PUMP STATION AND TRANSMISSION LINE	247,000	118
	WATERFRONT PIPE PROGRAM (WATER)	536,550	124
WOOD STAVE WATER MAIN PROGRAM	302,300	115	
		Total:	3,546,900
KING COVE	BOAT HARBOR/DOCK WATER AND SEWER	400,000	074
		Total:	400,000
KLAWOCK	AIRPORT WATERLINE	300,000	111
	EAST KLAWOCK WATER AND SEWER	300,000	110
		Total:	600,000
KODIAK	ELEVENTH AVENUE WATERLINE	300,000	086
	NEAR ISLAND WATER AND SEWER	2,000,000	084
	WASTEWATER TREATMENT PLANT MODIFICATIONS	250,000	085

MUNICIPALITY	PROJECT NAME	FUNDING - ADEC	NO.
		Total:	2,550,000
KODIAK ISLAND BOROUGH	CITY LANDFILL	1,000,000	146
		Total:	1,000,000
KOTLIK	WATER AND SEWER	1,500,000	011
		Total:	1,500,000
KOTZEBUE	SEWAGE LAGOON IMPROVEMENTS	150,000	114
	SEWER SYSTEM MODIFICATIONS	125,000	113
	SOLID WASTE DISPOSAL SITE	40,000	112
		Total:	315,000
MATANUSKA-SUSITNA BOROUGH	TALKEETNA WATER SYSTEM	1,091,000	051
		Total:	1,091,000
NENANA	WATER AND SEWER EXPANSION PHASE II	2,000,000	001
		Total:	2,000,000
NOME	AIRPORT UTILITY EXPANSION	971,715	064
	ALTERNATE WATER SUPPLY	776,250	065
	ICY VIEW UTILITY EXTENSION	3,092,063	062
	LANDFILL IMPROVEMENTS	123,500	052
	WASTEWATER PLANT IMPROVEMENTS	1,250,000	061
	WATER SUPPLY IMPROVEMENTS	2,251,125	063
		Total:	8,464,653
NORTH POLE	HIGH SCHOOL BYPASS FORCE MAIN	237,000	072
	HIGHWAY PARK WATER AND SEWER	1,389,000	073
	NORTHWEST SEWER INTERCEPTOR AND WATER TRANSMISSION LINES	1,953,500	070
	SEWAGE TREATMENT EXPANSION	1,425,000	071
		Total:	5,004,500
NORTH SLOPE BOROUGH	ATQASUK SEWAGE TREATMENT FACILITY	1,000,000	103
	ATQASUK WATER TREATMENT FACILITY	1,000,000	104
	BARROW LANDFILL	1,000,000	105
	BARROW SEWAGE DISPOSAL/WATER DISTRIBUTION	5,000,000	106
	KAKTOVIK SEWAGE DISPOSAL	742,500	107
	WAINWRIGHT SEWAGE DISPOSAL	1,730,250	108
	WAINWRIGHT WATER SUPPLY LINE	1,000,000	109
		Total:	11,472,750
OUZINKIE	WATER AND SEWER	150,000	095

MUNICIPALITY	PROJECT NAME	FUNDING - ADEC	NO.
		Total:	150,000
PETERSBURG	HAMMER AND MILL SLOUSH SEWER EXTENSION	228,000	068
	SCOW BAY AREA SEWER SYSTEM	678,825	068
	WATER PLANT CLARIFICATION SYSTEM	350,000	067
		Total:	1,256,825
SAND POINT	BOAT HARBOR/DOCK WATER AND SEWER	400,000	075
		Total:	400,000
SAXMAN	SEWAGE TREATMENT PLANT UPGRADE	388,750	053
		Total:	388,750
SITKA	CASCADE CREEK SEWER	140,500	015
		Total:	140,500
SKAGWAY	WATER STORAGE TANK	125,000	126
		Total:	125,000
SOLDOTNA	1.0 MG RESERVOIR AND FOOTHILLS TRANSMISSION MAIN	825,000	038
	1.0 MG RESERVOIR AND SALAMATOF TRANSMISSION MAIN	981,050	046
	AIRPORT INTERCEPTOR SEWER	948,000	042
	EAST REDOUBT-STERLING HWY TO SE CORNER, SECTION 28 WATER MAIN	326,000	047
	K-BEACH ROAD WATER MAIN INTERTIE	225,100	045
	KNIGHT DRIVE WATER AND SEWER EXTENSIONS	846,170	048
	PARK LANE WATER LOOP	183,890	049
	RIVERSIDE SEWER MAIN	96,680	039
	SEWER SLUDGE INCINERATOR	1,015,000	041
	SLUDGE DEWATERER	60,000	044
	STERLING HIGHWAY-SALAMATOF SEWER EXTENSION	98,820	043
	WATER LOOP - KENAI SPUR MAIN EXTENSION	470,000	048
		Total:	6,075,710
ST. MARY'S	WATER/SEWER UPGRADE PH. 1, ADREAFSY SEWER PROJECT/ WATER LOOP REPAIR	575,071	050
		Total:	575,071
THORNE BAY	WATER AND SANITARY SEWER RENOVATION	1,345,000	033
		Total:	1,345,000
TULLUKSAK	WATER AND SEWER FACILITIES		145

MUNICIPALITY	PROJECT NAME	FUNDING - ADEC	NO.
		Total:	0
VALDEZ	ALPINE WOODS SEWERAGE	1,500,000	091
	BLUEBERRY HILL WATER AND SEWERAGE SYSTEMS	450,000	092
	CAMPGROUND SANITARY DUMP STATION	45,000	089
	LOOP ROAD WELL HOUSE TELMETRY	37,500	090
	OLD TOWN LANDFILL CLOSURE	52,500	094
	SANITARY LANDFILL EQUIPMENT SHED	30,000	093
	SMALL BOAT HARBOR COMFORT STATION	78,650	088
		Total:	2,193,650
WASILLA	WATER SYSTEM EXPANSION	1,200,000	007
		Total:	1,200,000
		Total:	115,445,268

SB 47

Arctic Air Pollution Calls for International Controls

World Climate Endangered

The problem of Arctic haze promises to join acid rain as an issue demanding international agreements governing industrial pollution. Northerners have been alerted by a growing number of reports to the problem of Arctic haze and its international implications.

While scientists still differ about the impact of Arctic haze, they agree on the significant capacity of such atmospheric pollution to absorb light from the sun and thereby alter the temperature of the Arctic air.

In a recent article in the *Los Angeles Times* North Slope Borough scientist Tom Albert was quoted as saying, "If this cuts down on the amount of sunlight that reaches the ground or retards reflection of the sunlight, it's going to have an effect, either increasing or decreasing polar icecap melting, and you're talking about water on a grand scale. That has an effect on sea level, so the rest of the U.S. must have an interest in Arctic haze!"

Industrial Pollution Sink

Generally, Alaskans enjoy the best air in the U.S. When the air mass flows in from the Gulf of Alaska, it bears traces of sodium and chlorine, components of sea water. When it enters from Canada, it bears traces of aluminum and silicon, components of wind-blown dust. During these times, visibility in Alaska is good, and Mt. McKinley can be seen easily from Anchorage to Fairbanks. On the North Slope, winds and air in the straits tend to keep locally generated pollution at a very low level.

But when the air flow enters Alaska from over the Arctic Ocean, as it does frequently in the winter, the air becomes hazy. Chemical analysis of the air shows the presence of black soot in concentrations comparable to that found in the air above large cities, along with particles of sulphur and heavy metals associated with heavy industry.

Generally, the increase in Arctic pollution has been attributed to the ten-fold

increase in pollution emissions in the northern hemisphere, unobstructed and increased air circulation moving directly from continental industrial areas into the Arctic during winter months, and less winter precipitation, which accentuates the haze.

Appearing as grey-blue or grey-brown, the haze arrives in the fall and peaks in March and April. Its origins are 3,000 to 6,000 miles away, and it takes at least five days to reach Barrow. Most of it comes from smelting lead and zinc or the combustion of coal and oil in the industrialized areas of the Soviet Union, including the southern Urals and northern Siberia. Pollution from England and places like the Ruhr Valley in West Germany accounts for most of the rest, with a small amount coming from North America.

It is known to travel in concentrations, so much so that one element, sulfur, has been measured at greater levels than in the industrialized northeastern U.S. in winter. It covers a vast area comparable in size to North America, extending from Alaska eastward to Norway, covering the whole Arctic basin. It is the extent of the pollution and its impact upon world climate are the concern of scientists.

The Atomic Pollution Studies

Arctic haze was described in scientific journals as early as 1914. It was later observed in the 1950's and 60's by weather observers making flights, called the Ptarmigan flights, from Fairbanks to the North Pole and back. They noted that near the Arctic coast, a dense haze was observed that extended thousands of miles horizontally and three to five miles vertically.

It was felt that a haze so far from factories and cars must have been the result of natural causes. Scientists could not conceive of air pollution being transported from the world's industrial centers, the closest of which are 1,500 kilometers away. Slowly, however, evi-

dence began to accumulate that pollutant particles can be transported in the lower atmosphere over immense distances. Atomic testing provided the first hard evidence.

In the early-1960's, scientists worldwide discovered high concentrations of radioactive fallout from atmospheric atomic testing were concentrating in the Arctic food chain. These early studies indicated that the subsistence foods of Alaska Native peoples contained as much as four times as much Strontium-90 as other U.S. populations.

This prompted several comprehensive investigations of the efficient transfer of radioactive materials up the relatively direct and simple food chains of northern subsistence users. Measurements of Cesium-137 in northern populations began almost simultaneously in Scandinavia and Alaska. Investigations were conducted among the reindeer herding societies of northern Sweden, Finland, and Russia. Other studies were carried out among Canadian Indians and Eskimos.

In Alaska, Wayne Hanson was put to work by the U.S. Atomic Energy Commission to investigate resident radioactive pollution in preparation for Project Chariot, a U.S. Atomic Energy Commission plan — later aborted — to dredge a harbor near Cape Thompson near Point Hope using an atomic bomb.

Noting concentrations in lichen and caribou, Hanson and his colleagues undertook to measuring the amount of excess radioactivity present in Alaskan lichen, caribou and reindeer, and subsistence users themselves. His early work involved transporting a lead-shielded whole-body radioactivity counter weighing 15,000 pounds to the Arctic villages of Anaktuvuk Pass, Barrow, Kotzebue, Point Hope, Fort Yukon, and Arctic Village, where body radioactivity tests were conducted. Similar reports had been received from the University of Lund in Sweden about the atomic-fallout radiation concentrating in the Sami (Lap, s) of both Sweden and



Anaktuvuk Pass, September 1963: living off the radioactive end of the food chain.

Finland.

In 1965, a technique was developed which involved a much lighter lap-held sodium-iodide crystal around which the subject's body provided a background shield. With this new equipment weighing less than 30 pounds, Hanson was able to measure seasonal changes in the concentration of Cesium-137 of people in three Alaskan villages of contrasting cultural backgrounds.

Hanson and his colleagues worldwide were able to trace the movement of radioactive pollution from its world-wide atomic-test sources into the Arctic lichen and up the food chain during the period of world-wide atomic testing between 1962 and 1965. They discovered that:

1. Levels of Cesium-137 in the food chain varied according to the amount of radioactive pollution in the air.
2. The amount of radioactive atmospheric pollution varied according to the size and number of atomic tests.
3. The amount of Cesium-137 ingested by subsistence users varied according to the amount of reindeer and caribou eaten.
4. Although the deposition of fallout was only one-fourth that found in the northern tier states such as Washington, Idaho, and Montana, the Cesium-137 content of the average adult in Anaktuvuk Pass was much greater than that of other U.S. citizens.
5. A dramatic decline in the level of

radioactive materials in the Arctic food chain occurred after the 5 August 1963 Limited Nuclear Test Ban Treaty between the U.S., the U.S.S.R., and the U.K. During the 1967-73 test series conducted by the Peoples' Republic of China, an 8-fold increase in radioactive pollution was observed in Alaskan lichen the summer following a specific test series and in the bodies of northern subsistence users the second summer after the test.

These studies, along with the data from the worldwide network of fallout-sampling stations set up by the Atomic Energy Commission in 1952, were able to accurately trace the transport of radioactive materials from the locations of the specific test sites through the atmosphere to their Arctic destinations. The atmospheric transport of radioactive fallout provided scientists with a tracer for the study of the transport of other atmospheric pollutants. The implications for world climate were enormous.

Tracing the Routes of Atmospheric Pollution

Joseph Prospero and his group at the University of Miami discovered that the fine dust swept up by storms over the Algerian Sahara travelled as far as Barbados (7,000 kilometers), Florida, and even Mexico (10,000 kilometers). They found that one factor contributing to these long trips is the ability of the dust layers to suppress the rainfall which

would normally wash the dust out of the atmosphere.

In 1971, Kenji Isono and his colleagues at the Water Research Institute of Nagoya, Japan, reported that they had observed dust travel over Japan from Asia and days later collected the dust in Hawaii and Alaska, some 10,000 km from its source. The same phenomenon was observed in 1975 by Kenneth Rahn of the University of Rhode Island and Glenn E. Shaw of the University of Alaska, Fairbanks, when they began sampling pollutants in the Arctic haze at Barrow — but they have reported little evidence of Gobi dust since then.

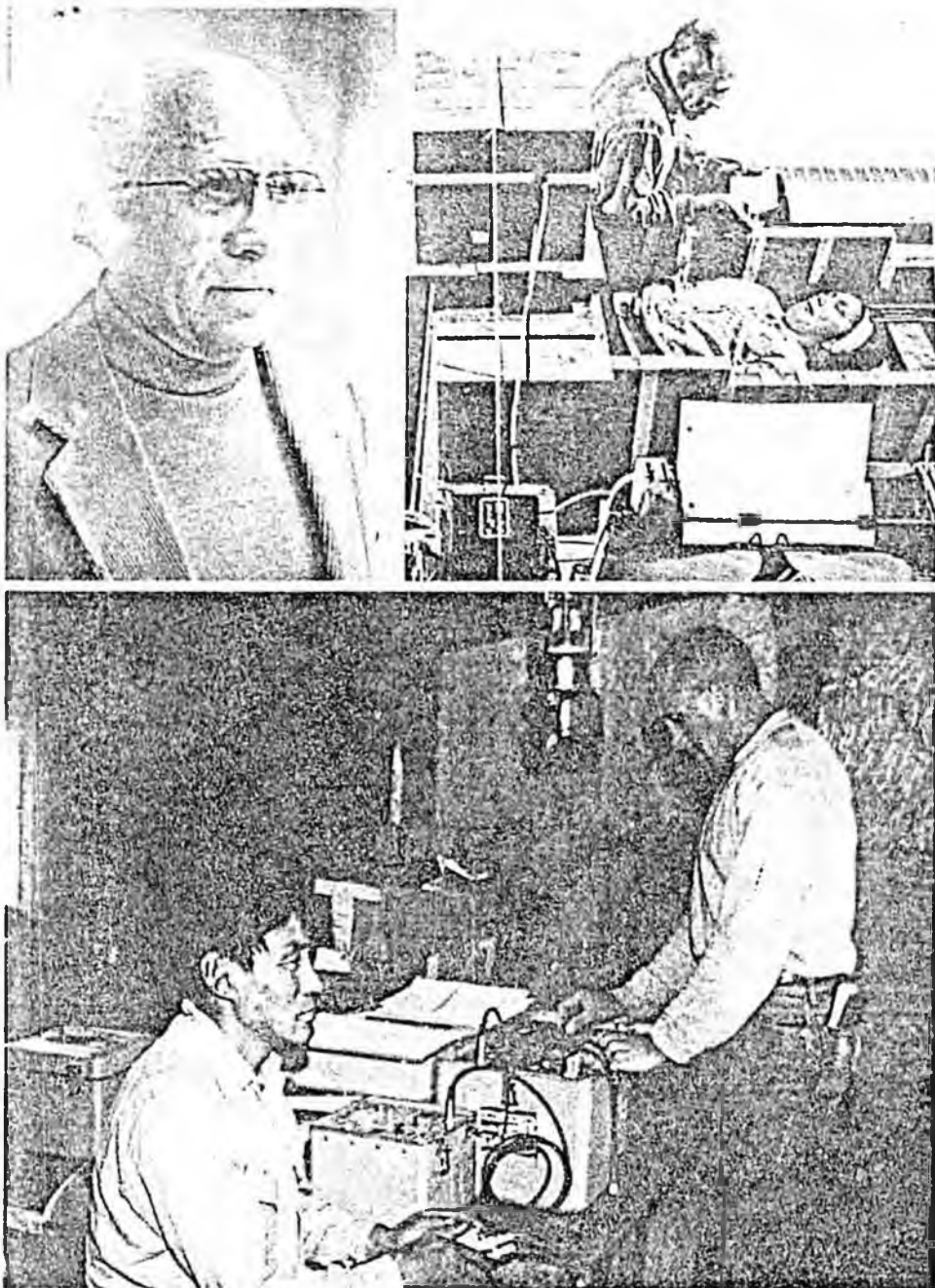
Climatic Impact of Arctic Haze

While the sources and makeup of Arctic haze are becoming better known, studies on the impact of the haze on global climate have only begun. Last year, the Office of Geophysical Monitoring Climate Change of the National Oceanic and Atmospheric Administration (NOAA) announced a huge study on Arctic haze, which will begin in 1986 and involve a number of organizations including a Norwegian research institute. NOAA put up \$500,000 for the study and another \$125,000 is coming from the Office of Naval Research and the Air Force. Dr. Russell C. Schnell, a research scientist at the University of Colorado who conceived the project, said in an interview with the *New York Times* that researchers would measure solar radiation on land and in the air, using a plane owned by NOAA that can sample the air continuously for 5,000 miles in a single flight.

He said the aircraft would enable the scientists to get instantaneous readings on the effect of the pollutants by flying above the haze and then diving below it, comparing solar radiation above the haze to radiation below it. From this comparison, they hope to determine the energy absorbed by the haze and the resulting temperature change.

The plane will fly in an arc from southern Alaska to northern Norway, crossing directly over the North Pole. These measurements will be compared to recordings taken at stations in Canada, Norway, and Barrow. Schnell stated in a recent *Los Angeles Times* article, "This is another building block in what we are doing to our climate. There is no doubt there's a change because of Arctic haze. But is that change important? That is the question."

Continued next page



Top left, Hansen today; what are the impacts on Arctic health? Top right, Hansen conducting a whole-body radioactive count in Kotzebue in a photo appearing in the November 1965 *National Geographic*.

Below, counting the Cesium-137 burden of Zaccharias Hugo at Anaktuvuk Pass with a lap counter in January 1966.

The Rahn-Shaw Studies

In 1972, Kenneth Rahn and Glenn Shaw began to study Arctic haze supported by the Pentagon's Office of Naval Research. They began building an alliance of researchers in a world-wide Arctic Air-Sampling Network with stations in the U.S., Canada, Denmark, Iceland, Norway, Sweden, and, since 1983, West Germany. The researchers were able to trace separate layers of the pollutants through chemical analysis and identified at least 15 unique "signatures"—the trail

of each pollution source from its point of origin in Europe, North America, and the Soviet Union. The haze is composed of sulfates — the major source of pollution in urban areas — and the elements manganese, vanadium, arsenic, selenium, zinc, and indium.

By comparing the ratio of the various elements in the Arctic haze, along with meteorological data on air flow patterns, they were convinced — after six years of research — that air masses from the central Soviet Union carried as much as 70

percent of the pollutants to the Arctic. Landsat satellite images have shown 25-mile long plumes emanating from smelters processing rich nickel and copper sulfide ores at Noril'sk, Siberia, near the mouth of the Yenisey River at 70 degrees latitude (almost as far north as Barrow).

In 1983, the U.S. and several other nations addressed the problem of Arctic haze in a series of flights over the North Pole. Pollution samples taken by the Air Force during these flights showed that pollution samples collected from air masses emerging from central U.S.S.R. matched the Barrow pollution samples in composition.

The Lawrence Berkeley Findings

In 1982, researchers at Lawrence Berkeley Laboratory of the University of California at Berkeley announced that they had discovered large concentrations of black soot in Arctic haze, similar to that found in the air above large cities. The soot concentrations are only three or four times less than those found in typical urban environments such as Berkeley, Denver, and Gaithersburg, Maryland, and only 10 times less than found in New York City.

The researchers pointed out that the graphitic carbon particles can be produced only by combustion process, confirming suspicions that Arctic haze is caused by pollution, not natural causes, and that airborne pollution can be transported over long distances and become a global problem. These particles absorb the sun's radiation very effectively and "can contribute significantly to the heating of the atmosphere," the report said.

The Arctic Haze Symposium

The recognition of the deterioration of air quality in the Arctic prompted the Arctic Haze Symposium, which took place during the Arctic Science Conference held in Anchorage on 2-5 October 1984. The symposium was sponsored by the State of Alaska through the efforts of State Senator Frank Ferguson.

At the symposium, a series of eight papers summarized studies done on Arctic haze, along with public testimony, including that of three people from Yukon-Kuskokwim Delta area, Jack Williams, Wassilie Evans, and Mathew Beam, who expressed concern about the effects of air pollution on reindeer and

marine mammals. There were also international participants from Canada, Sweden, Denmark, and Switzerland, along with a representative from the U.S. Department of State.

Emerging from those presentations and discussions, plans were made for an international symposium on Arctic atmospheric pollution to be held at Cambridge, England, on 2-5 September 1985, to be hosted by the Scott Polar Research Institute and co-sponsored by the State of Alaska and the World Meteorological Organization. Discussions will include: 1) composition and source areas (including indoor pollution), transportation, and deposition; 2) local, regional, and global climatic implications; 3) ecological, cultural, and health issues; and 4) international cooperation and state responsibilities.

Climate Impacts

So far, scientists can only speculate as to the possible effects of Arctic haze on the climate. While the light-absorbing haze may heat up the atmosphere, it may have a cooling effect upon Arctic ice. Some have suggested that the haze may influence cloud properties and precipitation by changing the concentration of particles that are capable of becoming the nuclei of ice crystals or cloud droplets.

Calculations and computer models in the Lawrence Berkeley study indicated that this heating effect in the Arctic is equivalent to that expected from doubling the levels of carbon dioxide in the atmosphere. Scientists have previously projected that doubling the concentration of carbon dioxide in the atmosphere may produce a catastrophic "greenhouse effect" by trapping heat near the earth's

surface. An average global temperature increase of as little as 2 degrees Celsius might seriously affect the distribution on rainfall and could turn agricultural areas into deserts.

While Kenneth Rahn acknowledges the potential impacts, he minimizes them because of the seasonal nature of the haze. It does not accumulate from one year to the next as does carbon dioxide, which stays in the atmosphere for ten years. Rahn also points out that Arctic haze studies should give a better indication of the possibilities of nuclear winter. What happens when a thin layer of light-absorbing particles covers an area as large as the Arctic will tell us much about the aftermath of a nuclear war, when five to ten times as much pollution will be sent into the atmosphere.

Wayne Hanson has stated that the haze could contribute to the breakdown of the ozone layer which protects the earth from highly energetic radiation that comes from outer space. Recalling his studies which showed how quickly air pollution concentrates in the Arctic food chain, he is also concerned about the possibilities of effects upon the environment, health, and culture of northern societies.

An International Problem

Most significant is the fact that Arctic atmospheric pollution is international in scope and intercontinental in dimension, requiring international cooperation to address the problem. The failure of the Soviets to cooperate in this research has been the greatest disappointment in the research so far, especially as they have been fingered as the major contributor to the problem.

"The polar area of the Soviet Union is

the largest military zone in the world," Russel Schnell noted in the *Los Angeles Times* article. "Scientists have no right to the area. Soviet or American, it makes no difference. Plus, it's got a lot of embarrassing and economic overtones. What are you going to do about it, shut down their industry?"

Addressing the Alaska North and Northwest Mayors Conference in Barrow in November 1984, Wayne Hanson said that Arctic haze might be the lever needed to open up more cooperation with the Soviet Union. "During the 1950's," he said, "we were aware of the problem of atomic fallout, but we didn't have the technology or public interest to do much about it," he said. "But in the period of 1962 to 1966, it received much international attention, and a great deal of information was obtained. It also figured very heavily, I think, in the conclusion of the 1963 Test Ban Treaty signed by the U.S., the Soviet Union, and Great Britain.

"In the issue of Arctic pollution, the people of the North have much to say. And I think that the Arctic Haze Symposium, that Senator Ferguson of Kotzebue was instrumental in starting, was a great initiative that should be given every support. Whether the Soviet Union will join us is anybody's guess, but we have to start somewhere. And the symposium to be held next year in Cambridge will be a major step."

Arctic haze, the carbon dioxide problem, sulfates, and the ozone effect are all ingredients in the climate soup. What science needs to find out is how air pollution is affecting world climate and how much more pollution can be tolerated before the climate is drastically changed. ☐

SEND TO: THE ARCTIC POLICY REVIEW

North Slope Borough
3201 "C" Street, #602, Anchorage, AK 99503

Name _____

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Street Address _____

City _____ State _____ Zip _____



SUBSCRIPTION AND CHANGE OF ADDRESS FORM

March 19, 1985
Senate C&RA 3:30p

SB 47 -- Special appropriations for payment as grants to Municipality of Anchorage for Eklutna, and to municipalities and unincorporated communities for village safewater programs, special appropriation to Dept Environmental Conservation for water, sewer, solid waste projects

Bill heard on Feb 21 -- testimony from Gary Hayden, DEC, Bill Miles, Muni of Anc; Scott Burgess

Sec 1 -- grants \$50 million to Anc for Eklutna

Sec 2 -- grants \$50 million as a 50% match for water, sewer, solid waste projects
(see atch 2)

Sec 3 -- grants the sum of \$16,840,000 to muni's and unincorporated communities for village safewater program:

An amendment has been offered by Senator Ferguson which divides the communities named in Section 3 of the original bill into incorporated (funds to be administered through the Dept of Administration as direct grants); and unincorporated (funds to be administered through Dept Environmental Conservation Village Safewater Program).

Attachments: ATCH #1 - Ferguson amendment

ATCH #2 - Breakdown of projects proposed for funding under Sec 2 of bill

ATCH #3 - Breakdown of projects proposed for funding under Sec 3 of bill

Atch #1

SENATE AMENDMENT

BY FERGUSON

To: AM. ND SENATE BILL No. 47

To: _____ HOUSE BILL No. _____

PAGE: 1 LINE: 22

Insert new sections to read:

* Sec. 3. The sum of \$13,700,000 is appropriated from the general fund for payments as grants to the following municipalities:

Shungnak	\$ 720,000
Diomede	500,000
Kiana	330,000
Saint Paul	800,000
Saint George	850,000
Kivalina	5,000,000
Golovin	2,000,000
Koyuk	3,500,000

* Sec. 4. The sum of \$3,140,000 is appropriated from the general fund for payments as grants for capital projects to the following unincorporated communities in the village safe- water program under AS 46.07:

Healy Lake	\$ 300,000
Lime Village	365,000
Red Devil	430,000
Circle	150,000
Igushik	45,000
Lewis Point	50,000
Noatak	450,000
Venetie	500,000
Kalskag	500,000
Telida	350,000

* Sec. 5. The appropriations made in secs. 1 and 3 of this Act shall be disbursed in accordance with AS 37.05.315.

Renumber remaining section accordingly.

Sec. 2 - SB 47

Atch 2

Water, Sewer and Solid Waste Projects

In July 1984, the Department solicited community input as to what projects they would like to have funded through the Municipal Grants Program. We also asked for their comments on a criteria system which would rank community needs in a statewide perspective. The criteria system is presented in Appendix A. We received approximately \$115.5 million in needs from forty-one communities for 148 projects. More details are available from the Department.

The projects were then scored and ranked to give a statewide perspective of need. This list is presented in Table I (page 4). The Department has requested \$50 million to fund the construction of these projects. If less money is appropriated, the list will be worked from the top down until all funds are spent.

✓ in Gov's budget
total \$10.1 mil

TABLE I

FY 86 STATE SANITATION PROJECT PRIORITY LIST 12/27/84

TAL SCORE	MUNICIPALITY	PROJECT NAME	FUNDING-ADEC	CUMULATIVE TOTAL
672	KLAWOCK ✓	EAST KLAWOCK WATER AND SEWER	322,222	322,222
598	KENAI ✓	PRINCESS, CINDERELLA, MOCOLLUM, ALIAK, & AGIC WATER AND SEWER IMPROVEMENTS	522,222	922,222
588	NORTH SLOPE BOROUGH ✓	ATGASUK SEWAGE TREATMENT FACILITY	1,222,222	1,522,222
575	KOTZEBUE ✓	SEWAGE LAGOON IMPROVEMENTS	152,000	2,352,222
525	JUNEAU ✓	MENDENHALL VALLEY STP EXPANSION, SEGMENT II & III, LIQUID TREAT.	1,292,500	3,342,522
525	JUNEAU	MENDENHALL VALLEY SEWER 1/1 CORRECTION	511,750	3,854,252
515	BRISTOL BAY BOROUGH ✓	NAKNEK SOLID WASTE PROJECT	750,000	4,624,252
515	NORTH POLE ✓	HIGHWAY PARK WATER AND SEWER	1,389,200	6,093,252
510	GALENA ✓	WATER DISTRIBUTION AND WASTEWATER COLLEC TION	2,220,000	7,993,252
508	ORAIS ✓	WATER SOURCE	2,220,000	11,793,252
502	JUNEAU	MENDENHALL PENINSULA DISTRIBUTION	1,287,500	12,880,752
500	JUNEAU	MENDENHALL VALLEY STP EXPANSION, SEGMENT IV & V, SOLIDS TREATMENT	521,600	13,502,252
485	KENAI	EAST KENAI INTERCEPTOR-THOMPSON PARK SEW ER IMPROVEMENTS	1,282,222	14,825,352
485	NORTH SLOPE BOROUGH	KAKTOVIK SEWAGE DISPOSAL	742,500	15,327,952
480	NORTH SLOPE BOROUGH	ATGASUK WATER TREATMENT FACILITY	1,222,000	16,327,952
475	VALDEZ	CAMPBONDS SANITARY DUMP STATION	12,000	16,337,952
472	BILLINGHAM	SEWERAGE TREATMENT FACILITY	722,000	17,237,952
472	FAIRBANKS	W. E. INTERCEPTOR -PHASE II	152,000	17,397,952
472	FAIRBANKS	SEWER OUTFALL EXTENSION	52,000	17,842,952
472	KETCHIKAN GATEWAY BORO	SOUTH TONGASS SERVICE DISTRICT SEWER	352,222	18,232,352
462	NORTH POLE	NORTHWEST SEWER INTERCEPTOR AND WATER TR ANSMISSION LINES	1,352,500	19,584,852
465	NORTH SLOPE BOROUGH	WAINWRIGHT WATER SUPPLY LINE	1,222,222	21,246,352
465	PETERSBURG	HAMMER AND MILL SLOUGH SEWER EXTENSION	222,000	21,474,352
462	NORTH SLOPE BOROUGH	WAINWRIGHT SEWAGE DISPOSAL	1,732,252	23,206,352
455	KENAI	SPRUDE, 2ND, 3RD AND 5TH WATER AND SEWER IMPROVEMENTS	322,222	23,528,352
455	PETERSBURG	SOCOM BAY AREA SEWER SYSTEM	372,322	23,900,432
445	ST. MARY'S	WATER/SEWER UPGRADE PH. 1, ADREAFBY SEWE R PROJECT/ WATER LOOP REPAIR	372,071	24,258,432
440	FAIRBANKS	WATER TREATMENT PLANT EXPANSION, PHASE 3	3,997,556	28,256,282
435	NOOME	ICY VIEW UTILITY EXTENSION	3,222,062	31,448,122
425	JUNEAU	EAST MENDENHALL VALLEY DISTRIBUTION	1,563,500	33,011,322

SCORE	MUNICIPALITY	PROJECT NAME	FUNDING-ADEC	CUMULATIVE TOTAL
420	ANGGON	GARBAGE DUMP IMPROVEMENT	50,000	33,251,625
420	NOKE	LANDFILL IMPROVEMENTS	123,500	33,385,125
420	NORTH SLOPE BOROUGH	BARROW LANDFILL	1,000,000	34,385,125
420	PETERSBURG	WATER PLANT CLARIFICATION SYSTEM	350,000	34,735,125
420	SOLDOTNA	SLUDGE DEWATERER	50,000	34,795,125
420	WASILLA	WATER SYSTEM EXPANSION	1,222,000	36,017,125
410	KENAI	THOMPSON PARK WATER IMPROVEMENTS	350,000	36,367,125
420	FAIRBANKS	N. E. INTERCEPTOR -PHASE 1	175,000	36,542,125
390	CORDOVA	NORTH FILL INDUSTRIAL PARK	700,000	37,242,125
390	CORDOVA	SOUTH FILL SEWER AND WATER	351,000	37,593,125
390	SITKA	CASCADE CREEK SEWER	140,500	37,733,625
360	KETCHIKAN GATEWAY BORO	YUD BITE SUBDIVISION SEWER	1,279,500	39,013,125
385	ALASKA	AIRPORT WATERLINE	300,000	39,313,125
375	CORDOVA	LSS 300 - INTERCEPTOR-CRM	550,000	39,863,125
370	CORDOVA	FEWER CREEK INTERCEPTOR	410,000	40,273,125
370	FAIRBANKS	WASTEWATER TREATMENT PLANT UPGRADE/EXPAN SION	3,300,000	43,573,125
370	KENAI PENINSULA BOROUGH	CENTRAL PENINSULA INCINERATION FACILITY	5,500,000	49,073,125
370	NOKE	WASTEWATER PLANT IMPROVEMENTS	1,250,000	50,323,125
365	KENAI	NORTH SPUR WATER AND SEWER IMPROVEMENTS, WILLOWOOD TO CITY LIMITS	400,000	50,723,125
350	KENAI	EAST KENAI SEWER INTERCEPTOR-VAL-HALLA HE IGATS SEWER IMPROVEMENTS	1,530,000	52,193,125
350	KETCHIKAN PUBLIC UTILITIES	CARLANNA LAKE TREATMENT PLANT	410,850	52,603,975
345	JUNEAU	WEST YAKDENHALL VALLEY INTERCEPTOR PHASE I	1,980,330	54,584,305
345	SOLDOTNA	K-BEACH ROAD WATER MAIN INTERCIE	220,100	54,804,405
340	FAINES	YOUNG ROAD SANITARY SEWER COLLECTOR	160,000	54,964,405
340	NORTH POLE	SEWAGE TREATMENT EXPANSION	1,425,000	56,389,405
340	SOLDOTNA	KNIGHT DRIVE WATER AND SEWER EXTENSIONS	946,170	57,335,575
340	SOLDOTNA	EAST REDOUBT-STERLING HWY TO 80 CORNER, SECTION 28 WATER MAIN	320,000	57,655,575
340	VALDEZ	ALPINE WOODS SEWERAGE	1,500,000	59,155,575
335	HAKE	WATER AND SEWER IMPROVEMENTS - PUBLIC DO CK	20,000	59,175,575
330	CORDOVA	SKI HILL SEWER MAIN EXTENSION	137,500	59,313,075
330	JUNEAU	NORTH DOUGLAS RESERVOIR	990,000	60,303,075
330	JUNEAU	MONTANA CREEK RESERVOIR	520,500	60,823,575
330	JUNEAU	EAST VALLEY RESERVOIR	1,210,500	62,034,075
325	DILLINGHAM	WATER DISTRIBUTION SYSTEM EXPANSION	640,000	62,674,075
325	JUNEAU	NORTH DOUGLAS DISTRIBUTION	2,350,000	65,024,075
325	JUNEAU	WEST VALLEY RESIDENTIAL DISTRIBUTION	1,440,000	66,464,075
325	KETCHIKAN GATEWAY BORO	MOUNTAIN POINT WATER DISTRICT	100,000	66,564,075
325	SOLDOTNA	1.0 YG RESERVOIR AND FOOTHILLS TRANSMISS	900,000	67,464,075

FY 86 STATE SANITATION PROJECT PRIORITY LIST 12/07/84

SCORE	MUNICIPALITY	PROJECT NAME	FUNDING-ADEC	CUMMULATIVE TOTAL
		ION MAIN		
328	ANGCON	CITY WATER STORAGE TANK	300,000	67,162,207
328	KETCHIKAN PUBLIC UTILITIES	WATER TANK RELOCATION, PUMP STATION AND TRANSMISSION LINE	247,000	67,409,207
330	NORTH SLOPE BOROUGH	BARROW SEWAGE DISPOSAL/WATER DISTRIBUTION	5,222,000	72,409,207
315	ANGCON	ELEVATED WATER STORAGE TANK	75,000	72,484,207
315	CRAIG	WASTEWATER TREATMENT FACILITIES EXPANSION	1,200,000	73,484,207
315	HOMER	OCEAN DRIVE SEWER LINE	305,000	73,789,207
315	HOMER	WEST HOMER WATER & SEWER LINES	637,500	74,426,707
310	COADDOVA	INDUSTRIAL PARK PHASE IIIC SEWER	266,000	74,692,707
310	KENAI	VALHALLA HEIGHTS WATER IMPROVEMENTS	300,000	74,992,707
300	JUNEAU	DOUGLAS ZONE 2 AND 3 DISTRIBUTION	850,000	75,842,707
320	JUNEAU	WEST VALLEY INDUSTRIAL DISTRIBUTION	372,000	76,214,707
320	JUNEAU	CHANNEL MARINA DISTRIBUTION	37,000	76,251,707
320	JUNEAU	INDIAN POINT-PUKE BAY DISTRIBUTION	1,193,500	77,445,207
320	KENAI PENINSULA BOROUGH	MINILCHIK LANDFILL	150,000	77,595,207
295	FAIRBANKS	DEBAY TRACTS LATERAL SEWERS	175,000	77,770,207
295	KODIAK	SANITARY LANDFILL	640,000	78,410,207
295	SOLDOTNA	TRUCK LANE WATER LOOP	103,850	78,594,097
295	SOLDOTNA	SEWER MAIN	96,680	78,690,777
295	SOLDOTNA	ST. HIGHWAY-SALAMATER SEWER EXTENSION	59,820	78,789,597
290	ANGCON	WATER AND SEWER LINE EXTENSION	84,450	78,874,047
295	KODIAK	NEAR ISLAND WATER AND SEWER	2,200,000	80,874,047
295	KENAI	WATER AND SEWER EXPANSION PHASE II	2,200,000	82,874,047
265	NOPE	AIRPORT UTILITY EXPANSION	371,715	83,245,762
265	NORTH POLE	HIGH SCHOOL BYPASS FORCE MAIN	237,000	83,482,762
272	FAIRBANKS	WILBUR STREET WATER TIE	1,200,000	84,682,762
270	JUNEAU	J-D TREATMENT PLANT SLUDGE DEWATERING	155,720	84,838,482
270	KETCHIKAN PUBLIC UTILITIES	NORDSTROM-CONFIDENCE WATER	696,250	85,534,732
270	KODIAK	ELEVENTH AVENUE WATERLINE	300,000	85,834,732
270	SAXMAN	SEWAGE TREATMENT PLANT UPGRADE	300,750	86,135,482
270	VALDEZ	BLUEBERRY HILL WATER AND SEWERAGE SYSTEMS	450,000	86,585,482
265	KETCHIKAN PUBLIC UTILITIES	LOWER HIGHLAND WATER	34,000	86,619,482
265	SOLDOTNA	WATER LOOP - KENAI SPUR MAIN EXTENSION	470,000	87,089,482
265	KAKE	SEWER MAIN FOR SOUTHERN KAKE	1,013,956	88,103,438
250	KETCHIKAN PUBLIC UTILITIES	CARLAINNA LAKE ROAD-TIMBERLINE TO FAIRVIEW WATER	20,500	88,123,938
245	HOMER	HOMER SPIT WATERLINE, PH IA	430,000	88,553,938
245	KODIAK	WASTEWATER TREATMENT PLANT MODIFICATIONS	250,000	88,803,938

RE	MUNICIPALITY	PROJECT NAME	FUNDING-ADEC	CUMMULATIVE TOTAL
40	FOKER	DANVIEW WATER LINE	72,000	89,283,318
48	KENAI	KENAI SPUR WATER & SEWER BORE TO SOUTHWEST PORTION OF SECTION 36	50,000	89,333,318
225	KENAI PENINSULA BOROUGH	NEW SPECIAL SOLID WASTE SITE	250,000	89,583,318
228	CHEVAK	COMMUNITY INCINERATOR	20,000	89,603,318
222	SAND POINT	BOAT HARBOR/DOCK WATER AND SEWER	216,305	89,820,223
222	SOLDOTNA	AIRPORT INTERCEPTOR SEWER	948,000	90,768,223
228	VALDEZ	SANITARY LANDFILL EQUIPMENT SHED	30,000	90,798,223
215	BILLINGSFAM	WATER WELLS	335,000	91,133,223
215	MEYER	WATER SUPPLY IMPROVEMENTS	2,175,000	93,308,223
218	AINES	GRUENING DRIVE WATER AND SEWER	133,000	93,501,223
200	KETCHIKAN PUBLIC UTILITIES	MILLER STREET WATER EXTENSION	32,550	93,533,773
220	KETCHIKAN PUBLIC UTILITIES	THIRD AVENUE EAST WATER	37,000	93,570,773
200	VALDEZ	OLD TOWN LANDFILL CLOSURE	52,500	93,623,273
295	KING COVE	BOAT HARBOR/DOCK WATER AND SEWER	400,000	94,023,273
295	SOLDOTNA	SEWER SLUDGE INCINERATOR	1,015,000	95,038,273
295	VALDEZ	LOOP ROAD WELL HOUSE TELEMETRY	37,500	95,075,773
190	AINES	SMALL TRACT/FRA SANITARY SEWER COLLECTION SYSTEM	195,325	95,271,098
190	KENAI	KENAI SPUR SEWER BORE AT ILIAMNA ROAD	25,000	95,296,098
130	SOLDOTNA	1.0 MG RESERVOIR AND SALAMATOF TRANSMISSION MAIN	381,050	95,677,148
172	KETCHIKAN PUBLIC UTILITIES	PAWN LAKE 36-INCH TRANSMISSION	344,400	96,021,548
120	FAIRBANKS	VAN HORN AREA WATER DISTRIBUTION	425,000	96,446,548
145	SKAGWAY ✓	WATER STORAGE TANK	135,000	96,581,548
90	NOME	ALTERNATE WATER SUPPLY	776,250	97,357,798

V = \$10M. Inclusion Budget

Prioritized Projects

To determine construction priorities for the VSW Program in FY86, a panel was convened. It consisted of VSW people, an engineer from outside the Department, and a representative of the Governor's Office of Management and Budget. Twelve regional health corporations were contacted and six responded by recommending eighteen communities which were prioritized.

Three categories were established to aid in the evaluation:

Category A - Those villages that do not have community sanitation facilities or have a documented public health problem;

Category B - Communities with sanitation systems that are not fully operational, or potential health problems exist, or funds are available but additional money is needed to correct the problem;

Category C - Communities with operational facilities that need to be expanded or a higher level of service is desired by the residents.

Using available background information, vSW priorities were established as follows:

Category A

- 1. Shungnak
- 2. Healy Lake
- 3. Lime Village
- 4. Red Devil
- 5. Circle
- 6. Igushik
- 7. Lewis Point

Category B

- 8. Diomedea
- 9. Noatak
- 10. Kiana
- 11. St. Paul
- 12. Venetie
- 13. Kalskag
- 14. St. George
- 15. Telida

Category C

- 16. Kivalina
- 17. Golovin
- 18. Koyuk

3/18/85

Village Safewater Program

Minto got \$1 mil for

Need to develop some generic designs for water use

Have no system on qualifications

Greg Caputo - Village Safewater Program

Asked for recommendations from Health Corporations
on need village needs

- 1) village that doesn't have d/p
- 2) documented health problems
- 3) not where Fed \$ going in (Pub Hlth Serv)
- 4) places where a lot of state money
not already spent

18 villages submitted by Hlth corporations

Category A - no water developed

B - have, but broken down

C - have system, some money - need more

VSW did complete engineering study
for Talkeetna

Gov's budget HB 60 has
\$3 mil

Gov funded ~~N~~eposniak, Cherferuak

Incorporated - grants
unincorporated - thru agency

Last year

40 ongoing projects divided among
4 engineers

Grouping projects - Leg - money - won't abide it

Hayden - 50% grants

Wrote 1st & 2nd class cities - asked for G P J' W'
for 50% - wanted \$119 million

~~Don't~~ ^{No} responses on how to categorize
asked for \$50 - Gov funded \$10
and named the projects

Funding Information
 General Fund \$116,840,000
 Other Funds - 0 -
 \$116,840,000

1 IN THE SENATE

BY FERGUSON

2 SENATE BILL NO. 47

3 IN THE LEGISLATURE OF THE STATE OF ALASKA

4 FOURTEENTH LEGISLATURE - FIRST SESSION

5 A BILL

6 For an Act entitled: "An Act making special appropriations for payment
 7 as grants to the Municipality of Anchorage for the
 8 Eklutna Water Project and to municipalities and
 9 unincorporated communities for the village safe-
 10 water program; making a special appropriation to
 11 the Department of Environmental Conservation for
 12 water, sewer, and solid waste projects, outside of
 13 Anchorage; and providing for an effective date."

14 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF ALASKA:

15 * Section 1. The sum of \$50,000,000 is appropriated from the general
 16 fund for payment as a grant to the Municipality of Anchorage for the
 17 Eklutna Water Project.

18 * Sec. 2. The sum of \$50,000,000 is appropriated from the general fund
 19 to the Department of Environmental Conservation for payment as grants to
 20 municipalities for water, sewer, and solid waste facilities outside of
 21 Anchorage, under AS 46.03.030.

22 * Sec. 3. The sum of \$16,840,000 is appropriated from the general fund
 23 for payment as grants for capital projects to the following municipalities
 24 and unincorporated communities participating in the village safewater
 25 program under AS 46.07:

26	Shungnak	\$ 720,000 ✓
27	Healy Lake	300,000 ✓
28	Lime Village	365,000 ✓
29	Red Devil	430,000 ✓

*50%
match
green*

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Circle	150,000 ✓
Igushik	45,000 ✓
Lewis Point	50,000 ✓
Diomede	500,000 ✓
Noatak	450,000 ✓
Kiana	330,000 ✓
Saint Paul	800,000 ✓
Venetie	500,000 ✓
Kalskag	500,000 ✓
Saint George	850,000 ✓
Telida	350,000 ✓
Kivalina I	5,000,000 ✓
Golovin	2,000,000 ✓

* Sec. 4. The appropriations made in secs. 1 and 3 of this Act shall be disbursed in accordance with AS 37.05.315 - 37.05.325.

* Sec. 5. This Act takes effect immediately in accordance with AS 01.-10.070(c).

Sturgulewski - "NO"

too long
too long S.P.
(to annex)
don't have a problem
letting this go to a vote

~~Coghitt~~

Fischer - I don't object, it go to
the floor
But I am against it

~~Committee Report~~

~~Coghitt~~
Walt

SB 47

Ferguson submitted amendment

Hayden testified

Bill Miles have reduced funding from
2 to \$190 million

Eklutna is the No. 2 item in
the Arc Capitol improvements budget

Scott Burgess - League supports this
bill - know it is 50% funding

Is there a restriction on replacing
outmoded systems -

Hayden Answer is yes and no -
Under Village Safewater Program - yes -
under present statute "NO"

SB 113 - Doug Griffin

John Wolfe - Dir of ~~Persons~~ ^{Alaska's} ~~Persons~~ Commission

Property rich - income poor
income rich - property poor

~~Concerns that it is based on~~
Don't like basing exemption on
property value

(3) "department" means the Department of Environmental Conservation;

(4) "litter" means all waste materials susceptible to being dropped, deposited, discarded or otherwise disposed of upon property in the state or in waters under state jurisdiction; "litter" does not include the waste of the primary processes of mining or other extraction process, logging, sawmilling, farming or manufacturing;

(5) "litter bag" means a bag, sack or other container made of any material which is large enough and suitable to serve as a receptacle for litter inside a vehicle or vessel;

(6) "public place" means public or private property that is used or held out for use by the public, including but not limited to highways or other roads upon which vehicles are moved, parks, campgrounds, trailer parks, drive-in and fast food restaurants, gasoline service stations, parking lots for taverns, shopping centers and grocery stores and other parking lots which have a capacity for more than 50 vehicles, marinas, boat launching areas, boat moorage and fueling stations, public and private piers, benches, bathing areas, school grounds, sporting event sites with seating capacity for more than 200 spectators, and business district sidewalks;

(7) "vehicle" means a mechanically driven device of any kind which is used for the transportation of a person or property on a public highway, trail or path;

(8) "vessel" means all descriptions of watercraft used or capable of being used as a means of transportation on the water. (§ 2 ch 149 SLA 1980)

Chapter 07. Village Safe Water Act.

Section

- 10. Statement of purpose.
- 20. Provision of facilities
- 30. Nature and location of facilities
- 40. Construction of facilities
- 50. Operation of facilities

Section

- 60. Educational and informational program
- 70. Economy of administration
- 80. Definitions

Collateral references. — 39 Am. Jur. 2d. Health, § 22; 61A Am. Jur. 2d. Pollution Control, §§ 134, 135; 78 Am. Jur. 2d. Waterworks and Water Companies, §§ 31-46.

39A C.J.S., Health and Environment, § 46; 93 C.J.S., Waters, §§ 43-57.

Validity of statute prescribing standard of purity of water furnished for human consumption. 6 ALR 475.

Power of board of health to prescribe means or methods of keeping water supply free of impurities. 23 ALR 228.

Constitutionality and construction of statutes and ordinances for protection of municipal water supply. 72 ALR 673.

Wrongful pollution of stream by municipality as creating single cause of action or successive causes of action. 75 ALR 529.

When statute of limitations commences to run as to action against municipality for damages to riparian premises by pollution of stream by discharge of sewage. 122 ALR 1509.

Measure and elements of damages for pollution of well, cistern, or spring. 19 ALR2d 769.

Liability for pollution of stream by oil, water, or the like flowing from well. 19 ALR2d 1033.

Validity, construction, and effect of statute, ordinance, or other measure involving chemical treatment of public water supply. 43 ALR2d 453.

Measure and elements of damages for pollution of stream. 49 ALR2d 253.

Validity of prohibition or regulation of

bathing, swimming, boating, fishing, or the like, to protect public water supply. 60 ALR2d 790.

Landowner's right to relief against pollution of his water supply by industrial or commercial waste. 39 ALR3d 910.

Liability of water supplier for damages resulting from furnishing impure water. 54 ALR3d 936.

Sec. 46.07.010. Statement of purpose. It is the purpose of this chapter to establish a program designed to provide safe water and hygienic sewage disposal facilities in villages in the state. (§ 1 ch 136 SLA 1970)

Sec. 46.07.020. Provision of facilities. The commissioner shall institute and carry out a program to provide for the installation of such safe water and hygienic sewage disposal facilities in villages in the state as are necessary to assure that there will be at least one facility for safe water and hygienic sewage disposal in each village. (§ 1 ch 186 SLA 1970)

Sec. 46.07.030. Nature and location of facilities. (a) A facility constructed under authority of this chapter shall be available for use by the public and shall be designed to assure year-round use. The facility shall include, at a minimum, a source of clean water, such as a well with pumping facilities or utilization of surface water treated so it is safe and healthful for use, shower bath facilities, an adequate means of hygienic sewage disposal, and facilities for the washing of clothes. The building housing the facility shall also contain, if the commissioner determines it to be feasible and appropriate, suitable quarters to be used as a community health service office.

(b) The location of a facility constructed under this chapter shall be determined by the commissioner after consultation with the governing body of the village in which the facility is located, as well as with appropriate public agencies, including but not limited to the Alaska State Housing Authority. The aim of the consultation is to achieve maximum coordination in public development plans and activities affecting the community in which the facility is to serve. (§ 1 ch 186 SLA 1970; am § 49 ch 71 SLA 1972)

Sec. 46.07.040. Construction of facilities. (a) The commissioner shall provide for the construction of facilities under this chapter, and is authorized to provide for the construction by contract or through grants to public agencies or private nonprofit organizations, or otherwise. No contribution toward the cost of the construction of a facility may be required from its users.

(b) In the construction of a facility under this chapter, workmen from the village in which the facility is being constructed shall be utilized to the maximum extent feasible.

(c) For the purposes of (a) of this section, "cost of the construction of a facility" includes, in addition to costs directly related to the project, the sum total of all costs of financing and carrying out the project. These include, but are not limited to, the costs of all necessary studies, surveys, plans and specifications, architectural, engineering or other special services, acquisition of real property, site preparation and development, purchase, construction, reconstruction and improvement of real property and the acquisition of machinery and equipment as may be necessary in connection with the project; an allocable portion of the administrative and operating expenses of the grantee; the cost of financing the project, including interest on bonds issued to finance the project; and the cost of other items, including any indemnity and surety bonds and premiums on insurance, legal fees, fees and expenses of trustees, depositories, financial advisors, and paying agents for the bonds issued as the issuer considers necessary. (§ 1 ch 186 SLA 1970; am § 32 ch 168 SLA 1978)

Effect of amendment. — The 1978 amendment added subsection (c).

Sec. 46.07.050. Operation of facilities. (a) It is the responsibility of the village governing body to maintain and operate the safe water and hygienic sewage disposal facility, and upon completion of the facility the commissioner shall execute the necessary transfers of title to vest complete ownership of the facility in the governing body. The commissioner may not construct a facility unless he first receives satisfactory assurances from the village governing body that it will, upon completion of a facility, accept ownership and responsibility for the operation and maintenance of the facility.

(b) Whenever the commissioner determines that the village governing body does not have sufficient financial resources to operate and maintain the facility, the commissioner may make grants to the governing body in amounts which, when combined with other financial assistance available to it, will enable the governing body to operate and maintain the facility.

(c) When necessary, the commissioner may require the creation of a nonprofit corporation in the village and shall contract with this corporation in order to carry out the purpose of this chapter. The contract shall provide that when an unincorporated community, which for purposes of this chapter is under contract to the state, subsequently is incorporated, then the contract terminates at the time of incorporation and the governing body of the newly incorporated city assumes the powers and duties set out in this chapter for the governing bodies of other incorporated cities. (§ 1 ch 186 SLA 1970)

Sec. 46.07.060. Educational and informational program. The commissioner shall conduct, in each village where there is located a safe water and hygienic sewage disposal facility, an appropriate educational and informational program designed to familiarize the residents of the village as to the health advantages to be achieved by the utilization of the facility. (§ 1 ch 186 SLA 1970)

Sec. 46.07.070. Economy of administration. In order to prevent duplication of effort and to promote economy of administration, the commissioner shall, to the maximum extent feasible, utilize the facilities of appropriate public agencies in the administration of the provisions of this chapter. (§ 1 ch 186 SLA 1970)

Sec. 46.07.080. Definitions. In this chapter

(1) "commissioner" means the commissioner of environmental conservation;

(2) "village" means an unincorporated community which has between 25 and 600 people residing within a two-mile radius, or a second class city. (§ 1 ch 186 SLA 1970; am § 6 ch 104 SLA 1971; am § 53 ch 53 SLA 1973; am § 28 ch 208 SLA 1975)

Chapter 10. Pollution as Nuisance.

Section

10 — 20. [Repealed]

Secs. 46.10.010 — 46.10.020.

Repealed by § 4 ch 120 SLA 1971.

Editor's notes. — The repealed chapter derived from §§ 40-9-2, 40-9-3, ACLA 1949.

Section 5, ch. 120, SLA 1971, provides: "All litigation, hearings, investigations and other proceedings pending under any law amended or functions which may be transferred by this Act, continue in effect and may be continued and completed notwithstanding any such transfer or amendment provided for in this Act. Certificates, orders, rules or regulations issued or filed under authority of a law amended by this Act or functions which

may be transferred by this Act, remain in effect for the term issued, unless or until revoked, vacated, or otherwise modified under the provisions of this Act. All contracts or other obligations created by any law amended by this Act or by virtue of functions which may be transferred by this Act, and in effect on July 1, 1971, remain in effect unless or until revoked, or modified under the provisions of this Act."

Legislative history reports. — For report on ch. 120, SLA 1971 (SB 75 am 11), see 1971 House Journal, p. 1016.

Chapter 11. Conservation of Energy and Materials.

Section

- 10. Thermal and lighting energy standards for public buildings
- 20. Training of public building maintenance personnel
- 30. Energy audits

Section

- 40. Applicability of thermal and lighting energy standards to private buildings
- 50. Financing of energy efficient homes and buildings

§ 37.05.290

§ 37.05.300

PUBLIC FINANCE

§ 37.05.315

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Sec. 37.05.300. Interpretation of chapter. This chapter shall be construed as supplemental to all other state laws not in conflict with it. If a section or part of a section of this chapter is in conflict with federal requirements for a program for which federal grant-in-aid funds are available, the section or part to the extent of the conflict is inoperative. (§ 1 art VIII ch 82 SLA 1955; am § 18 ch 186 SLA 1957)

Editor's notes. — For applicability of the chapter to the University of Alaska, see notes following chapter heading.

Sec. 37.05.305. Applicability to University of Alaska. The commissioner of administration may delegate the performance of the functions under this chapter as they relate to the university to the Board of Regents of the University of Alaska and set out the criteria and guidelines which shall be followed. The commissioner shall direct necessary stipulations and exercise monitoring responsibility for conformance through the Board of Regents of the University of Alaska. (§ 5 ch 45 SLA 1977)

Legislative history reports. — For (HCSSB 261), see 1977 House Journal, p. letter of intent on ch. 46, SLA 1977 1019.

Sec. 37.05.310. Fiscal year. The fiscal year of the state begins on July 1 of each year and ends at midnight on the following June 30. The accounts of the Department of Administration, the Department of Revenue, and all other state officers whose accounts are in any way connected with the treasury shall be kept, and all duties performed with reference to the beginning and ending of the fiscal year. (§ 12-4-1 ACLA 1949; am § 2 art VI ch 82 SLA 1955)

Revisor's notes. — Section 12-4-1 and § 2, ch. 24, SLA 1953 re-enacted ACLA 1949 was repealed and re-enacted § 12-4-1 ACLA 1949 as it appeared in by § 30, ch. 133, SLA 1951. Section 1, ch. ACLA 1949. 24, SLA 1953 repealed ch. 133, SLA 1951

Sec. 37.05.315. Grants to municipalities. (a) When an amount is appropriated or allocated as a grant to a municipality, the Department of Administration shall promptly notify the municipality of the availability of the grant. When the Department of Administration receives an agreement executed by the municipality which provides that the municipality (1) will spend the grant for the purposes specified in the appropriation or allocation; (2) will allow, on request, an audit by the state of the uses made of the grant; and (3) assures that, to the extent consistent with the purpose of the appropriation or allocation, the facilities and services provided with the grant will be available for the use of the general public, the Department of Administration shall pay the grant directly to the municipality. The agreement executed by a

municipality under this section shall be on a form furnished by the Department of Administration and shall be executed within 60 days after the effective date of the appropriation or allocation.

(b) An appropriation or allocation for a grant to a municipality for construction of a public facility lapses if substantial, ongoing work on the project has not begun within five years after the effective date of the appropriation or allocation.

(c) In accepting a grant of money for construction of a public facility, a municipality covenants with the state that it will operate and maintain the facility for the practical life of the facility and that the municipality will not look to the state to operate or maintain the facility or pay for its operation or maintenance. This requirement does not apply to a grant of money for repair or improvement of an existing facility operated or maintained by the state at the time the grant is accepted if the repair or improvement for which the grant is made will not substantially increase the operating or maintenance costs to the state.

(d) Not less than 20 percent of a grant shall be paid to a municipality within 10 days of the effective date of the agreement under (a) of this section. The remainder of the grant shall be paid either in monthly installments equal to the amount of grant money the municipality expended in the previous month or in a lump sum as determined by the Department of Administration. (§ 1 ch 156 SLA 1980; am § 1 ch 4 SLA 1982)

Effect of amendments. — The 1982 amendment in subsection (a), substituted "amount is appropriated or allocated" for "appropriation is made" in the first sentence, inserted "or allocation" in items (1) and (3) in the second sentence, and added "and shall be executed within 60 days after the effective date of the appropriation or allocation" to the end of the third sentence; redesignated the former fourth and fifth sentences of subsection (a) as subsection (d); inserted "or allocation" in two places in subsection (b); substituted "a" for "each" preceding "municipality covenants" and

"the practical life of the facility and that the municipality" for "its practical life and that it" in subsection (c); added the second sentence of subsection (c); deleted the provisions of former subsections (d), (f), and (g), which may now be found in AS 37.05.316, 37.05.317, and 37.05.318, respectively; and in present subsection (d), added "under (a) of this section" to the end of the first sentence. The substance of the provisions of former subsection (e) may now be found at the end of the third sentence of subsection (a).

Sec. 37.05.316. Grants to named recipients. When an amount is appropriated or allocated to a department as a grant for a named recipient which is not a municipality, the department to which the appropriation or allocation is made shall promptly notify the named recipient of the availability of the grant and request the named recipient to submit a proposal to provide the goods or services specified in the appropriation act, or both, for which the appropriation or allocation is made. At the same time, the department may issue a request for proposals from other qualified persons to provide the same goods or services, or both, in the same area. The department shall contract with

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Sec. 37. 37.05.315 meanings



Official Business

Alaska State Legislature

Senate

Pouch V
State Capitol
Juneau, Alaska 99811

Mayor Lamont Albertson
City of Aniak
P.O. Box 43
Aniak, Alaska 99557

March 7, 1985

Dear Lamont:

Thank you for a copy of your letter concerning Senate Bill 47 and the Village Safewater Program (VSW).

I concur with your positive comments about the VSW program and workers. Many communities like Aniak receive municipal grants for a variety of programs including VSW. The main point is that each community decides how they wish to expend the funds and the scope of the work.

In your case, you decided to utilize, completely, the VSW program. In other cases, communities have decided private engineers were better suited to meet their needs; communities have used both state VSW personnel and private engineers; and some communities have utilized all locally available labor resources.

The common thread in all cases was that each community decided how to expend the funds. Local control dictated when and how the funds were expended. I believe funding through the municipal grant program is the proper avenue to ensure maximum local control.

Again, thank you for writing.

Sincerely,

A handwritten signature in cursive script, appearing to read "Frank R. Ferguson".

Frank R. Ferguson
Alaska State Senator

cc: Senator Sackett
Village Safewater Program
House and Senate Community and Regional Affairs Committees
House and Senate Labor and Commerce Committees
FRF'ldn

City of Aniak

P.O. Box 43

Aniak, Alaska 99557

Phone (907) 675-4481

February 15, 1985

The Honorable Albert P. Adams, Chairman
HOUSE FINANCE COMMITTEE

The Honorable Jan Paiks, Co-Chairman
The Honorable John C. Sackett, Co-Chairman
SENATE FINANCE COMMITTEE

Re: VILLAGE SAFEWATER PROGRAM
Senate Bill 47

The Village Safewater Program in Aniak is one that should be told around the State. The goal was to protect our groundwater aquifer from contamination by constructing a 1.7 million dollar community sewer system. This in itself is not an easy task. However, because of the program's staff engineers, and their vast experience and unique rural abilities, the program became the backbone of our successful force account construction program.

Village Safewater provided the careful planning at the beginning of the program that helped to decide what sanitation facilities were feasible and would best serve the community and not over-tax the community's maintenance ability. They then assisted us in determining our force account ability and installing a construction program. This provided local jobs for over forty young men and women, equipment and tools that have remained in our community, payrolls that have been spent in our community, an intense local working knowledge of our sewer system, and sensitivity to the purpose of sanitation and environmental protection. Our crew foremen have become the maintenance operators. We had such faith in their program, that the City of Aniak forwarded a \$500,000 direct municipal sewer grant back to the Village Safewater Program.

The technical assistance provided by Village Safewater is not a service that will limit the communities and what they can do, but enhance their own ability to serve and do for themselves. Aniak is in a position where their assistance is no longer required. But we are a larger bush community and have gone through the Village Safewater Program. Many communities need their technical assistance and guidance.

Albert P. Adams
Jan Faiks
John C. Sackett

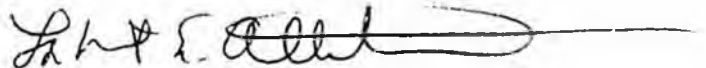
- 2 -

February 15, 1985

In the wake of declining oil revenues and budget cuts, it would be important to keep rural community sanitation improvement capital construction allocations within the Department of Environmental Conservation Village Safewater Program. It is also imperative that municipalities included in Senate Bill No. 47 be capable of planning and constructing the sewer and water projects.

I thank you for your attention and the support you have demonstrated for the Village Safewater Program over the years. Aniak has benefitted greatly under this Program.

Very truly yours,



LaMont E. Albertson
Mayor

LEA/p

cc: Village Safewater Program
House and Senate Community and Regional Affairs Committee
House and Senate Labor and Commerce Committees

City of Aniak

P.O. Box 43

Aniak, Alaska 99557

Phone (907) 675-4481

January 22, 1985

STATE OF ALASKA
Municipal Grants Program
Department of Administration
Pouch C, M/S 0208
Juneau, Alaska 99811

Attn: - Shirley Peters
Accounting Technician

Dear Shirley:

Please find attached the "final" report for the Aniak Municipal Grants received over the past four years. A general project description of the use of the funds is as follows:

1. Fire Trucks: Grant #5-206, Fire Truck, \$100,000.00, was used to purchase a new combination pumper tanker-fire truck from Becker Fire Equipment Company for \$78,834.00, and a used 1,200 gallon water truck from Gary's Truck Sales for \$6,000.00 and flown to Aniak by Maury Carlson in November 1981 for \$13,500.00. The balance was used for expediting by Jeff Macktaz in Anchorage and City administration.
2. City Subdivision Electric Lines: Grant #7-212, Housing Lines, \$30,000.00, was used to construct 1,600 feet of overhead residential electric lines by Aniak Light and Power for the Aniak Residential Subdivision #1. The grant was previously closed in a letter to you dated April 25, 1984 from John H. Hale, former City Manager. The project was completed in October of 1981.
3. White Alice and Morgan's Road: Grants #8-251, Morgan's Road Construction for \$100,000.00; #8-250, High School Access Road for \$100,000.00; #8-441, Morgan's Road Phase II for \$140,000.00; #8-795, Morgan's Road Construction for \$85,000.00; and #8-718, Road Improvements for \$50,000.00 were used to construct a new 860 foot high school access road - also known as White Alice Road - to the new secondary school and vocational school; provide a new intersection, a 2,500 LF realignment and gravel fill with culverts for Morgan's Road; and provide widening to Airport Boulevard and a gravel overlay to townsite roads. The grants were expended obtaining equipment, transportation charges and maintenance, fuel, labor, engineering, obtaining and developing gravel sites, surveying and city administration.

4. Flood Dike and Drainage Improvements: Grant #8-439, Emergency Dike Extension for \$200,000.00 was used to purchase equipment; improve drainage along roadways for floodwater conveyance, repair the dike from normal deterioration that has occurred over the past 15 years and stockpiling material for emergency flood response. Design plans and easement acquisition for the dike extensions down Morgan's Road and the townsite were also performed. This grant was coordinated with a feasibility study through the Department of Transportation. Preparedness for emergency flood work and response was completed in October of 1983.
5. Septic Tanks and Drainfields: Grant #7-527, Septic Tanks and Drainfields for \$175,000.00 was used for a 900 foot 8" ductile iron community sewer line, 5,000 gallon septic and drainfield for the Multi-purpose Community Building and Skin Tanning and Food Canning Facility as described in a letter dated August 3, 1982 from John Hale, former City Manager. The grant was originally for on-site sewers for public housing. However, the legislation was not passed until the following year and the housing project had been completed. Additionally, the grant was used to assist five individuals to install on-site sewers with deep trench drainfields as part of the Village Safewater Program, one in the original housing project. The work was completed in September of 1984.
6. City Maintenance Shop: Grant #7-778 Maintenance Shop and Equipment for \$200,000.00 was used to construct a 60 foot by 40 foot maintenance shop located at the intersection of Airport Boulevard and Morgan's Road on Airport Lease Lot 3B Block 20. The facility is constructed with a 12 inch double 2" x 4" wall. It was first utilized for maintenance on heavy equipment in June of 1984, and officially occupied in October of 1984. Tools for diesel maintenance and in-house air and fuel systems were also purchased.
7. Multi-purpose Community Building: Grants #7-406 Day Care Center for \$250,000.00 and #7-85-023 Multi-purpose Community Building for \$500,000.00 was used to match other funds from Federal Housing and Urban Development grants with the Traditional Council, Municipal Aid, a

January 22, 1985

Library Construction Grant, and State Rural Development Assistance to build one facility housing a community hall, day care, laundromat, library and museum. The facility is 9,400 square feet and utilizes 10" walls and R=60 roof. The Community Hall was first utilized October 30, 1984. The Day Care was opened October 20, 1984.

8. Village Safewater Community Sewer: Grant #4-710 Community Sewer System for \$500,000.00 was used to match a 1.2 million Village Safewater grant from State Environmental Conservation to sewer the Aniak Townsite. Two lift stations, a lagoon and three miles of pipe have been installed to date for 36 service connections. The remaining townsite from 4th Street to 6th Avenue will be sewered during June and July of 1985. Sewage first flowed in May of 1984. \$329,000.00 remains in account to complete the project.

The following is a summary of grants received over the past four years:

CITY OF ANIAK MUNICIPAL GRANTS

1981

(Accepted August 24, 1981)

Grant Number

5-206	Fire Truck	\$100,000.00
7-212	Housing Lines	30,000.00
8-250	High School Access Road	100,000.00
8-251	Morgan's Road	100,000.00

1982

(Accepted August 3, 1982)

7-406	Day Care Center	\$250,000.00
7-527	Septic Tanks & Drainfields	175,000.00
8-439	Emergency Dike Extension	200,000.00
8-441	Morgan's Road Phase II	140,000.00

Shirley Peters
Municipal Grants Program

- 4 -

January 22, 1985

1983
(Accepted September 14, 1983)

4-710	Community Sewer System	\$500,000.00
7-778	Maintenance Shop & Equipment	200,000.00
8-718	Road Improvements	50,000.00
8-795	Morgan's Road Construction	85,000.00

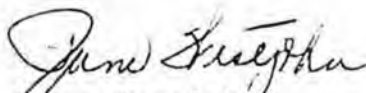
1984
(Accepted May 16, 1984)

7-85-023	Multi-purpose Building	\$500,000.00
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All grants have been received and spent in their entirety except 4-710, the Community Sewer System Grant. The final reports will follow.

Please call if more information is required. Thank you for your continued support and assistance.

Sincerely,


Pam Westjohn
City Manager

TESTIMONY BEFORE THE SENATE COMMUNITY AND REGIONAL AFFAIRS COMMITTEE ON SB 47
GIVEN BY GARY HAYDEN DIRECTOR, FACILITY CONSTRUCTION AND OPERATION DIVISION

DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FEBRUARY 21, 1985

THANK YOU FOR THE OPPORTUNITY TO TESTIFY ON SB 47, WHICH IS A WATER AND SEWER BILL. THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION ADMINISTERS TWO WATER AND SEWER GRANT PROGRAMS. THE FIRST IS THE MUNICIPAL MATCHING GRANTS PROGRAM AND THE SECOND IS VILLAGE SAFE WATER. THEREFORE, SEVERAL SECTIONS OF SB 47 ARE OF PARTICULAR INTEREST.

WHAT FOLLOWS IS AN EXPLANATION OF SECTION 2 OF SB 47 WHICH MAKES \$50 MILLION IN MATCHING GRANTS AVAILABLE TO MUNICIPALITIES THROUGH ADEC. IN JULY 1984, THE DEPARTMENT CONTACTED ALL FIRST AND SECOND CLASS CITIES AS TO WHAT PROJECTS THEY WOULD LIKE TO HAVE FUNDED THROUGH THE MUNICIPAL MATCHING GRANTS PROGRAM. WE ALSO ASKED FOR THEIR COMMENTS ON A CRITERIA SYSTEM WHICH WOULD ALLOW US TO RANK COMMUNITY NEEDS FROM A STATEWIDE PERSPECTIVE. WE RECEIVED APPROXIMATELY \$115.5 MILLION IN NEEDS FROM FORTY-ONE COMMUNITIES FOR 148 PROJECTS.

THE PROJECTS WERE THEN SCORED AND RANKED TO GIVE A STATEWIDE PERSPECTIVE. THE LIST WILL BE WORKED FROM THE TOP DOWN UNTIL ALL FUNDS ARE SPENT. THE GOVERNOR'S CAPITAL BUDGET, AS DESCRIBED IN HB 60, PROVIDED \$10,106,500 FOR THE MUNICIPAL GRANTS PROGRAM. WITH THE DECLINE IN OIL REVENUES, WE FEEL THIS AMOUNT IS MORE APPROPRIATE. REGARDLESS OF THE AMOUNT APPROPRIATED, WE FEEL THE MUNICIPAL GRANTS PROGRAM STRETCHES STATE DOLLARS FURTHER BY REQUIRING 50% LOCAL MATCH AND PROVIDES EXCELLENT ACCOUNTABILITY FOR USE OF THESE FUNDS.

ALSO, OF PARTICULAR INTEREST ARE SECTIONS 3 AND 4 OF SB 47 WHICH DIRECTLY IMPACT OUR VILLAGE SAFE WATER PROGRAM. SECTION 3 PROVIDES \$16,000,000 IN GRANTS TO 18 RURAL COMMUNITIES LISTED AND SECTION 4 MAKES THESE FUNDS AVAILABLE TO THE COMMUNITIES AS DIRECT MUNICIPAL GRANTS. LET ME EXPLAIN HOW THESE COMMUNITIES WERE SELECTED. LAST AUGUST THE VILLAGE SAFE WATER PROGRAM BEGAN WORKING WITH EACH OF THE 12 REGIONAL HEALTH CORPORATIONS TO DETERMINE WHICH COMMUNITIES WERE MOST IN NEED OF SANITATION IMPROVEMENTS. SEVERAL CRITERIA, INCLUDING PUBLIC HEALTH, WERE USED AND THE HEALTH CORPORATIONS SUBMITTED THE PROJECTS OF 18 COMMUNITIES TO THE VILLAGE SAFE WATER PROGRAM. VSW STAFF THEN REVIEWED APPROPRIATE BACKGROUND DATA AND DEVELOPED A PRIORITY LIST WITH THE MOST NEEDY VILLAGES AT THE TOP. ROUGH COST ESTIMATES WERE THEN PREPARED BY VILLAGE SAFE WATER ENGINEERS. THIS LIST, DEVELOPED BY THE DEPARTMENT WORKING IN CONCERT WITH THE NATIVE REGIONAL HEALTH CORPORATIONS, ARE THOSE VILLAGES NAMED IN SB 47.

HERE'S HOW THE VILLAGE SAFE WATER PROGRAM WOULD ACCOMPLISH THE TASK OF SUCCESSFULLY IMPLEMENTING THE PROJECTS IN THE 18 COMMUNITIES IDENTIFIED. THE FIRST STEP WOULD BE TO DO ENGINEERING FEASIBILITY STUDIES SO THAT MORE PRECISE ESTIMATES OF CAPITAL AND OPERATION AND MAINTENANCE COSTS COULD BE DEVELOPED AND PRESENTED TO EACH VILLAGE FOR CONSIDERATION. STEP II IS DETAILED ENGINEERING DESIGN, STEP III IS CONSTRUCTION OF THE RECOMMENDED FACILITIES EITHER BY FORCE ACCOUNT OR CONTRACT, DEPENDING UPON LOCAL PREFERENCE. MOST OF THE ENGINEERING WORK WOULD BE DONE IN-HOUSE BY OUR VSW STAFF. THIS "HANDS-ON, OVER THE SHOULDER" ASSISTANCE CONTINUES LONG AFTER THE FACILITY IS CONSTRUCTED.

IT IS THIS KIND OF ON-GOING TECHNICAL ASSISTANCE DURING THE LIFE OF A PROJECT WHICH SETS THE VILLAGE SAFE WATER PROGRAM APART. IN ADDITION, A COMPLETE AND ACCURATE ACCOUNTING OF ALL PROJECT RELATED EXPENDITURES IS

MAINTAINED. ACCOUNTABILITY FOR STATE FUNDS IS THE BOTTOM LINE. ONCE THE FACILITY IS BUILT, THE VILLAGE SAFE WATER PROGRAM ALSO PROVIDES OPERATION AND MAINTENANCE HELP TO THE COMMUNITY.

HOWEVER, THE APPROACH JUST OUTLINED ABOVE MAY NOT BE REALIZED BECAUSE SECTION 4 OF SB 47 DIRECTS THAT THESE STATE FUNDS BE DISPERSED IN ACCORDANCE WITH AS 37.05 COMMONLY REFERRED TO AS DIRECT MUNICIPAL GRANTS. THIS METHOD OF FUNDING IS NOT APPROPRIATE BECAUSE THE VILLAGES IDENTIFIED IN SB 47 THROUGH OUR PRIORITIZATION PROCESS NEED MORE THAN FINANCIAL ASSISTANCE... THEY NEED THE ON-GOING TECHNICAL ASSISTANCE AND ADVICE THAT THE VILLAGE SAFE WATER PROGRAM CAN PROVIDE.

I WOULD ALSO LIKE TO CALL YOUR ATTENTION TO HB 60, THE GOVERNOR'S CAPITAL AND OPERATING BUDGET REQUEST FOR FY 86. PAGE 66 LISTS THE FIRST EIGHT COMMUNITIES ON THE PRIORITY LIST AND REQUESTS \$4,000,000 THROUGH VILLAGE SAFE WATER TO DO THE WORK. WE FEEL THAT WITH OIL REVENUES ON THE DECLINE, HB 60'S APPROACH IS MORE APPROPRIATE THAN SB 47.

IN SUMMARY, WE RECOMMEND THAT SECTION 4 OF SB 47 BE DELETED TO ENABLE THE PROJECTS TO BE ADMINISTERED BY THE VILLAGE SAFE WATER PROGRAM AND THAT THE NUMBER OF PROJECTS BE REDUCED TO MAKE IT MORE CONSISTANT WITH THE CURRENT REVENUE PROJECTIONS AND THE GOVERNOR'S PROPOSED BUDGET.

THANK YOU FOR THE OPPORTUNITY TO TESTIFY, I WOULD BE HAPPY TO ANSWER ANY QUESTIONS THAT YOU MIGHT HAVE ON THE VILLAGE SAFE WATER PROGRAM OR THE MUNICIPAL GRANTS PROGRAM.



**EKLUTNA
WATER PROJECT**

**Municipality of Anchorage
Water and Wastewater Utility**

EKLUTNA WATER PROJECT

LEGISLATIVE SUMMARY 1985

James M. Montgomery, Consulting Engineers, Inc.

In association with

QUADRA Engineering, Inc.

Ott Water Engineers, Inc.

Sverdrup/SPCM

Municipality of Anchorage



POUCH 6-650
ANCHORAGE, ALASKA 99502-0650
(907) 264-4431

TONY KNOWLES
MAYOR

OFFICE OF THE MAYOR

February 8, 1985

Open Letter to Governor Sheffield and
All Members of the Fourteenth Alaska Legislature:

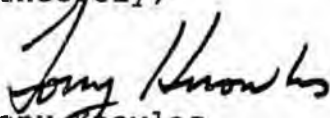
The Eklutna Water Project must remain a high priority item in the FY 1986 Capital Budget. It is not often that a single issue can have such a profound impact on nearly half the population of the state. This project is essential to support continuing growth and development throughout the Municipality of Anchorage. The health and safety of all municipal residents depend upon an adequate water supply.

Anchorage presently uses all the water available. With the ever growing population creating an increase in the demand for water, shortfalls, which already occur on occasion, will become more frequent, reaching critical proportions by 1988. Expansion of the Ship Creek resource, currently underway, will provide only a short-term solution. A long-term, dependable water supply is essential to assure the well-being of the entire Anchorage community. The Eklutna Water Project is the most feasible means to provide that water supply.

The Anchorage Water and Wastewater Utility is requesting an appropriation from the State Legislature of \$50 million from the FY 1986 budget for construction of the Eklutna Water Project. These funds will be used for construction of two major project elements: the 1-1/2 mile long tunnel which will tap the Eklutna Lake resource, and the Eklutna Water Treatment Facility. Both of these facilities require long construction periods, and must be begun on schedule early in 1986 so that the entire project can be on line in 1988. Any delay in funding will alter the project schedule, resulting in increased costs, and critical water shortages (see Figure 3 in the attached Legislative Summary).

In view of the widespread potential benefits of the project and the serious consequences expected to be incurred if the project is delayed, it is recommended that the requested appropriation be made. This would allow the Eklutna Water Project to proceed on schedule to meet the needs of the present and future community of Anchorage.

Sincerely,


Tony Knowles
Mayor

LEGISLATIVE SUMMARY

This Legislative Summary briefly describes the Eklutna Water Project, a major water resource development project for Anchorage's future. Project facilities are described, and the schedule for their completion is depicted. Past project funding and future funding requirements are also outlined.

NEED FOR THE PROJECT

Anchorage's population is growing rapidly. As population increases, businesses and industry also are being developed. A growing community such as Anchorage has ever-increasing needs for facilities and resources. One of the most essential resources is water. In Anchorage, supply of this commodity is fast becoming a critical problem.

For planning purposes, population projections have been made for the Anchorage Bowl and the northern communities of Eagle River, Birchwood, Chugiak, Peters Creek, and Eklutna through the year 2025. The project team has estimated a service area population of about 449,000 in the year 2025. Of that total, 385,000 are expected to reside in the Anchorage Bowl and the remaining 64,000 are expected to live in the northern communities.

Based on the population projections and per capita water demands, future water requirements were estimated. These projections indicate that increased population will cause water demands in excess of the available supply by 1986. Water shortages have already occurred in Anchorage during times of peak demand, and will become increasingly common as development in Anchorage continues. By 1988, shortfalls are almost certain to occur, even with the expanded capacity of the Ship Creek Water Treatment Facility. That expanded capacity will not alleviate shortages during certain winter periods when Ship Creek discharges are low; nor will it provide sufficient supplies at times of peak demand during summer months. Therefore, a new water source must be obtained.

To meet Anchorage's water needs, over 28 potential supply sources, including increased conservation measures, have been examined in the past decade. The results of these studies have pointed to Eklutna Lake as the most feasible alternative;

therefore, development of that source by the Anchorage Water and Wastewater Utility was begun in 1982 as the Eklutna Water Project (EWP). In order to supply Anchorage's increasing needs, construction of this project must continue on schedule so that water can be delivered to Anchorage from Eklutna Lake by 1988.

Critical water shortages may actually occur earlier than anticipated. Since the population projections were developed for the EWP, the Anchorage population has increased faster than expected. In mid-1984, it had already reached the figure projected for 1987. While this may not reflect a long-term trend, it is substantially different from the short-term projections. Much of Anchorage's population increase is occurring in the northern communities where water supplies are meager. Demand for more water in these northern communities is expected before the EWP can be on line. Therefore, in 1985 water will be diverted from the Anchorage Bowl to Eagle River via the first segment of the EWP pipeline. This will alleviate shortages in Eagle River but shortfalls throughout the rest of the system will become more imminent as a result.

DESCRIPTION OF THE PROJECT

The Eklutna Water Project will divert water from the Alaska Power Administration's (APA) existing tunnel which connects Eklutna Lake with the Eklutna Power Plant. From the point of connection, water will flow by gravity in a new tunnel and a buried pipeline down the Eklutna River canyon to a water treatment facility. From the treatment facility it will flow by gravity in a 23-mile-long buried pipeline through the northern communities to the distribution system near the expanded Ship Creek Water Treatment Facility (SCWTF). Energy will be recovered from the flowing water at each treatment facility location. This system will supply water to the Anchorage service area, from Eklutna Village to Potter Marsh in South Anchorage. The maximum day design flow in the year 2025 is 70 mgd and the average flow during that year is 41 mgd. The selected alignment and location of facilities are depicted in Figure 1.

Diversion of Eklutna Lake water involves tapping the existing 9-foot-diameter tunnel to the Eklutna Power Plant (EPP). The new 6-foot-diameter tunnel will connect this existing tunnel with a new pipeline located in the Eklutna River canyon below the dam at the downstream end of Eklutna Lake. The new tunnel will be about 8,000 feet in length. The EPP will be deprived of water for approximately two months during

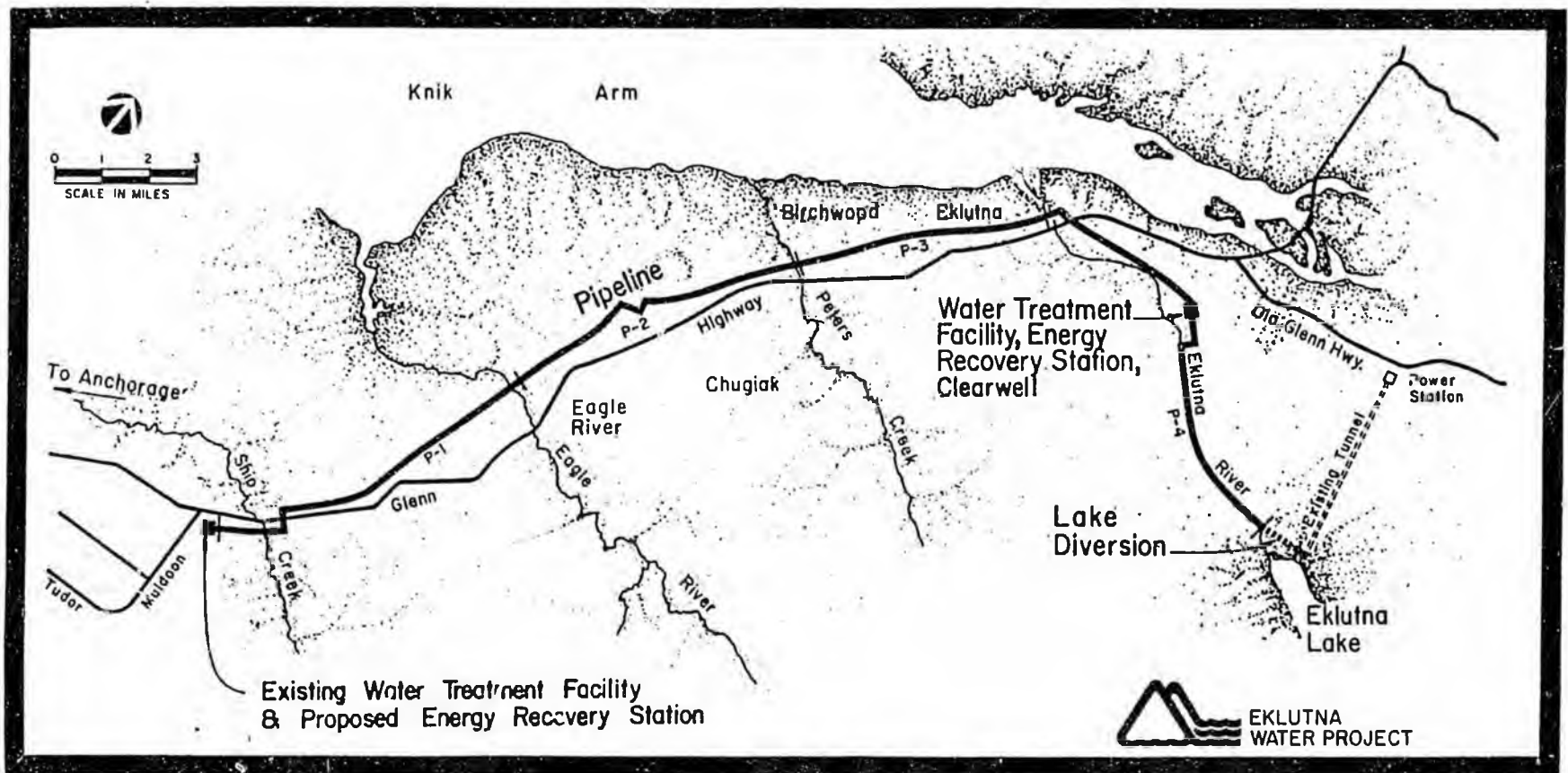


Figure 1

connection of the new tunnel. The top of a valve shaft near the connection of the two tunnels will be the only visible evidence of a diversion for the EWP. The EWP will not impact lake levels, because all water used by EWP will be taken from that which is normally diverted to the EPP. The EWP diversion will decrease the amount of water supplied to EPP (and therefore energy output) by up to 21 percent by the year 2025. However, about 38 percent of that energy will be recovered by EWP energy recovery stations. The Municipality of Anchorage Water and Wastewater Utility has reached an agreement with the Alaska Power Administration for an equitable method of replacing energy taken from the EPP by the EWP.

In 1984, the U.S. Congress passed and President Reagan signed an amendment to the 1950 "Eklutna Project Act" to allow part of the Eklutna Lake water to be used for public water supply. Application has been made to the Alaska Department of Natural Resources, Division of Land and Water Management, for appropriation of state water rights from Eklutna Lake.

Downstream of the diversion tunnel, water will be conveyed in a buried 60- and 54-inch pipeline along the Eklutna River canyon floor (pipeline segment P-4) to an energy recovery station at the Eklutna Water Treatment Facility (EWTF) which will be located on a natural bench high above the river bed. Generating capacity of this station will be approximately 750 kW. It is estimated that in the year 2025, it will produce almost five million kWh per year with water diverted from Eklutna Lake.

The Eklutna Water Treatment Facility will be constructed in two phases. The first phase will treat 35 million gallons per day (mgd) using flocculation, sedimentation, filtration, and disinfection. Construction of Phase 1 is scheduled for completion in mid-1988. The plant will be expanded in a second phase to treat 71 mgd when the additional water is needed.

A 15-million-gallon treated water reservoir (clearwell) will be constructed just downstream of the EWTF. The purpose of the reservoir is to accommodate the normal diurnal fluctuations in water demand while maintaining a relatively constant flow through the EWTF and to provide emergency storage.

Pipeline segments P-3 and P-2 extend from the clearwell to Eagle River, paralleling the Glenn Highway, the APA powerline easement, and residential streets along most of the route. These segments of the buried pipeline will be 54 inches in diameter and will deliver water to northern communities along the route via seven turnouts.

Pipeline segment P-1, the first to be constructed, extends generally parallel to Glenn Highway and the APA powerline easement, from the vicinity of the SCWTF to Artillery Road near Eagle River. This pipeline segment varies between 54 and 48 inches in diameter, decreasing closer to the SCWTF. A 24-inch pipeline has been constructed along Artillery Road to connect with the existing Eagle River supply system. Construction of pipeline segment P-1 is currently more than half complete.

A booster pump station/energy recovery station is under construction upstream of the SCWTF. Until the entire pipeline is completed and supplying water from Eklutna Lake, this station will pump as much as 4 mgd from the SCWTF to Eagle River. That community will receive water through the P-1 pipeline segment in late summer of 1985. The booster pump portion will be constructed as part of the P-1 pipeline contract. The facility has been designed so it can be converted easily to an energy recovery station when the entire project is completed. The capacity of this generating station will be about 500 kW.

Permits, approvals, and/or letters of non-objection have been obtained from all concerned federal, state, and municipal agencies for their respective areas of jurisdiction for the project as a whole. Contact with agencies is ongoing as project plans develop.

Most temporary construction permits and permanent easements have been acquired along the pipeline alignment. Affected property owners include: Alaska Division of Parks, Fort Richardson Military Reservation, Alaska Department of Transportation and Public Facilities, Federal Highway Administration, Alaska Railroad, Native corporations, and approximately 60 private property owners. Permits and/or easements will be obtained from private owners along P-2 and P-3 by late February 1985. Negotiations for easements are nearly complete with other major landholders, permission to overlap utility easements has been obtained.

PROJECT TEAM

The entire project is overseen by Program Management Consultant, James M. Montgomery, Consulting Engineers, in association with Ott Water Engineers, QUADRA Engineering, and Sverdrup/SPCM.

This management team has contracted with eight primary consultants, each with subconsultants, to perform final design for individual project elements. The prime consultants are: lake diversion - Hart Crowser & Associates; P-4 pipeline - Kramer,

Chin & Mayo; energy recovery stations - R.W. Beck & Associates; EWTF - Camp Dresser and McKee; clearwell - ABAM Consulting Engineers; P-3 pipeline - URS Engineers; P-2 pipeline - DOWL Engineers; and P-1 pipeline - Tryck, Nyman & Hayes.

The construction contractors for pipeline segment P-1 are Coluccio Construction Company and Commonwealth Electric Company. Valves were supplied by Unit Process Company. The P-1 pipe was supplied by Ameron.

PROJECT SCHEDULE

Design and construction of each element of the EWP has been carefully scheduled to allow completion of the facilities and delivery of water to Anchorage consumers in 1988. Figure 2 shows the design and construction schedules for each of the project components.

FUTURE PROJECT ACTIVITIES

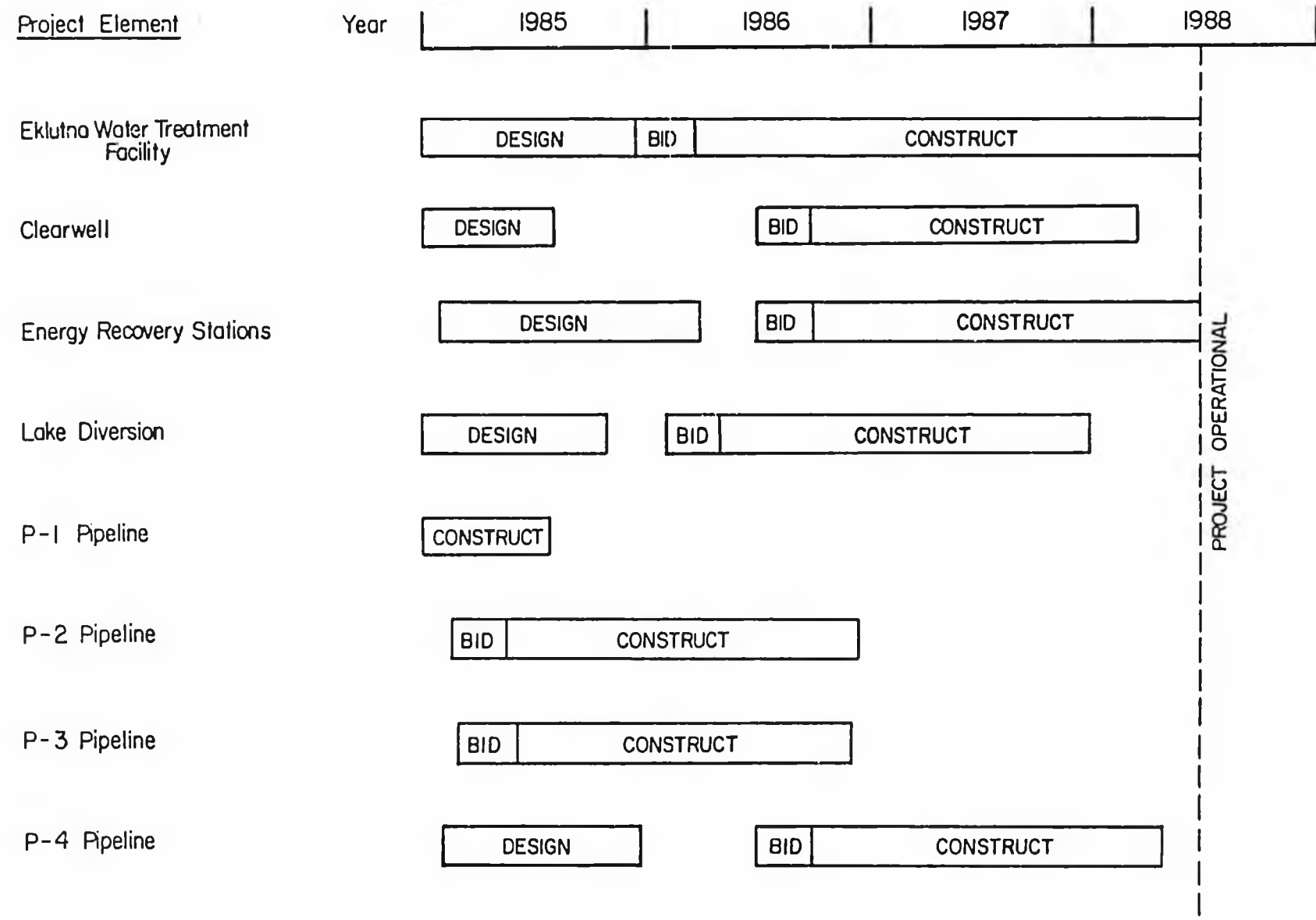
Pipeline segment P-1 construction will resume later this year, as soon as frost conditions permit. That segment is scheduled to be completed by August 1985 at which time water will be supplied to the Eagle River community.

Advertisement for bids for pipeline segments P-2 and P-3 will take place in February and March 1985. Both elements will be built (possibly several sections simultaneously) during the construction seasons of 1985 and 1986.

Final designs will be completed by the end of 1985 for the following project components: lake diversion; P-4 pipeline; EWTF; and the clearwell. Final design of the energy recovery stations will be completed early in 1986. Advertisement and award of construction contracts will occur after funds are made available for specific project elements.

If the EWP is to be on line by mid-1988 the EWTF and lake diversion will need to be bid in the winter of 1985-86. The water treatment plant is a large complex facility that has many mechanical components with long lead times. The size and complexity of this facility would require a two-year construction period even if equipment lead times were not long. The lake diversion tap to the existing APA tunnel can

EKLUTNA WATER PROJECT SCHEDULE



PROJECT OPERATIONAL

Figure 2

economically only be made when the lake level is low (May and June) and when the fish hatchery on the APA power plant tailrace does not require large flows through the power plant (also May and June). Preparatory time will be required to get ready for a tap in May and June of 1987. Completion of that element after the tap will take several months.

Easement and permit acquisition will be completed in early 1985, and contact with regulatory agencies and the public will be ongoing as plans are finalized.

PROJECT FUNDING

Construction of the Eklutna Water Project will require a total expenditure of \$190 million, a \$30 million reduction from the figure of \$220 million originally estimated in late 1982.

Appropriations for the project have been received from the State Legislature, and continued support from that source will be required from the FY 1986 and 1987 budgets. In 1982, \$13.7 million were appropriated; \$22.5 million were appropriated in 1983; the \$34 million appropriation in 1984 brings the sum to date to approximately \$70 million. The additional \$50 million which has been requested in 1985 is essential to keep the project on schedule. These funds will be used for construction of the Eklutna Water Treatment Facility and the lake diversion. Without this appropriation, facility completion will be delayed, total project costs will increase, and water shortages may become acute.

In November 1983, public approval was received with over 75 percent favorable vote for the sale of \$55 million in bonds to help fund the project. These bonds will be sold on an as-needed basis. As a result of these bond sales, usage charges will increase by approximately 40 percent over present rates, or by about \$5.40 per household per month. Under Alaska Public Utilities Commission rules, the cost of bond service may not be charged to customers until water is actually supplied from the project; therefore, bond issue should be delayed as long as possible to avoid interest accrual. In addition, future customer charges will be minimized in direct proportion to the amount of legislative appropriations because no reimbursement must be made for contributed

capital. In order to completely finance the facilities, three quarters of the total project funds will be requested from the State Legislature, and one quarter of the funds will be obtained from the Municipality through bond sales.

Figure 3 depicts past project appropriations and future funding needs, as compared to project costs. All facility design has now been funded; future appropriations will principally finance construction. If sufficient funding is not obtained in 1985, the total project cost will increase, and completion of the project will be delayed until at least 1989, resulting in significant water shortages. If the project continues on schedule, the growing water demands of the Anchorage community will be met in 1988.



EKLUTNA WATER PROJECT

Funding Requirements vs Water Supply Schedule

