HB
98

COMMITTEE REPORT

HOUSE

2/4/81

(5)

FURTHER: FINANCE

Date: 2-12-1981

Mr. Speaker:

The Committee on COMMUNITY & REGIONAL AFFAIRS has had HB 98

"An Act making a special appropriation to the Kodiak Island Borough for wastewater collection and water supply projects; and providing for an effective date."

under consideration and (a majority of the committee) (the committee) reports it back with the following recommendations:

[ ] do pass [ ] do not pass

[ ] do pass with attached amendments(s)

[ ] replace with CS for _____ [ ] same title [ ] new title

and recommends _____

[ ] AND attaches a "Letter of Intent" [ ] New Fiscal Note

[ ] reports it back without recommendation

[ ] referred to the _____ Committee

MEMBERS SIGNING
DO PASS

MEMBERS HAVING
OTHER RECOMMENDATIONS:

CHAIRMAN

H 60 (Rev. 12/78)

5/10/81 - Req. Backup from Bharoff

Jim Dorn 2614

Dem Cowles

notified mtg 4/23/81

8:30 100 Capitol

Fed $ for Sewage Systems?

KODIAK ISLAND BOROUGH

ISLAND LAKE SEWER PROJECT

ESTIMATED CAPITAL COST $4,700,000

PROJECT COMPONENT BREAKDOWN (X 1000)

ENGR DESIGN	293.7
PROJECT INSPECTION / SURVEYING	293.7
CONSTRUCTION	2,937.5
CONTINGENCIES / MISCELLANEOUS	1,175.1

FUNDING OPTIONS (X 1000)

OPTION I	Present State Funding	Proposed State Funding
EPA	$3145.9	$3145.9
ADEC	714.4	787.7
LOCAL	839.4	766.4
	$4,700.0	$4,700.0

OPTION II		
ADEC	$1,965.8	$2948.7
LOCAL	2734.2	1751.3
	4700.0	4700.0

OPTION III		
LOCAL	4,700.0	$4,700.0

Kodiak Island Borough

Island Lake Water Project

Estimated Capital Cost $3,800,000

Project Component Breakdown

Engineering Design	280.1
Project Inspection / Surveying	280.1
Construction	2801.5
Contingencies / Miscellaneous	438.3
	$3,800.0

Funding Options

Option I	Present State Funding	Proposed State Funding
ADEC	$1,706.6	$2,559.9
Local	2,093.4	1,240.1
	$3,800.0	$3,800.0

Option II		
Local	$3,800.0	$3,800.0

THE FOLLOWING PAGES WERE TREATED AS
A UNIT IN THE ORIGINAL FILE.

Funding Information		Introduced: 2/4/81
General Fund	$8,500,000	Referred: Community & Regional
Other Funds	-0-	Affairs and Finance
	$8,500,000	

IN THE HOUSE BY ZHAROFF

HOUSE BILL NO. 98

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWELFTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act making a special appropriation to the Kodiak Island Borough for wastewater collection and water supply projects; and providing for an effective date."

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

* Section 1. The sum of $8,500,000 is appropriated from the general fund for payment as a grant to the Kodiak Island Borough for design and construction of wast water collection and domestic water supply systems for Service District No. 1 (Island Lake).

* Sec. 2. The appropriation made by this Act shall be disbursed in accordance with AS 37.05.315.

* Sec. 3. This Act takes effect immediately in accordance with AS 01.-10.070(c).

Service District No. 1
Wastewater Facility Plan and
Environmental Assessment
Kramer, Chin, & Mayo Inc
1980

1.6 INSTITUTIONAL RESPONSIBILITIES

The Kodiak Island Borough is the lead local agency responsible for design, construction, capital funding, operation, maintenance, and administration of the selected alternative. The borough has initiated steps to negotiate an intergovernmental agreement with the City of Kodiak for treatment of wastewater discharged to the municipal treatment plant.

1.7 CONCLUSIONS

Based on analysis of existing conditions, economic analysis, and environmental assessment, the following conclusions are made:

- Continuation of wastewater disposal methods presently utilized in most of the planning area is not acceptable because it presents serious potential for human health hazards, adversely effects water and air quality, aquatic fauna, and wetlands, and is not compatible with land use or recreation plans for the area.

- The use of onsite individual treatment systems on an area-wide basis is not acceptable due to natural characteristics of the study area.

- Alternative 2A is the most cost effective of the proposed facilities which complies with regional plans and regulatory wastewater discharge requirements.

- Alternative 2B has the largest degree of beneficial environmental impact of the proposed facilities.

- Development of Island and Dark Lakes, Naughton's Trailer Court, and along Mission Road requires installation of collector and/or interceptor sewers to alleviate water quality problems.

- The use of gravity sewers to serve the low density areas of Island and Dark Lakes is not technically or economically practical.

- Construction of a permanent primary plant at Mill Bay to serve the year 2000 needs of the Island Lake area would result in the lowest initial user charge for the entire district but would not meet current regional plans or federal discharge requirements.

- If Alternative 2A is implemented, the City of Kodiak treatment plant will reach its design population of 9500 by about year 1990.

1.8 RECOMMENDATIONS

Based on the conclusions cited above and in the subsequent chapters, the following recommendations are made:

- Alternative 2A is recommended for implementation because it is the most cost effective of the proposed facilities that meets regional plans and federal standards and has only slightly less positive environmental impact than the most beneficial, Alternative 2B.

- Recommended collection systems for the developed areas are: a) pressure sewers for low population density areas around Island or Dark Lakes; b) gravity sewers for high-density areas on Island Lake; c) gravity sewer, where possible, along outer Mission Road; or d) house pressure laterals to serve homes on outer Mission Road below gravity sewer.

- Federal, state, and local shares of the cost of interceptor and collection system facilities are estimated in Table 8.1. The borough's share of Alternative 2A is about $728,000 (September 1981 dollars). Action should be initiated to finance the local share with consideration given to revenue bonds, Farmers Home Administration bonds and grants, general obligation bonds, special improvement district bonds, and Housing and Urban Development block grants.

- If additional funding cannot be obtained and S.D. No. 1 residents cannot afford user charges for Alternative 2A then consideration should be given to implementing one of the local treatment options discussed in Appendix F. Since a permanent primary plant at Mill Bay does not comply with regional plans or federal standards the borough will have to obtain special approval from regulatory agencies in order to implement the local treatment option.

- The borough should establish a program for administering, operating, and maintaining the recommended facilities. Direct maintenance of the recommended system would require one maintenance person on a full-time basis. A well-equipped maintenance shop would also be required. Consideration should be given to developing an intergovernmental agreement with the City of Kodiak for these services.

- The borough must continue to work with the City of Kodiak to establish an equitable rate system for the use of the city's wastewater facilities.

- The following implementation schedule is recommended.

CHAPTER 2
INTRODUCTION

The Borough of Kodiak Island, Alaska, is presently faced with the likelihood of entering a phase of population growth for which it does not have adequate municipal facilities. Attempts to establish a Gulf of Alaska bottom fishing industry based in Kodiak are the primary stimuli for this growth. A large percentage of the anticipated population growth would occur in and adjacent to the City of Kodiak. A chronic housing shortage in the City of Kodiak has already resulted in dense rural-type residential developments in adjacent areas which are not well suited to these conditions. The specific conditions of interest in this report are: present and future land use trends, water quality, and wastewater collection and treatment in the portion of Kodiak Island Borough known as Service District 1 (see Figure 1.1).

2.1 PLANNING AREA DESCRIPTION AND BACKGROUND (Service District 1)

The planning area covers 1,400 acres of land located directly northeast of the City of Kodiak. It is bounded on the south by city limits, on the east and north by Woody Island Channel and Mill Bay (marine waters), and on the west by a surveyed boundary. The area contains the Island Lake chain (Island, Dark, and Beaver Lakes), Mission Lake, portions of Lilly and Potato Patch Lakes, and numerous ponds, streams, and other wetlands.

Boundaries of Service District 1 were established by a Kodiak Island Borough ordinance. The area is divided for the purposes of this study into 15 wastewater collection basins based on natural surface drainage characteristics and property boundaries (see Figure 1.1). Wastewater collection basins are delineated to facilitate planning for specific portions of the study area and to assist in equitable distribution of project costs.

Service District 1 has been delineated in regional plans and is currently being developed as a suburban-type residential area. The estimated 1980 population of about 1,400 is mostly located in small, densely developed tracts scattered throughout the study area. An ultimate population of about 9,000 is predicted for the year 2000.

The Island Lake area of Service District 1 has long been recognized as a problem area in terms of water quality, primarily because of leaching of unstabilized wastewater from existing individual soil absorption systems (septic tanks and drain fields) which are inadequate due to the unfavorable geological conditions of the area. Residents of the Island Lake area have been cited by the Alaska Department of Environmental Conservation (DEC) for violation of state water quality standards.

Other point sources of water pollution include at least three sewer outfalls which discharge raw wastewater from small community collection systems directly to marine waters (see Figure 1.1). Outfall No. 2 is so deteriorated from lack of maintenance that sewage is discharged on land and drains over the ground surface to marine waters.

Discharge of raw or partially stabilized sewage has reduced and will continue to limit recreational opportunities in the area. The Island Lake chain ranks high in aesthetic quality but is not recommended for activities such as swimming or fishing because of water quality degradation. Drainage of raw sewage to marine waters reduces the aesthetic quality of beaches and creates potential human health hazards from activities such as shellfish gathering. An intensive program of wastewater collection and/or effective onsite treatment would promote recreational activities by improving water quality.

Although the intent of this study is not to promote development of the area, such development will probably occur with or without a coordinated, consolidated wastewater disposal system; the latter possibility would undoubtedly result in further degradation of water quality and increased likelihood of human health hazards. Therefore, the development of the area must be considered to ensure long-term maintenance, as well as short-term improvement of water quality.

2.2 STUDY PURPOSE AND SCOPE

The purpose of this facility plan is to investigate and develop the most cost-effective and environmentally sound plan for wastewater collection, treatment, and/or disposal systems for the Service District 1 planning area.

The major components of the facility plan are summarized as follows:

- A presentation of water quality objectives and treatment requirements for wastewater.
- A description and analysis of the existing conditions.
- A projection of future land use, population, and waste loads.
- A presentation of alternative wastewater facility plans.
- A cost-effectiveness analysis of the proposed alternative plans.
- An assessment of the environmental impacts of these alternatives.
- A recommendation as to the most appropriate plan for wastewater facilities to serve the needs of the planning area.
- A discussion of institutional and financial arrangements for implementation of the recommended plan.

2.3 PREVIOUS STUDIES AND REPORTS

A wastewater facility plan must consider in its objectives all federal, state, and local standards, regulations, water quality management plans, and other planning reports to avoid duplication, contradiction, or violation of statutes. The studies and reports reviewed and utilized in compilation of this report are listed below.

Tryck, Nyman, and Hayes. 1971. Kodiak Metropolitan Area Interim Regional Water Quality Management Plan. Anchorage. This report detailed possible wastewater collection and treatment alternatives for the urban Kodiak area.

Simpson, Usher, and Jones, Inc. 1976. Kodiak Island Borough Outer Continental Shelf Impact Study. Anchorage. This study inventoried community infrastructure, discussed possible levels of offshore oil development activity, described possible impacts of this oil development, and summarized possible policy alternatives available to the Borough.

Tryck, Nyman, and Hayes. 1977. Kodiak Island Lake Water and Sewer Study. Anchorage. This report described possible wastewater collection and water distribution systems for the Island Lake area. Cost estimates and possible financing mechanisms were also discussed in the report.

Kramer, Chin & Mayo, Inc. 1978. Kodiak Island Borough Regional Plan and Development Strategy. Seattle. This study consisted of the following major elements: projection of population and economic growth and the resulting need for additional community services, a comprehensive transportation plan, a comprehensive parks and recreation plan, zoning and subdivision regulations, design of a capital improvement program, and an environmental assessment.

2.4 PLANNING PARTICIPATION AND COORDINATION

The following governmental agencies are involved in the planning effort for compilation of this report: Kodiak Island Borough, the City of Kodiak, the Alaska Department of Environmental Conservation, and the U.S. Environmental Protection Agency.

KODIAK ISLAND BOROUGH

ISLAND LAKE SEWER PROJECT

Estimated Capital Cost $4,700,000

Project Component Breakdown (x 1,000)

Engineering Design	293.7
Project Inspection/Surveying	293.7
Construction	2,937.5
Contingencies and Miscellaneous	1,175.1
Total	$4,700.0

Funding Options (x 1,000)

Option I	EPA	$3,145.9	67%
	ADEC	714.4	15%
	Local	839.4	18%
	Total	$4,700.0	
Option II	ADEC	$1,965.8	42%
	Local	2,734.2	58%
	Total	$4,700.0	
Option III	Local Only	$4,700.0	100%

KODIAK ISLAND BOROUGH

ISLAND LAKE WATER PROJECT

Estimated Capital Cost $3,800,000

Project Component Breakdown (x 1,000)

Engineering Design	280.1
Project Inspection/Surveying	280.1
Construction	2,801.5
Contingencies and Miscellaneous	438.3
	$3,800.0

Funding Options (x 1,000)

Option I

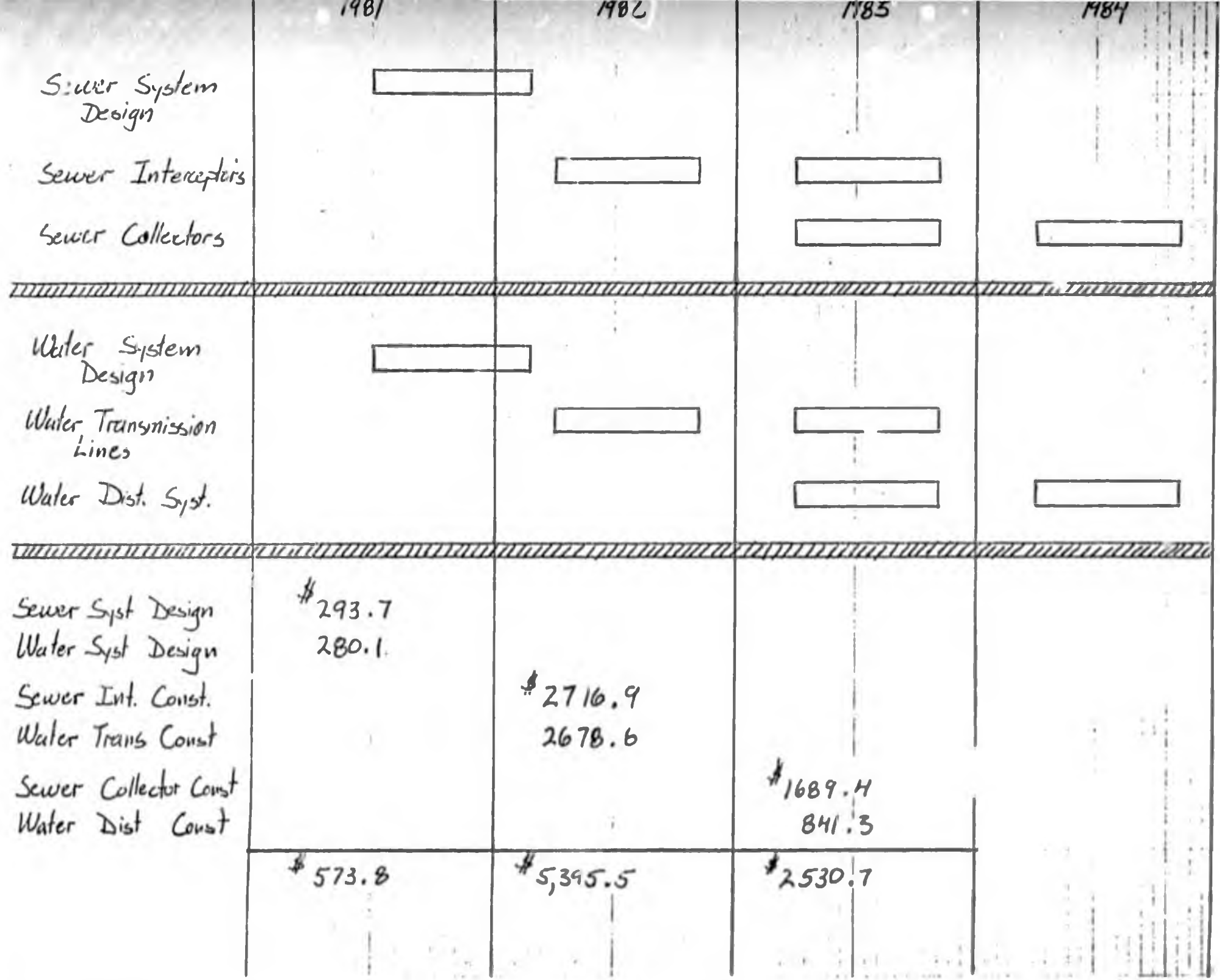
ADEC	$1,706.6	45%
Local	2,093.4	55%
Total	$3,800.0	

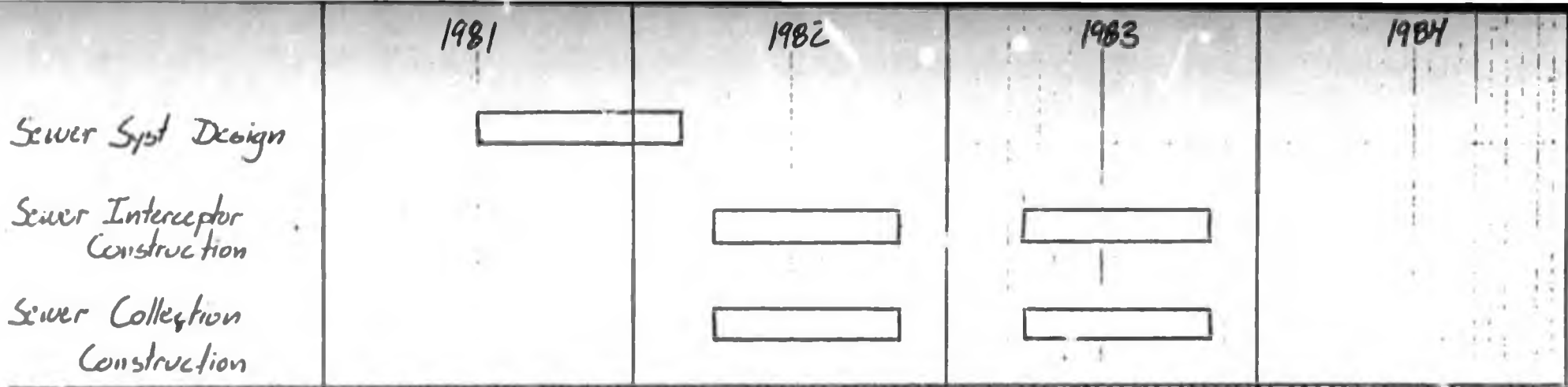
Option II

Local Only	$3,800.0

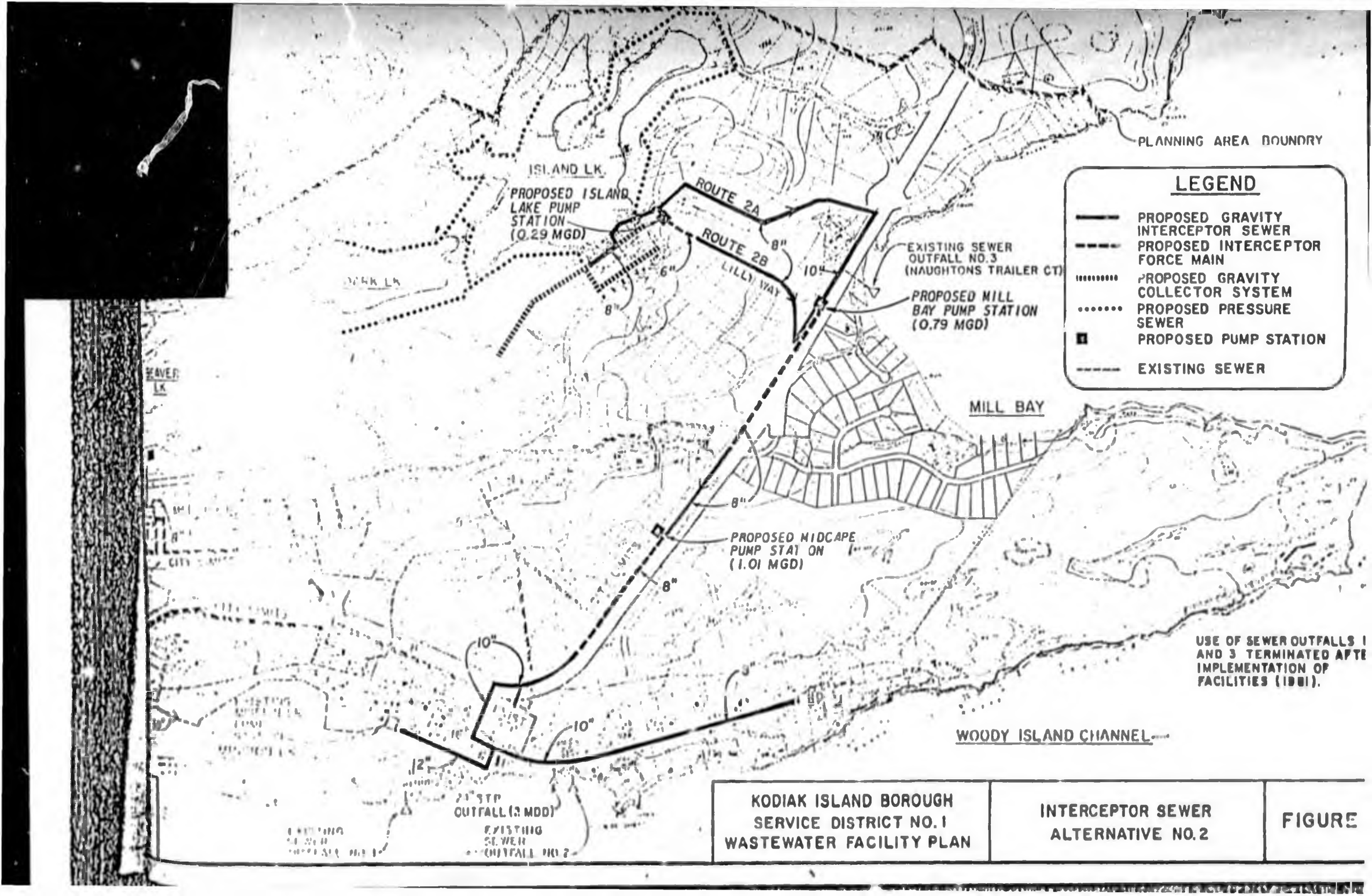
Kodiak Island Borough
Island Lake Sewer System
Cost Estimates (x 1,000)

Project Capital Cost	Option I EPA, ADEC and Local			Option II ADEC and Local		Option III Local Only
	EPA Grant	State Grant	Local Share	State Grant	Local Share	Local Share
626.0	$1,965.1	$330.4	$330.5	$1,313.0	$1,313.0	$2,626.0
272.0	-0-	136.0	136.0	136.0	136.0	272.0
898.0	$1,965.1	$446.5	$446.5	$1,449.0	$1,449.0	$2,898.0
288.1	$ -0-	$144.1	$144.0	$ 144.0	$ 144.1	$ 288.1
745.7	633.9	55.9	55.9	372.9	372.8	745.7
033.8	$ 633.9	$200.0	$200.0	$ 517.0	$ 517.0	$1,033.8
124.5	$ -0-	$ -0-	$124.5	$ -0-	$ 124.5	$ 124.5
643.7	546.9	48.4	48.4	-0-	643.7	643.7
768.2	$ 546.9	$ 48.4	$172.9	$ -0-	$ 768.2	$ 768.2
,700.0	$3,145.9	$714.7	$839.4	$1,965.8	$2,734.2	$4,700.0

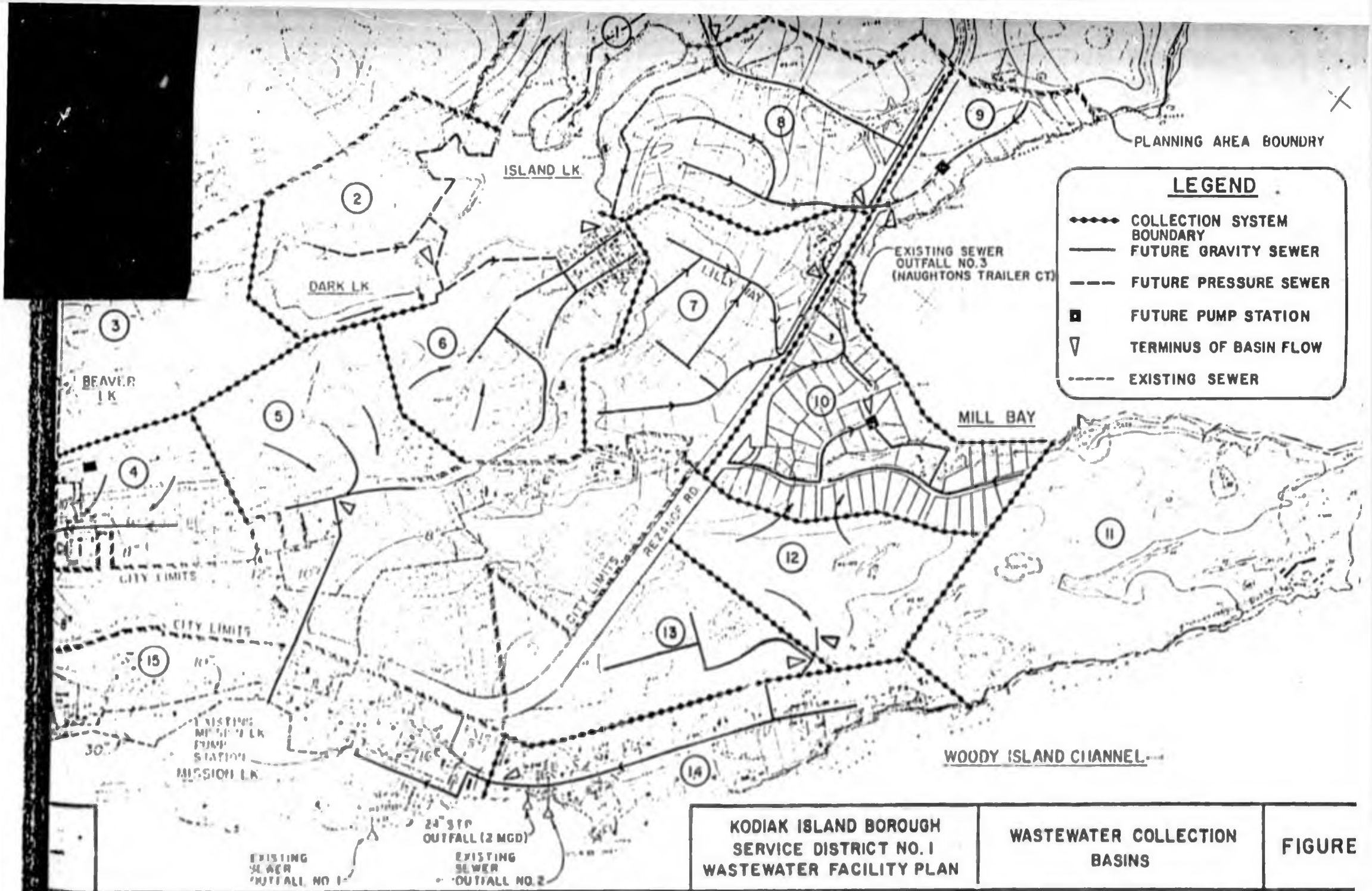

1981
1982
1983
1984
Sewer System Design
Sewer Interceptors
Sewer Collectors
Water System Design
Water Transmission Lines
Water Dist. Syst.
Sewer Syst Design $293.7
Water Syst Design 280.1
Sewer Int. Const. $2716.9
Water Trans Const 2678.6
Sewer Collector Const $1689.4
Water Dist Const 841.3
$573.8
$5,395.5
$2530.7



Sewer Syst. Design	$293.7		
Sewer Int Const.		$2716.9	
Sewer Coll. Const.		1689.4	
Water Syst. Design		280.1	
Water Trans. Const.			$2678.6
Water Dist Const.			841.3
	$293.7	$4686.4	$3519.9



KODIAK ISLAND BOROUGH SERVICE DISTRICT NO. 1 WASTEWATER FACILITY PLAN	INTERCEPTOR SEWER ALTERNATIVE NO. 2	FIGURE



KODIAK ISLAND BOROUGH
SERVICE DISTRICT NO. 1
WASTEWATER FACILITY PLAN

WASTEWATER COLLECTION BASINS

FIGURE

Kodiak Island Borough
Island Lake Water Distribution System
Cost Estimate

Item	Quality	Cost/Unit	Estimate (X 1,000)
Pipe, DI 12"	250 LF	$ 61.50	15.4
Pipe, DI 10"	7,775 LF	46.50	361.5
Pipe, DI 8"	15,950 LF	30.50	486.5
Pipe, DI 6"	4,075 LF	25.50	103.9
Pipe, DI 4"	950 LF	21.50	20.4
Pipe, PVC 1½"	400 LF	6.50	2.6
Pipe, PVC 1"	175 LF	5.00	.9
Excavation & Backfill	19,075 LF	30.50	581.8
Excavation & Backfill	10,500 LF	46.50	488.2
Pressure Testing	29,575 LF	1.50	44.4
GV&VB 12"	1 each	1,856.50	1.9
GV&VB 10"	8 each	1,467.50	11.7
GV&VB 8"	19 each	1,079.00	20.5
GV&VB 6"	6 each	1,003.50	6.0
GV&VB 4"	4 each	847.00	3.4
Hydrants	50 each	3,782.50	189.1
Backfill Select	2,500 cy	23.00	57.5
Street Replacement, Gravel	18,800 LF	14.00	263.2
Short Water Service	50 each	812.00	40.6
Long Water Service	60 each	1,700.00	102.0
TOTAL CONSTRUCTION ESTIMATE			$2,801.5

Sewer Funding Options
Advantages and Disadvantages

Option I -

EPA	$3,145.9
ADEC	714.7
Local	839.4

Advantages:
- lowest level of local funds necessary
- certain items that wouldn't normally be eligible for State grant are eligible under federal determination

Disadvantages:
- significant application procedures for federal funds
- proposed user charge system prohibited under federal regulations
- must utilize federal procurement and contracting procedures
- plan and specification approval necessary
- project must be audited
- national average for projects 7 to 9 years to benifical occupancy
- must prepare public participation work plan
- must implement annual review of O&M costs

Option 2 -

ADEC	$1,965.8
Local	2,734.2

Advantages:
- local money needed is partially reduced by State grant
- State assistance available in negotiating with consulting firms

Disadvantages
- plans and specifications must be approved by the State
- change orders must be approved by State
- application form must be completed
- project will be audited

Option 3 -

Advantages:
- essentially no strings attached to funds

Disadvantages:
- greatest amount of local funds necessary
- plans and specification still must be approved by ADEC

KODIAK ISLAND BOROUGH
SERVICE DISTRICT NO. 1
USER CHARGE SYSTEM DISCUSSION

The proposed method of distributing Service District No. 1 O&M costs would be to determine a fixed annual O&M cost that would be required no matter how many users were connected to the system. Assess all lots ultimately served by the facilities the fixed O&M equally. Determine the incremental increase in O&M cost per additional connection to the system. Charge users actually connected to the system this incremental charge on a monthly basis along with the City's monthly charge. Each year the rates would be adjusted to reflect the actual O&M costs and number of lots in the area.

Two alternatives are considered for distributing the fixed O&M cost. The first would be to assess all lots ultimately served by the interceptors equally. The second alternative would be to assess all lots served by the interceptors the interceptor portion of the fixed cost and in addition all lots served by the collector sewers the collector portion of the fixed cost. The example calculations below should illustrate the procedures.

Given:

257 lots within 250 feet of proposed sewer (collector service area)
421 lots within interceptor service area
$26/month City of Kodiak monthly charge per connection ← includes collection as well as treatment costs
$66,900 S.D. No. 1 Annual O&M cost with 180 connections (start-up)
$94,400 S.D. No. 1 Annual O&M cost with 1,000 connections
Interceptor O&M equals 79% of total
Collector O&M equals 21% of total

Incremental Cost:

$$\frac{\$94,400 - \$66,900}{1,000 \text{ conn} - 180 \text{ conn}} = \$33.54/\text{year}$$

Fixed Cost:

Total Annual Cost minus incremental cost times number of connections

= $66,900 - ($33.54) (180 conn)
= $66,900 - $6,040 = $60,860
Interceptor portion of fixed cost equals (0.79) $60,860 = $48,080
Collector portion of fixed cost equals (0.21) $60,860 = $12,780

Property Assessment = Fixed cost divided by number of lots served

Alternative No. 1; all lots share equally

$60,860/421 lots = $145/yr.

Alternative No. 2; all lots pay interceptor

portion $48,080/421 lots = $114/yr.

Lots in collector service area pay an additional collector portion of fixed cost $12,780/257 lots = $50/yr.

Service Charge = incremental O&M cost plus city charge

= $33.54/12 months + $26/month
= $2.80 + $26.00 = $28.80/month

Example User Charge:

Alternative No. 1

Lot outside service area:
Assessment $145/yr. #12.08/mo

Lot inside collector service area but not connected:
Assessment $145/yr. #12.08/mo

Lot connected to sewer.
Assessment $145/yr.
Service Charge 28.80/mo. #40.88/mo

Alternative No. 2

Lot outside collector service area:
Assessment $114/yr. #9.50/mo

Lot inside collector service but not connected:
Assessment $114 + $50 = $164/yr. #13.67/mo

Lot connected to sewer:
Assessment $114 + $50 = $164/yr.
Service Charge $28.80/mo. #42.47/mo

Alt 2a (180 connections)

Interceptor O&M #26
Collector O&M #5
City of Kodiak Charge #26
#57/mo

KODIAK ISLAND BOROUGH

Telephones 486-5736 - 486-5737 — Box 1246
KODIAK, ALASKA 99615

January 22, 1981

Senator Bob Mulcahy
Representative Fred Zharoff
Pouch V
Juneau, AK 99811

Dear Senator Mulcahy and Representative Zharoff:

As you both know, the Kodiak Island Borough has, since 1976, had a critical health problem in the Island Lake-Dark Lake area with on-lot sewage disposal. None of these problems have been resolved to date because of the tremendous cost involved.

We have been awarded a grant from the Environmental Protection Agency and the Department of Environmental Conservation for step one of the Service Area Project. Step one would develop a Wastewater-Facility Plan and environmental assessment. The cost of this not to exceed $49,486.00, shared 75% federal, 12.5% state, and 12.5% local. As of today, $70,809.00 has been expended, shared by the Kodiak Island Borough alone. No plan has been accepted by the Service District because of cost. Until a plan is accepted and approved by the Environmental Protection Agency, it seems the Borough will not be reimbursed.

You have already received a letter from the Borough's Engineering Consultant-Kramer, Chin and Mayo - of which I am enclosing another copy since it suggests a remedy to the above-mentioned problem. We heartily endorse this recommendation and suggest the roads be built at the same time that the sewer and water are installed.

We respectfully request your assistance in this matter.

Sincerely,

Arnold T. Hansen,
Acting Manager

ATH:cmb

Enclosure

Kramer, Chin & Mayo, Inc. Consulting Engineers, Architects and Applied Scientists

December 31, 1980

Mr. Arne Hansen
Acting Borough Manager
Kodiak Island Borough
P.O. Box 1246
Kodiak, Alaska 99615

Dear Mr. Hansen, Arne

Enclosed is a draft of a simple appropriation bill to secure funds to solve the severe health problem at Island Lake. I suggest that this draft be provided to Senator Mulcahy and Representative Zharoff for their action.

As you are aware, the physical soil conditions in the Island Lake area are not conducive to on-lot sewage disposal. The critical health hazard that has existed there is the direct result of this situation. Untreated and partially treated sewage flows over the ground where children play and walk to catch school busses. Domestic animals have complete access to these wastes and to the interior of residences. This contamination of the environment has led to a couple of consequences -- restricted housing development in the area and contamination of the lakes in the area. Boating and other aquatic recreation allows direct contact with these contaminated waters. I understand there is even a public water supply line beneath Island Lake that periodically breaks. This presents a direct threat of contamination to those supplied and consititutes a "cross-connection" to the City's water system, threatening the city consumers. Because of these severe threats to the health of the community, the Alaska Department of Environmental Conservation has placed on top-priority the funding of a sewage system at Island Lake.

I suggest that the appropriation bill be given urgent attention in the 1981 Legislature.

Sincerely yours,

KRAMER, CHIN & MAYO, INC.

Roger W. Allington, P.E.
Chief Engineer

RWA:pjm

Encl.

cc: Bob Mulcahy
Fred Zharoff

124 West Fifth Street
Juneau, Alaska 99801
Phone (907) 586-6400

SENATE BILL NO. ___

IN THE LEGISLATURE OF THE STATE OF ALASKA

TWELFTH LEGISLATURE - FIRST SESSION

A BILL

For an Act entitled: "An Act authorizing state aid to the Kodiak Island Borough for the abatement of a health hazard."

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

The sum of $3,500,000 is appropriated from the general fund to the Municipal Grant account for payment as a grant to the Kodiak Island Borough for design and construction of wastewater collection and domestic water supply systems for Service District No. 1 (Island Lake).

THE PRECEDING PAGES WERE TREATED AS
A UNIT IN THE ORIGINAL FILE.