HB

170

STATE OF ALASKA
FISCAL NOTE

Revision Date March 16 , 1983

I. REQUEST
Bill/Resolution No.: HB 170
Title: Approp. to DOT/PF construct, harbor facilities at St. George & St. Paul
Sponsor: Herrman, Cato & Zharoff
Requestor: House Trans. Committee

II. FISCAL DETAIL
Agency Affected: DOT/PF
Program Category Affected:

BRU, Program of Subprogram(s) Affected:

EXPENDITURES/REVENUES: (Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
OPERATING		0.0	0.0			
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 COMMODITIES						
500 EQUIPMENT						
600 LANDS & STRUCTURES						
700 GRANTS, CLAIMS, ETC.						
TOTAL OPERATING		0.0	0.0			
CAPITAL		22,340.0	16,900.0			
REVENUE		0.0	0.0			

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER (Specify Source)						
		0.0	0.0			

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

III. SOURCE OF FUNDS TO OFFSET FISCAL IMPACT OF BILL:

Not provided by Sponsor.

IV. ANALYSIS: See attached for analysis.

Prepared By: William R. Snell Phone: 266-1468
Division: Planning and Programming Date: 3/11/83

Approved by Commissioner: Date: 3/16/83
Department: Transportation and Public Facilities

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Original to Legislative Finance
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3/8/83

IV. ANALYSIS

St. Paul's total two-phase harbor development will cost $28,900.0. Recommend Phase I funding at $12,000.0 and Phase II funding at $16,900.0.

St. George's harbor development cannot be phased. The latest cost estimate is $12,000.0 to $14,000.0. There is an existing construction fund of $3,660.0. A maximum of $10,340.0 is needed in addition to the existing construction fund. This increase is due to a reevaluation of available on-island armor rock sources. Design modifications have occurred as a result of available armor rock having a lower specific gravity than originally estimated.

The FY'84 Capital Expenditure column reflects the additional $10,340.0 needed to fund the St. George harbor development plus the cost needed for Phase I of the St. Paul Project.

Dames & Moore
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March 17, 1983

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
1506 West 36th Avenue, Suite 101
Anchorage, AK 99503

Attention: Mr. Jeff Gilman

Gentlemen:

Report of Additional Rock Testing
Surface Boulder Samples
St. George Island, Alaska

This letter summarizes the results of Los Angeles abrasion (ASTM C-131) and California durability index (plastic fines and aggregate) tests performed on samples of rock from St. George Island. Durability index tests were in accordance with AASTHO T-210-72 procedures.

The samples were obtained from "large rock" areas delineated on Figure 2 of our November 24, 1982 geotechnical report. The samples were obtained by St. George residents acting on our telephone instructions with respect to sample size, location, etc. Earlier, specific gravity and absorption testing was completed for these samples; the results of those tests were presented in our letter dated February 17, 1983. At this writing, accelerated expansion tests (Corps of Engineers CRD-C148-69) and freeze-thaw loss testing (AASHTO 103-78, 50 cycle) are still in progress. Those results will be presented later. At this time, however, the accelerated expansion testing has been in progress beyond the nominal two-week time limit. Casual observation indicates no change in the samples. Also, the freeze-thaw loss tests have progressed through about 20 cycles. Thus far there is no visible change.

The results of the LA abrasion and durability index tests may be summarized as follows:

LABORATORY TEST RESULTS

Sample Identification	LA Abrasion Loss (percent)	Durability Index
Sample A+E (combined)	24(a)	-
Sample B+F (combined)	56(a)	-
Sample D	-	83.5(b)
Sample Z	-	85

(a) LA abrasion tests utilized gradation "A" (1-1/2 minus to 3/8 plus material).
(b) Two trials were run; results were 82 and 85, the average, 83.5, is reported above.

In addition to this testing, we have completed an examination under high magnification of these rock samples and have compared them side-by-side with the surface boulder samples obtained by ADC earlier this year. On the basis of this examination, all of the "new" samples have a less "open appearing" fabric than the ADC samples. There are no significant lithological differences, however; all the rocks can be classified as felsite or felsophyre as reported in our January 6, 1983 letter. Texturally, all of these rock samples appeared quite similar to those rocks obtained from the core borings and exposed in the cliff face. The fabric was perhaps somewhat more "open" than the cores, but only slightly more so. It was definitely tighter than the previous surface samples. Of course, this appearance difference is reinforced by the results of the specific gravity testing (as reported in our letter of February 17, 1983). Those test results were in the same range as the specific gravity data obtained by our earlier testing on the cores; they were considerably higher than the previous surface sample tests.

We have no complete, certain explanation for these differences in rock character. We understand that the initial surface boulder samples were broken from the edges of large rock blocks with heavy

hammers. Although close examination revealed no obvious signs of advanced chemical weathering (i.e., discoloration, deterioration of felospars, presence of clay minerals, etc.), we must speculate that some changes nevertheless had occurred. Perhaps years of frost action had opened up the fabric in some subtle way. As indicated, the only discernible difference between all the rock samples, based on examination under fairly high magnification, was the apparent "openness" of fabric. Since there is no reason to expect major lithologic or fabric differences on the basis of the rock origin, and since careful examination disclosed no lithological differences, we can only conclude that some process has operated to reduce the density of the boulder surfaces. The weight of evidence now suggests that a bulk specific gravity in the 2.6 area, or perhaps slightly higher, should be utilized for stability calculations.

Most of the additional testing (absoprtion, accelerated expansion, durability index, Los Angeles abrasion, and freeze-thaw loss) suggest that the rock is of reasonably good quality for armor rock purposes. The only exception is the LA abrasion test on combined Sample B and F, which produced a loss of 56 percent. Examination of the other test results, as well as the rock performance to date in the accelerated expansion and freeze-thaw testing, provides no clue as to why this particular sample should have performed so poorly in the abrasion testing. It is true that all of the samples for abrasion and durability index testing had to be crushed and screened from larger rock particles. Our review of case history data has established that crushed rock (as opposed to rounded gravel or crushed gravel) produces significantly higher losses under LA abrasion testing. This is particularly true of brittle rocks (such as these) which tend to break in ways that produce many relatively thin particles with sharp edges. We speculate that this may be the reason for the anomalously high abrasion losses for combined Sample B and F.

We have completed additional research in an attempt to better understand the implications of the various tests that we have completed. Our research did not produce any significant body of data comparing armor rock performance with results of these tests. As you know, the Los

Angeles abrasion and durability index tests were designed primarily for evaluation of concrete aggregate and crushed base or surfacing material for roads. The best information we obtained was included in a letter from Mr. James Paxton, Director of the Northern Pacific Division Corps of Engineers Materials Laboratory in Troutdale, Oregon. He transmitted to us a summary of typical riprap specifications that he had compiled for the various Corps regions within the North Pacific District and other (undefined) sources. We have reproduced that table in an attachment to this letter. It was interesting to learn that there is no district-wide policy within the Corps of Engineers with respect to riprap or armor rock specifications. During telephone conversations, Mr. Paxton explained that the specification provisions in this table are typical but all of them are not necessarily applied to each project. Also, he emphasized that the Corps tends to rely first on a record of satisfactory performance from a quarry; they "fall back" to specific specification provisions and extensive testing only if a quarry does not have such a record. (In earlier conversations with geotechnical engineers within the Seattle District, we were informed that they had numerous experiences with quarries that performed well in service where specification provisions indicated they should not and vice versa.)

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We will report the results of the LA abrasion and durability index tests in a subsequent letter. In the meantime if you have any questions, feel free to call us. The budgetary reserve in our geotechnical study contract has been exhausted, no further testing or study can be undertaken without further authorization.

Yours very truly,

DAMES & MOORE

Larry L. Morrison
Associate

LLM:ss
3 copies submitted
8215-062-05

QUARRY STONE
RIPRAP SPECIFICATIONS - TYPICAL

Tests	District NPW (Walla Walla)	NPS (Seattle)	NPP (Portland)	NPA (Alaska)	MISC. (Non Corps)
Specific Gravity, BSSD (unit weight-lbs/cu ft)	≥2.75	2.56 (160.0)	2.56 (160.0)	2.60	2.57
Absorption, percent	≤2.5	3.0	3.0	2.5	5.0
Freeze-Thaw (100 cycles)	≤5.0	<10.0	15.0	5.0	15.0
Ethylene Glycol	No breakage	<15.0[a]	15.0	No breakage	+
Abrasion (500 cycles)	25.0	<20.0	20.0	20.0	25.0
Wet/Dry (80 cycles)		<15.0	15.0		15.0
MGSO4 (5 cycles)			15.0		
Petrographic	*	*	*	No significant deleterious materials	*
X-ray				No significant deleterious materials	

(a) Based on counting pieces that separate.
* No specific criteria, based on subjective analysis.

Dames & Moore
800 Cordova, Suite 101
Anchorage, Alaska 99501
(907) 279-0673
Telex: 090-25227 Cable address: DAMEMORE

February 17, 1983

Peratrovich, Nottingham & Drage, Inc.
Engineering Consultants
1506 West 36th Avenue, Suite 101
Anchorage, AK 99503

Attention: Mr. Jeff Gilman

Gentlemen:

Preliminary Report
Additional Laboratory Testing
Surface Boulder Samples
St. George Island, Alaska

This letter summarizes the results of specific gravity and absorption testing on rock samples from the various identified surface source area near Zapadni Bay on St. George Island. Samples were obtained from the "large rock" areas delineated on Figure 2 in our November 24, 1982 geotechnical report. The samples were obtained by St. George residents acting on our telephone instructions with respect to sample size, location, etc.

Specific gravity and absorption testing has been completed for all of these "new" samples. Additional tests, including Los Angeles abrasion, durability index, freeze-thaw loss, and accelerated expansion are now in progress and will be reported later.

In accordance with your request, specific gravity and absorption testing was completed in accordance with two different ASTM standard methods for comparison. Also, the specific gravity was computed in three ways - bulk, bulk SSD (saturated surface dried), and apparent. The results of these tests are summarized in the attached table.

All of these samples, irrespective of the test method, have higher specific gravities than the first surface boulder samples. The values, however, are lower than for the initial test results which were obtained from cores and samples broken from inplace rock in the sea cliff. A detailed examination of the lithology, texture, and fabric of these latest rock samples has not yet been completed. However, a brief hand lens examination indicates some variation. Some of the samples appear very similar to the initial batch of surface boulder samples that were obtained by ADC. A few pieces of rock appeared to have the "tighter" fabric and slightly darker color that characterized the bulk of the sound rock in the cores. Others were of

intermediate appearance. A more detailed examination will be made at the conclusion of the testing program and our final report will include that information together with all of the test results.

- o O o -

We trust that this information will be of value to you in the ongoing design development. If you have any questions, feel free to call us at any time. The LA abrasion and durability index tests should be completed in the latter portion of February. The other tests are quite time consuming and will be completed later.

Yours very truly,

DAMES & MOORE

By Larry L. Morrison

Larry L. Morrison
Associate

LLM:jm
Attachment
3 copies submitted

QUARRY STONE
RIPRAP SPECIFICATIONS - TYPICAL

Tests	District NPW (Walla Walla)	NPS (Seattle)	NPP (Portland)	NPA (Alaska)	MISC. (Non Corps)
Specific Gravity, BSSD (unit weight-lbs/cu ft)	≥2.75	2.56 (160.0)	2.56 (160.0)	2.60	2.57
Absorption, percent	≤2.5	3.0	5.0	2.5	5.0
Freeze-Thaw (100 cycles)	≤5.0	<10.0	15.0	5.0	15.0
Ethylene Glycol	No breakage	<15.0(a)	15.0	No breakage	+
Abrasion (500 cycles)	25.0	<20.0	20.0	20.0	25.0
Wet/Dry (80 cycles)		<15.0	15.0		15.0
MGSO4 (5 cycles)			15.0		
Petrographic	*	*	*	No significant deleterious materials	*
X-ray				No significant deleterious materials	

(a) Based on counting pieces that separate.
* No specific criteria, based on subjective analysis.

SUMMARY OF SPECIFIC GRAVITY AND ABSORPTION TEST DATA

Sample Location and Test Method	Percent Absorption	Specific Gravity		
		Bulk	Bulk SSD(1)	Apparent
Area A				
C-97	1.6	2.65	2.69	2.76
C-127	1.4	2.64	2.68	2.74
Area B				
C-97	2.3	2.53	2.59	2.69
C-127	2.2	2.52	2.57	2.67
Area C				
C-97	3.4	2.46	2.55	2.69
C-127	3.0	2.49	2.57	2.69
Area D				
C-97	1.7	2.66	2.70	2.79
C-127	1.7	2.66	2.71	2.79
Area E				
C-97	2.0	2.58	2.63	2.72
C-127	1.8	2.57	2.62	2.70
Area F				
C-97	2.4	2.58	2.63	2.74
C-127	2.4	2.58	2.64	2.75
Area Z(2)				
C-97	1.8	2.51	2.56	2.63
C-127	1.5	2.59	2.63	2.70

(1) SSD means saturated surface dried.
(2) Area Z sample for C-97 test method appeared slightly more porous than sample for C-127 test method.

St. George Village Corporation Forms Tanaq Fisheries Company

by Charles W. Smythe, Ph.D.

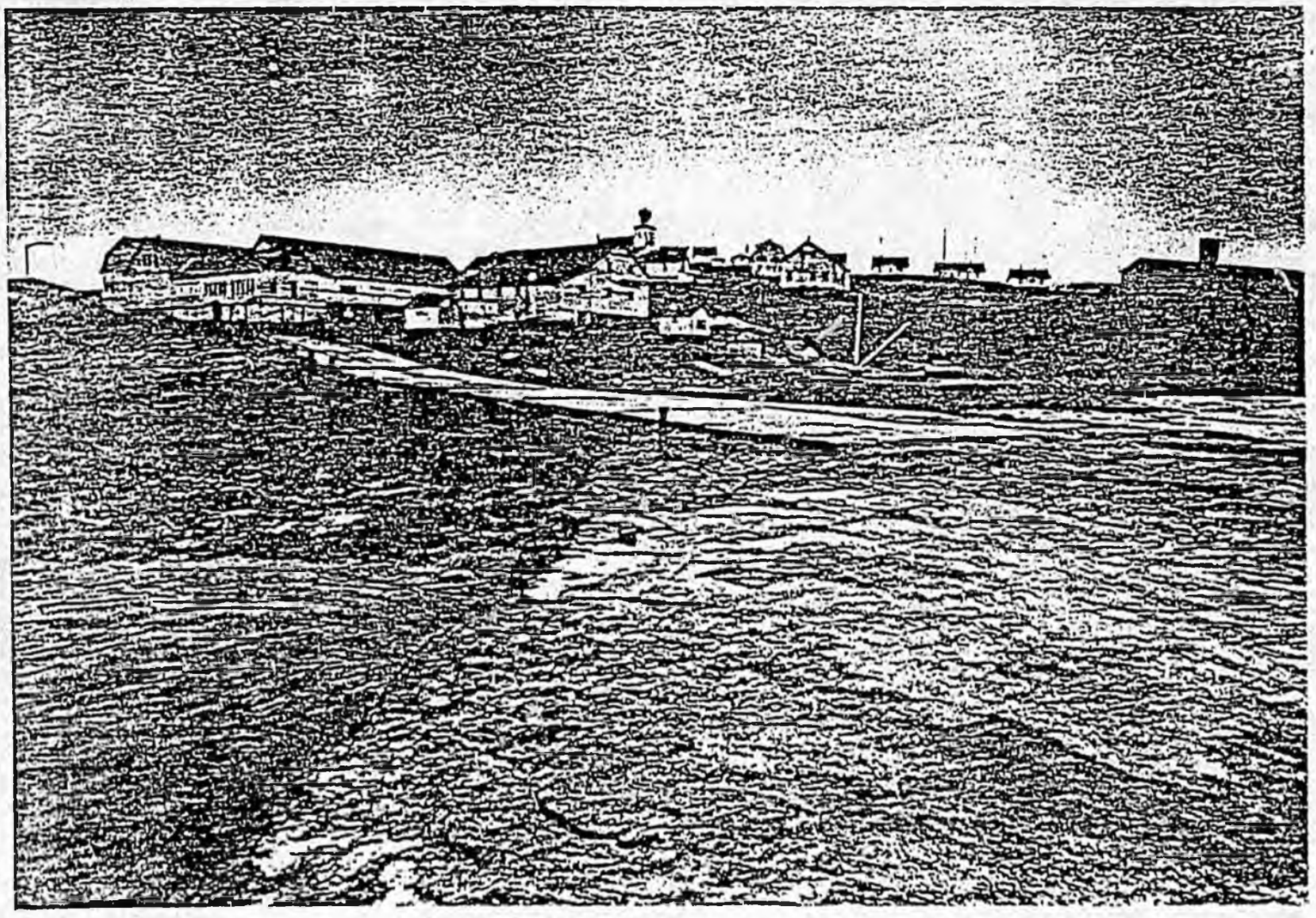


Photo courtesy of Aleutian-Pribilof Island Association, Inc. Photo by Stapleton/Klamser Photographers

Faced with the imminent withdrawal of the National Marine Fisheries Service's administrative support to the village of St. George later this year, the St. George Tanaq Corporation and the Village Council are developing plans for economic alternatives to government employment and administration. Because NMFS provides at least 80 percent of the earned income on the island, the need for immediate viable alternatives is critical. Tanaq is focusing its development efforts on the fisheries potential of the surrounding Bering Sea.

Last summer, Tanaq started a commercial fishing and fish processing operation which produced 14,000 pounds of frozen halibut during the two-week commercial season. Building upon the subsistence halibut fishing practices of the villagers, Tanaq bought fish from local fishermen who caught halibut hand-jigging in the Bering Sea from outboard-powered aluminum skiffs. The corporation sold the fish to the Hokuten Trawlers Association in Japan, which has agreed to buy all the fish that will be produced in the 1983 season.

The purchase agreement is part of a joint venture formed last month between the St. Gearge Tanaq Corporation and the Hokuten Trawlers Association, known as the Tanaq Fisheries Company. This business will take the lead in developing a primary interest in fishing on St. George. For the 1983 season, the Japanese group will give St. George a 26-foot vessel, including gear and equipment for halibut and crab. They will also send to St. George four experts in boat and equipment operation and fish processing. The Tanaq Corporation has two

Photo courtesy of Aleutian-Pribilof Island Association, Inc. Photo by Stapleton/Kiemser Photographers

Orca boats which will become part of the operation. Tanaq has agreed to sell 500,000 pounds of halibut to the Hokuten Trawlers Association, which will be caught and processed by the Islanders. In order to help ensure their access to the fish resource, St. George is joining with communities on St. Paul, Nunivak and Nelson Islands to request from the North Pacific Fisheries Management Council a longer season and a twelve-mile exclusive fishing zone around the respective islands.

During the last fishing season, the Tanaq Corporation started a fish processing operation in St. George. Villagers were required to process the fish in three different buildings due to the lack of facilities in the community. Flash freezing was done in the freezer at the village store owned by the corporation.

Next season, the corporation expects the operation to be in a single location. In the fall, workers began the conversion of an unused NMFS building into a processing and freezing plant. NMFS had used the building to store transformers, which had leaked oil. A soils test revealed no traces of PCB, which saved the corporation from having to remove 6 feet of ground from under the building.

As a contribution to the fishing operation, the Community Council installed a hydraulic boom near the village suitable for handling the small boats used in the fishery. Also, Tanaq is investigating the potential for providing loans for the purchase of boats. Several men wish to purchase slightly larger boats, 20-24 feet, for their fishing.

A subsidiary of Tanaq, the Pribilof-Highly Company, is another joint venture into the Bering Sea fishing business. This company was formed with a Taiwanese fishing organization. The company is planning to expand their operation with the purchase an American bottom-fishing boat.

Discussing their immediate development plans, Chairman of the Board Anthony Merculief said "We feel pressed to do something right away, in light of the pull-out of NMFS." The Tanaq Corporation and the Community Council are united in their position that the federal government should not pull out until a viable economy is established on St. George. Although their plans appear to be feasible, the fishery development is not definite.

A critical factor in the success of the fishing industry on St. George is the installation of a harbor. The State Department of Transportation is nearing completion of a harbor development plan, but there is no guarantee of state funding for the construction.

Representatives from the corporation and the Council recently signed an agreement with the Department of Commerce which provides for a trust fund to improve the economic viability of the islands (St. Paul and St. George). The Department of Commerce stopped work on refurbishing the NMFS building to be used in fish processing until an agreement was developed, in effect holding the building in hostage.

The Tanaq Corporation and the Community Council are united in their position that the federal govenment should not pull out untill a viable economy is established on St. George.

The community representatives are concerned that there be no stoppage in supplies and equipment to maintain the island, and they sought unsuccessfully to have provisions included in the agreement which would allow them to request assistance from the Department of Commerce if the need arises. They believe this provision is necessary until the island can develop an economic base, or at least until the completion of the harbor facilities. They have requested the Alaskan congressional delegation to obtain the necessary federal appropriations.

If funding is approved by the state, the harbor construction will require three years. After that time the Tanaq Corporation would like to have an onshore fish processing plant located near the harbor, so all of the St. George residents can have the opportunity to work. ■

ALEUT

COMMUNITY COUNCIL

ST. PAUL ISLAND
ALASKA 99660

March 23, 1983

The Honorable Bill Sheffield
Governor of Alaska
Office of the Governor
Pouch "A"
Juneau, Alaska 99811

Dear Governor Sheffield:

The St. Paul IRA Council requests your support funding the St. Paul Harbor Project.

With the National Marine Fisheries Service withdrawal this fall, viable economic alternatives must be found that provide economic development, allow St. Paul Island to become self supporting, and provide a positive outlook for growth in the future.

One of the world's richest fishing grounds surrounds the Pribilof Islands. The people of St. Paul are hard working and industrious but lack the facilities to support commercial fisheries development. We feel harbor development will create a positive impact to the state and local economy, and provide us the means to support ourselves gainfully, independently of government. Hand outs or subsidies.

Locally, the St. Paul IRA is providing $500,000 in fishing vessel loan guarantees to support local fishing development, operating in small boats off the beach - weather permitting. The Tanadgusix Corporation is constructing a small seafood processing plant to handle the catch. The City is providing materials and equipment for construction of limited boat launching facilities. All of this work and support is a start, however, without larger vessels and a protected all weather harbor, fishing seasons are limited to three months of fair weather in the summer.

Please support the St. Paul Harbor Project and our goal to develop a sound economic base for the community, provide future

growth and development commercial fisheries, and become the logistical support base for all marine and offshore related activities in the Bering Sea.

Respectfully,

Adrian Melovidov

Adrian Melovidov
President
IRA Council of St. Paul

cc: U.S. Senator Ted Stevens
U.S. Congressman Don Young
State Senator Bob Mulcahy
State Representative Adelheid Herrmann
Larry Merculieff, Tanadgusix Corporation President
John R. Merculief, Mayor, City of St. Paul
IRA Councilmembers
File

ST. PAUL HARBOR
PROJECT DESCRIPTION

JANUARY 1983

The proposed St. Paul Boat Harbor project is planned to fulfill a long-standing need for a port facility in the central Bering Sea. Such a facility will serve to establish an onshore commercial fishing industry near the vast fishery resources of the area, thus making a tremendous contribution in developing a renewable resource industry for the State. Presently, a large percentage of the commercial fish harvested in the region is taken by fishermen and processors from outside of Alaska due to lack of adequate landing and service facilities.

Detailed resource and fishing industry assessments have concluded that development of an onshore commercial fishing industry at St. Paul is, by no means, resource limited. Indeed, demand for such a facility is so great that a development of this type could soon fill to capacity, even at a large scale.

Several development scenarios were analyzed to balance the needs of the fishing industry, the goals of the residents of St. Paul, and likely available construction funds. The result of this analysis was a scenario based on a moderate level of development. Due to anticipated levels of funding, the development plan was divided into phases. Tables 1a and 1b illustrate, in general terms, the minimum expected volume and wholesale value of landings and processed product corresponding to Phase I development. Tables 2a and 2b illustrate similar estimates for Phase II.

In Phase I, dock space will be limited to the extent that priority must be given to vessels offloading fish, or cargo vessels which cannot afford lengthy waits. This facility will primarily be dedicated to establishing an onshore processing and cold storage operation. Limited services, such as fuel and ice will also be available.

The additional harbor area and port facilities planned for Phase II will provide additional berths for fishing vessels and a protected area sufficiently large to accomodate processing ships. Services to fishermen can be expanded to include repair facilities including electronics, gear, and engines.

Table 1a. ANNUAL VOLUME AND VALUE OF LANDINGS AT ST. PAUL HARBOR: PHASE I

Species	Volume (lb.)	Exvessel Price ($ per lb.)	Value ($)
Halibut	640,000	0.85	544,000.
Pacific Cod	300,000	0.21	63,000.
King Crab	600,000	1.00	600,000.
Hair Crab	750,000	0.70	525,000.
Tanner Crab	400,000	0.70	280,000.
TOTAL	2,690,000		2,012,000.

Table 1b. ANNUAL VOLUME AND VALUE OF PROCESSED PRODUCT AT ST. PAUL HARBOR: PHASE II

Species (product form)	Volume (lb.)	Wholesale Price ($ per lb.)	Value ($)
Halibut (frozen H&G)	480,000	2.50	1,200,000.
Pacific Cod (frozen H&G)	75,600	1.00	75,600.
Pacific Cod (salted)	86,400	0.75	64,800.
King Crab (frozen sections)	300,000	3.50	1,050,000.
Hair Crab (frozen whole)	650,000	4.00	2,600,000.
Tanner Crab (frozen sections)	200,000	2.10	420,000.
TOTAL	1,792,000		5,410,000.

Table 2a. ANNUAL VOLUME AND VALUE OF LANDINGS AT ST. PAUL HARBOR: PHASE II

Species	Volume (lb.)	Exvessel Price ($ per lb.)	Value ($)
Halibut	800,000	0.85	680,000.
Pacific Cod	1,000,000	0.21	210,000.
King Crab	1,200,000	1.00	1,200,000.
Bair Crab	1,500,000	0.70	1,050,000.
Tanner Crab	1,000,000	0.70	700,000.
TOTAL	5,500,000		3,840,000.

Table 2b. ANNUAL VOLUME AND VALUE OF PROCESSED PRODUCT AT ST. PAUL HARBOR: PHASE II

Species	Volume (lb.)	Wholesale Price ($ per lb.)	Value ($)
Halibut (frozen H&G)	600,000	2.50	1,500,000.
Pacific Cod (frozen H&G)	252,000	1.00	252,000.
Pacific Cod (salted)	288,000	0.75	216,000.
King Crab (frozen sections)	600,000	3.50	2,100,000.
Bair Crab (frozen whole)	1,300,000	4.00	5,200,000.
Tanner Crab (frozen sections)	500,000	2.10	1,050,000.
TOTAL	3,540,000		10,318,000.

The principal component of the proposed St. Paul Harbor project is a breakwater/wharf structure which will create an artificial harbor at Village Cove. This harbor will contain a fishing port as well as facilities to handle cargo vessels and fish processing ships.

The completed breakwater/wharf will be 1,770 feet in length and will provide approximately 17 acres of protected basin with a depth of 18 feet or greater at mean lower low water, with no dredging required. Since the cost of this facility is estimated to exceed the amount of funding which can be reasonably expected to be available in the initial stage of development, the project is planned to be developed in phases.

Phase 1 development will consist of the excavation of a portion of Village Hill at the harbor site and the creation of a protected harbor by constructing a one thousand foot long breakwater/wharf projecting out from the headland.

The excavation of the headland will create a three acre site for future fish processing plants and other facilities needed for the fishing industry.

The breakwater/wharf will comprise a breakwater and a wharf built back-to-back to form an integrated structure. No dredging of the Cove will be required. The 650 foot long wharf will provide berthing for any of the following combinations:

a. Two 140-foot long fishing vessels each moored alongside the wharf.

b. A floating fish processing ship and two 140-foot long fishing vessels moored side by side.

c. A cargo vessel and two 140-foot long fishing vessels moored side by side.

d. A moored ocean-going barge and two 140-foot fishing vessels moored side by side.

In addition to the above combination of vessels, the wharf will provide moorings for up to ten smaller fishing vessels. The capacity can be further increased by the addition of floats in the inner harbor as well

A roll-on/roll-off ramp will be provided to facilitate the unloading of barges and a bilge and processor wastewater collection and disposal system will be installed along the length of the wharf.

Phase II development comprises the extension of the breakwater/wharf to 1770 feet in order to provide additional berthing and improved shelter. The development will include the provision of service and maintenance buildings, lighting, and utilities.

The engineering and construction costs of Phase I development with the facilities proposed are estimated at $12 million. The costs for Phase II (the full development plan) are estimated at $25.8 million if the complete development is awarded in one contract. If the full development plan is constructed in two phases, the total cost is increased by $3.1 million due to the need to remove and reconstruct the breakwater head from Phase I.

In addition to its contribution to the State of Alaska in general, the St. Paul Harbor project will provide employment opportunities for local residents. These opportunities will occur at two levels. Short term jobs will be available during construction of the boat harbor and port facilities. Long term employment will be made available in fishing, fish processing, cargo handling, and other marine oriented activities.

The construction is scheduled in stages which will provide maximum opportunities for local participation. The initial stage will include haul road construction, demolition of structures and pipeline relocation, opening quarries, and preparation of contractor's housing. Most of these activities could be performed by local forces and would provide an excellent opportunity for local workers to expand their experience into the competitive marketplace. This will make those workers a more attractive labor pool for the main breakwater contractor in later construction contracts.

The main breakwater contract will be awarded to a contractor specially qualified for this work. Some of the jobs will, of necessity, be filled by the contractor's own experienced workers. However, there will also be substantial opportunities for local residents, particularly due to the high cost of transporting and housing outside workers at St. Paul.

Table 1 illustrates an estimate of the type and number of personnel who will be required to construct the Phase 1 facilities.

Even as the harbor is being constructed, long term commercial activity will begin to emerge. Negotiations between local groups and fish companies will establish the basis for onshore processing activities. Ancillary commercial activities such as electronic sales and repair, ship chandlery, fuel sales, ice plant, cold storage, etc. will also provide new business and employment opportunities for local residents.

TABLE 1: Construction Personnel Summary

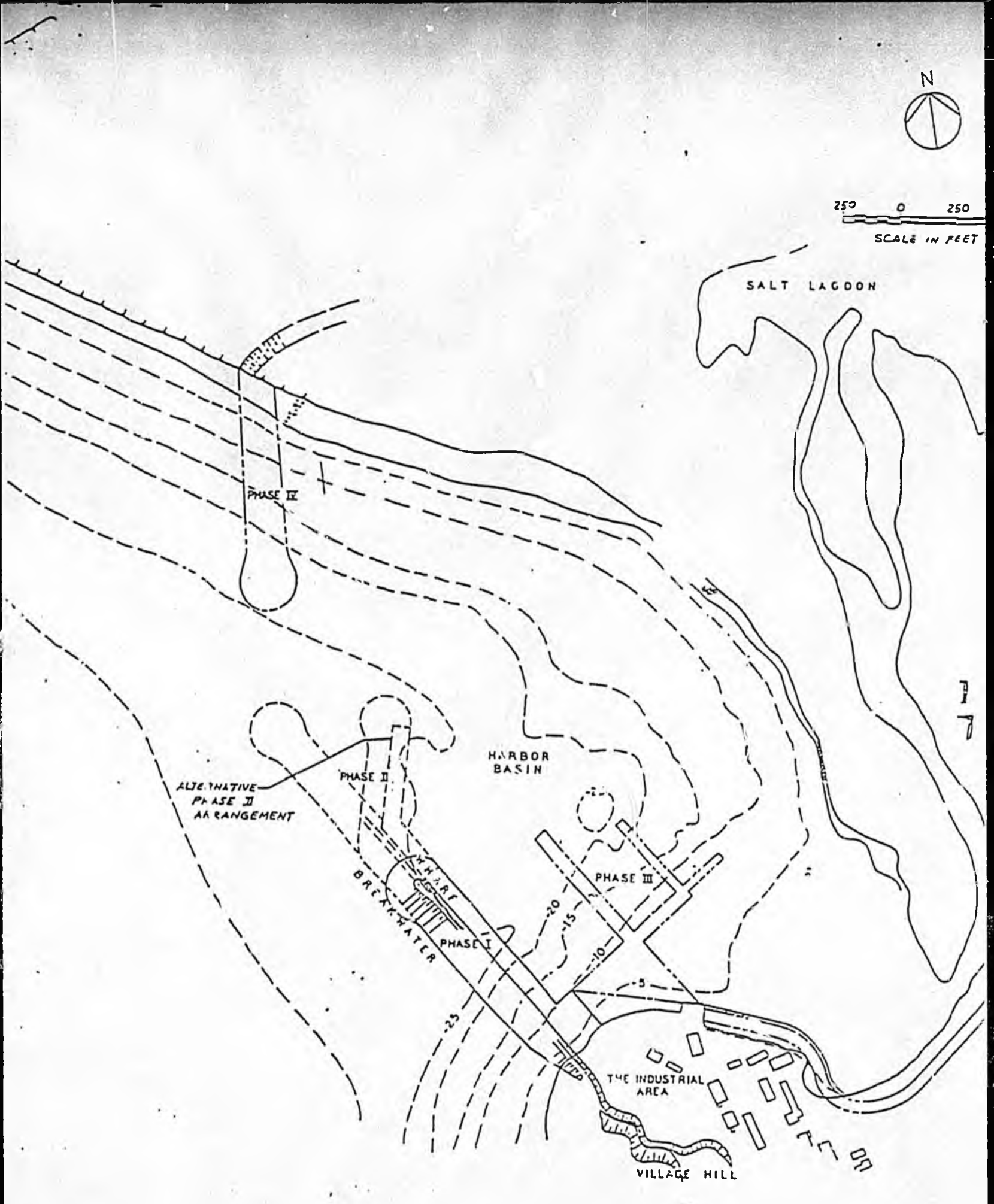
	Site Preparation	Quarries	Breakwater/ Wharf	Camp Operation & Maintenance	Main Contractor Requirement
Supervisory Staff					3
Foreman	2	2	1		3
Survey Crew	1		3		3
Operator	10	28	6		34
Driller		2			2
Chuck Tender		2			2
Powder Man		2			2
Oiler			4		4
Rigger			8		8
Teamster		4			4
Laborer	6	6	2		8
Signalman			2		2
Maintenance Crew	3			6	6
Camp Crew				12	12
Checker			2		2
Clerk			1		1
Timekeeper					2
Warehouseman				2	2
Carpenter	4		2		2
Plumber	2				
Dump Man	1				
Ironworker	3				
					102

Table 2 illustrates an estimate of the type and number of long term jobs which will likely be filled by St. Paul residents.

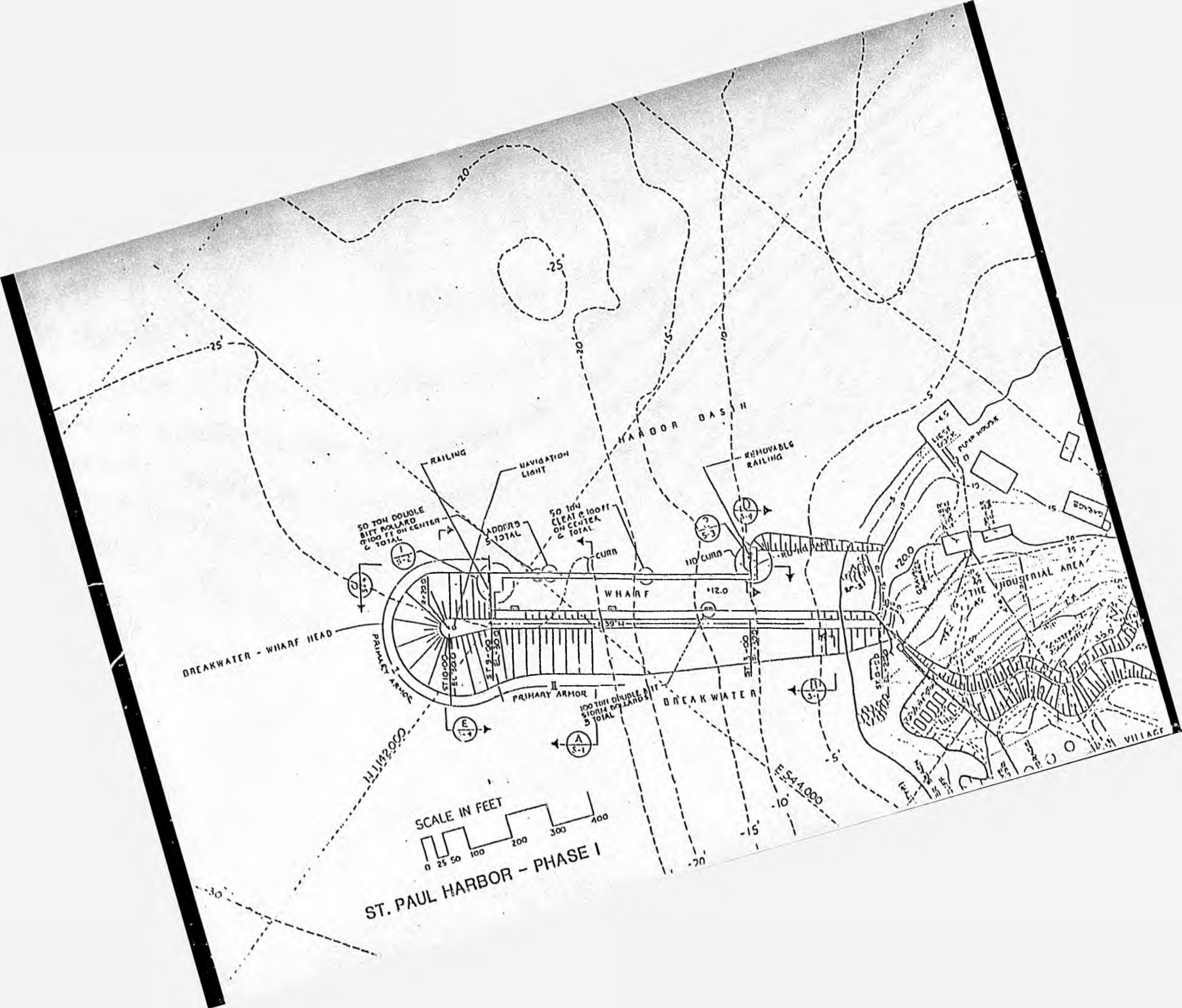
In addition to these marine oriented activities, general commercial activity will also increase, providing additional opportunities in the private sector.

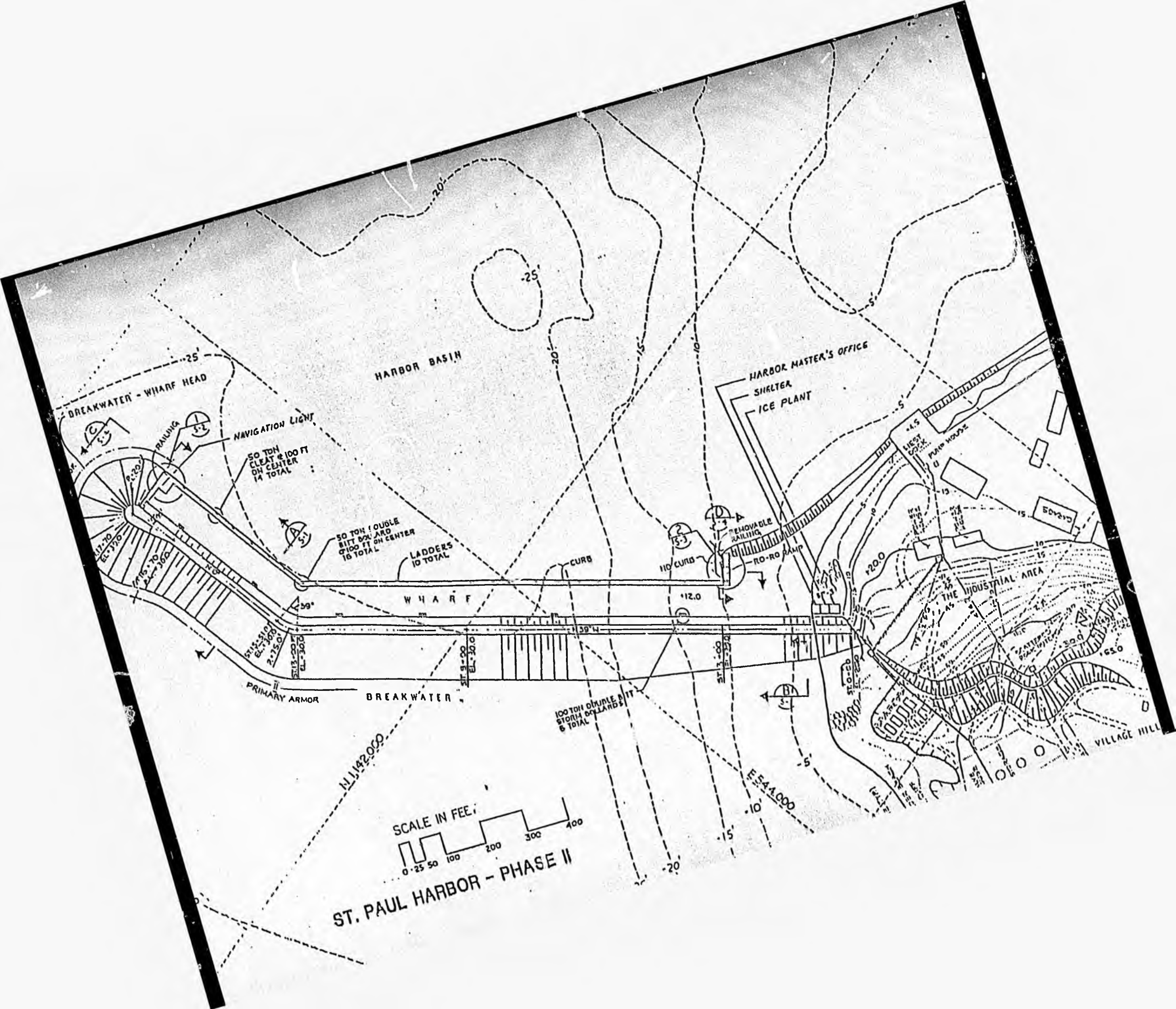
TABLE 2: Commercial/ Industrial Jobs Expected to be Filled by Local Residents

Fishermen	21
Processing	56
Service Industries	15
Public Sector	20



ST. PAUL HARBOR


HARBOR BASIN
RAILING
NAVIGATION LIGHT
REMOVABLE RAILING
50 TON DOUBLE BITT BOLLARD @100 FT ON CENTER 6 TOTAL
ADDED 5 TOTAL
50 TON CLEAT @ 100 FT ON CENTER 6 TOTAL
CURB
110' CURB
WHARF
+12.0
+20.0
BREAKWATER - WHARF HEAD
PRIMARY ARMOR I
PRIMARY ARMOR II
CONCRETE
100 TON DOUBLE BITT SIDMAR BOLLARDS 5 TOTAL
BREAKWATER
INDUSTRIAL AREA
VILLAGE
PUMP HOUSE
CHURCH
E 54,000
-5'
-10'
-15'
-20'
-25'
-30'
SCALE IN FEET
0 25 50 100 200 300 400
ST. PAUL HARBOR - PHASE I


HARBOR BASIN
BREAKWATER - WHARF HEAD
NAVIGATION LIGHT
RAILING
50 TON CLEAT @ 100 FT ON CENTER 14 TOTAL
50 TON DOUBLE BITT BOLLARD @ 100 FT ON CENTER 16 TOTAL
LADDERS 10 TOTAL
CURB
WHARF
PRIMARY ARMOR
BREAKWATER
100 TON DOUBLE BITT STORM BOLLARDS 6 TOTAL
110' CURB
REMOVABLE RAILING
RO-RO RAMP
HARBOR MASTER'S OFFICE
SHELTER
ICE PLANT
LIGHT
PUMP HOUSE
CRANE
THE INDUSTRIAL AREA
VILLAGE HILL
N 1,142,050
E 544,000
SCALE IN FEET
0 25 50 100 200 300 400
ST. PAUL HARBOR - PHASE II

Transformation of the St. Paul Economy

Photo courtesy of Aleutian-Pribilof Island Association, Inc. Photo by Stephen Klamser Photographers

The Pribilof communities of St. George and St. Paul are the homes of the largest Aleut population living in a single area. Ninety-eight percent of the population are descendents of Aleuts who were brought to the Pribilof as slaves. The Russians transported the Aleuts to these islands in 1786 to harvest seals. The 1867 Treaty of Cession transferred the jurisdiction of Alaska from Russia to the United States. From 1867 until 1969, Aleuts were a captive labor force for private U.S. commercial companies harvesting fur seals.

The U.S. government assumed direct control of the Pribilofs in 1910. The U.S. Indian Claims Commission documented the federal administrators' treatment of the Aleuts.. The Commission reported the treatment of the Aleut as abhorrent and the human suffering as beyond

description.

It was only after the collective intervention of the United Nations in 1958, the State Human Rights Commission in 1964 and a special congressional investigation that the Aleuts' conditions of servitude changed. The passage of the 1966 Fur Seal Act provided a means for Pribilof Aleuts to attain political self-determination. Foremost was the right of the Aleuts to create a city government and receive land under the laws of Alaska.

The lack of knowledge and experience with outside institutions delayed the establishment of a city government in St. Paul until 1971. Prior to this time, contact with the outside had been virtually nonexistent. The federal government had exercised rigid control to maintain its Aleut captive labor force.

With the assistance of two Aleuts who were attending college, a city government was created in 1971. At the same time, the Alaska Native Claims Settlement Act (ANCSA) was passed in December 1971. For the first time since the Russians enslaved the Aleuts, the Pribilofs had the political and economic vehicles to attain self-determination. A serious drawback was still the lack of a trained human resource pool. The city and the ANCSA village corporations of St. George and St. Paul devoted the first four years of their existence to learning their basic functions, understanding relevant laws, establishing institutional contacts and training their people.

Since then, the Tanaq Corporation of St. George and the Tanadgusix Corporation of St. Paul assumed ownership of all village homes which were previously held by the federal government. In addition, the Tanaq Corporation took over operation of the local grocery store, and together with volunteers built a small airstrip on St. George.

The St. George Council took over police protection. The St. Paul city council assumed sanitation, water, police, and fire protection, road and airport maintenance and established a local magistrate system. Both villages created a school district and assumed direct responsibility for elementary and secondary education.

The Tanadgusix Corporation of St. Paul developed business enterprises which include marketing seal by-products, tourism, restaurants, two commercial fishing boats, a halibut processing plant and a training course for commercial boat operations. In addition, the Tanadgusix Corporation concentrated on obtaining funds for community economic development and training. The Tanadgusix Corporation also took the leadership role in forming an umbrella organization to guide economic diversification plans. The communities' accomplishments were made in a relatively short period despite the overwhelming handicaps of remoteness, high cost of transportation and operations, and untrained personnel.

In 1979, both communities began to plan the gradual phase-out of the federal operations in the Pribilofs. The government still provides 73 percent of the wage base and funds to operate all services in the villages. To date, only two Aleut individuals have been trained to manage the Pribilof federal operations. With a strong desire to seek political self-determination and economic self-sufficiency, the leadership felt it mandatory to plan the gradual federal phase-out.

The plans for a gradual federal phase-out were abruptly changed in 1980 under the new federal administration. Commerce Secretary Baldridge issued a directive to execute a one-year phase-out of government operations on the Pribilofs

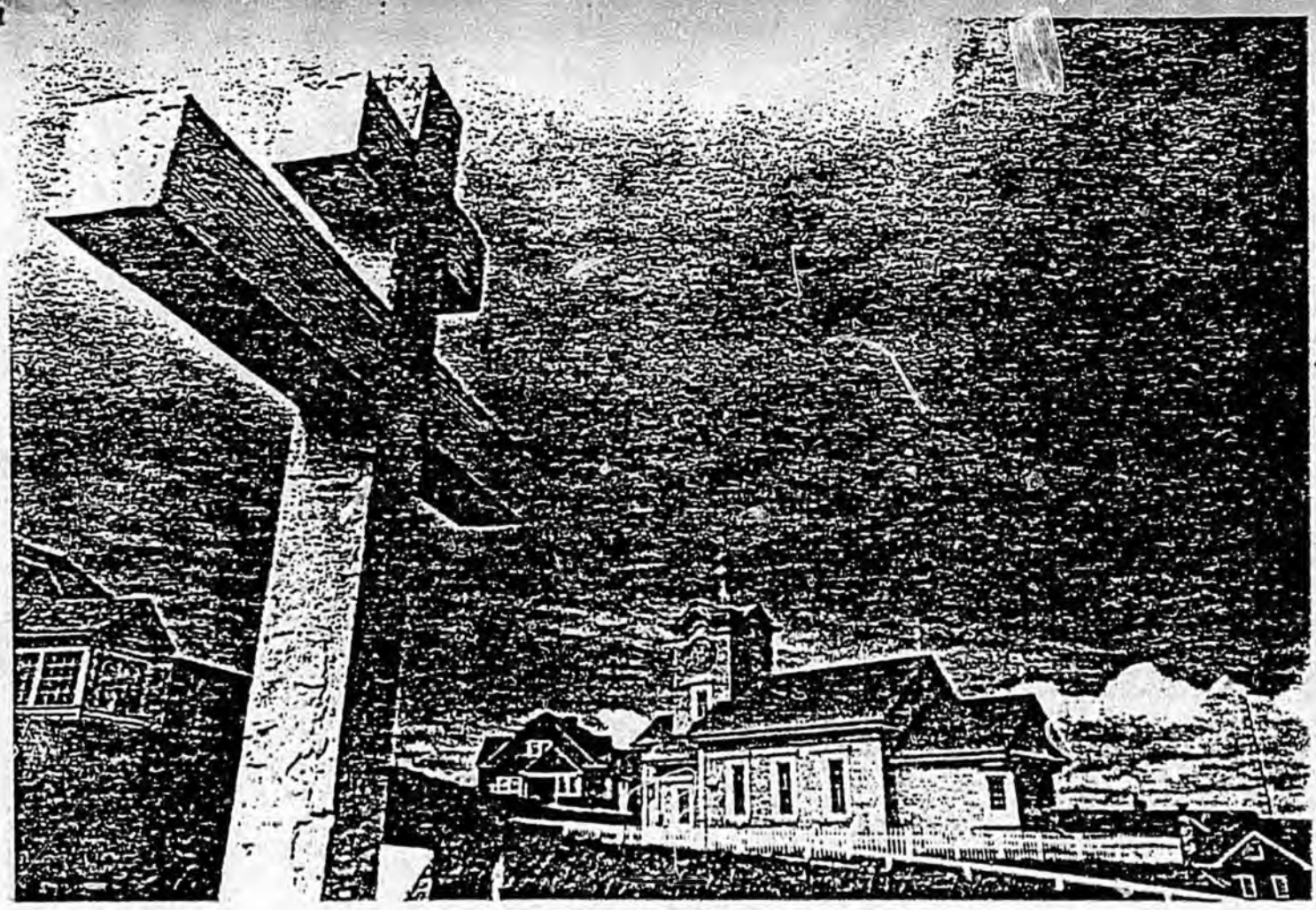


Photo courtesy of Aleutian-Pribilof Island Association, Inc. Photo by Stapleton/Klamser Photographers

Church on Saint Paul

which would cease by September 30, 1983.

The orgainzations on both islands mobilized in September, 1981, under an umbrella organization now called the St. Paul Interorganizational Council. The Council is coordinating the massive planning efforts to take over existing government services and develop new economic bases.

Economic Mobilization Projects

The impending federal withdrawal will require replacement of 73 percent of the total Pribilof wage base and assumption of the following services:

1. Marine transportation for transport of groceries and other major island supplies;

2. Operation, maintenance and funding of island power plants;

3. Purchase, supply and delivery of bulk home fuel and gasoline;

4. Purchase and maintenance of necessary heavy equipment;

5. Maintenance and operation of carpentry, plumbing and electrical shops;

6. Operation and maintenance of all water, sewer and electrical lines;

7. Maintenance of roads and buildings;

8. Funding and operation of the fur seal harvest and related buildings and equipment.

The federal withdrawal and the communities' assumption of these services and alternative economies will undoubtedly result in transformation of the Pribilof lifestyles essentially overnight. The Tanadgusix Corporation's and the St. Paul Inter-Organizational Council are initiating and conducting one of the most aggressive and comprehensive economic mobilization projects in the State.

The Tanadgusix Corporation has already expended nearly $1 million of its own capital in a variety of projects to assist in the economic transformation. The projects range from legal research, community planning and training to fisheries and harbor construction. Many projects are in progress and are coordinated with many federal, state and private organizations

An extensive planning effort is required for the government withdrawal and the development of a new economic base. The leadership has been severely burdened with the demands to coordinate these activities. At the same time, they must continue to conduct the usual governmental and corporate functions.

The leadership reports that a harbor is an essential requisite for the community's economic survival. They maintain that the largest Aleut community in the world will cease to exist without a harbor. The experts who are involved with the economic transformation efforts uniformly agree that the community *cannot* be viable without construction of the boat harbor.

The success of the local economy will benefit the national and state economies according to the St. Paul organizations. Construction of a port on St. Paul will aid to decrease the U.S. balance of trade deficit, increase the viability of a domestic bottomfishery, increase State revenues, provide local employment and the infrastructure necessary for the survival of an Aleut cultural stronghold. ■

Tanadgusix Corporation Enters Bering Sea Fisheries

An agreement between the Tanadgusix Corporation (TDX) and the National Federation of Medium Trawlers was signed in early December, 1982. The joint venture between TDX and the Hokuten Trawlers Association of Japan (sponsored by the National Federation of Medium Trawlers) is the beginning of a new commercial fishing industry on St. Paul. Hokuten and TDX have been exploring possibilities of joint efforts during the last twelve months. The agreement comes after reciprocal visits between Japan and the Pribilofs and several exploratory meetings. It is anticipated that the agreement will be ratified by the Board of Directors of each of the respective organizations.

Japanese experts will come to St. Paul in 1983

The National Federation of Medium Trawlers is an organization which represents Japan's medium trawlers. The Hokuten Trawlers Association is a group of small Japanese fishing companies headquartered in Tokyo, which owns or controls 97 boats.

The Tanadgusix Corporation, the ANCSA corporation of St. Paul village, has been involved in extensive studies of the Bering Sea fisheries for the past four years. Larry Merculieff, President of the village corporation, reports that TDX is now ready to become an active participant.

TDX owns and operates the King Eider Hotel on St. Paul Island. They also own the Anchorage International Airport Inn which is operated by International Inn, Inc., a subsidiary of TDX. In addition, TDX exports fur seal by-products to the Far East, leases out a production plant to a company which processes seal meat for dog food and crab bait, and operates two small *baby-longliners* as training boats for local Aleuts who wish to acquire commercial fishing experience.

TDX's agreement with the National Federation of Medium Trawlers is the first of many steps that it intends to take to ensure that its stockholders and the corporation will have the maximum opportunity to participate meaningfully in the vast Bering Sea fishery. The agreement calls for the Japanese to provide technical assistance to TDX and its stockholders in all areas involving day fishing boats, commercial fishing techniques, processing, quality control and marketing. Japanese experts will come to St. Paul in 1983. Provisions also exist to send St. Paul trainees to Japan for on-the-job training in fishery-related fields. The agreement also calls for the importation of a Japanese day boat under 5 net tons and gear from Japan to St. Paul to aid in local training.

The agreement calls for the Japanese to provide technical assistance to TDX and its stockholders

Merculieff noted that the agreement is essential to their economic viability. He stressed,

> *"We must prepare our people for the boat harbor which should be fully operational within four years. Without training, otherwise qualified Aleuts will not be able to participate in the fishery which will be headquartered on our land, nor will they have meaningful jobs."*

Merculieff cited the Japanese' extensive experience in fisheries as the reason for the business partnership.

Day boats will be used by the Aleuts in the fishery operation. Merculieff notes that they are familiar with them. Furthermore, day boats do not require an extensive knowledge of fishery technology. More importantly, they do not require a capital investment that is out of the reach of the corporation shareholders.

The agreement signed by TDX calls for short term obligations with minimal expenditures by TDX. Merculief stressed,

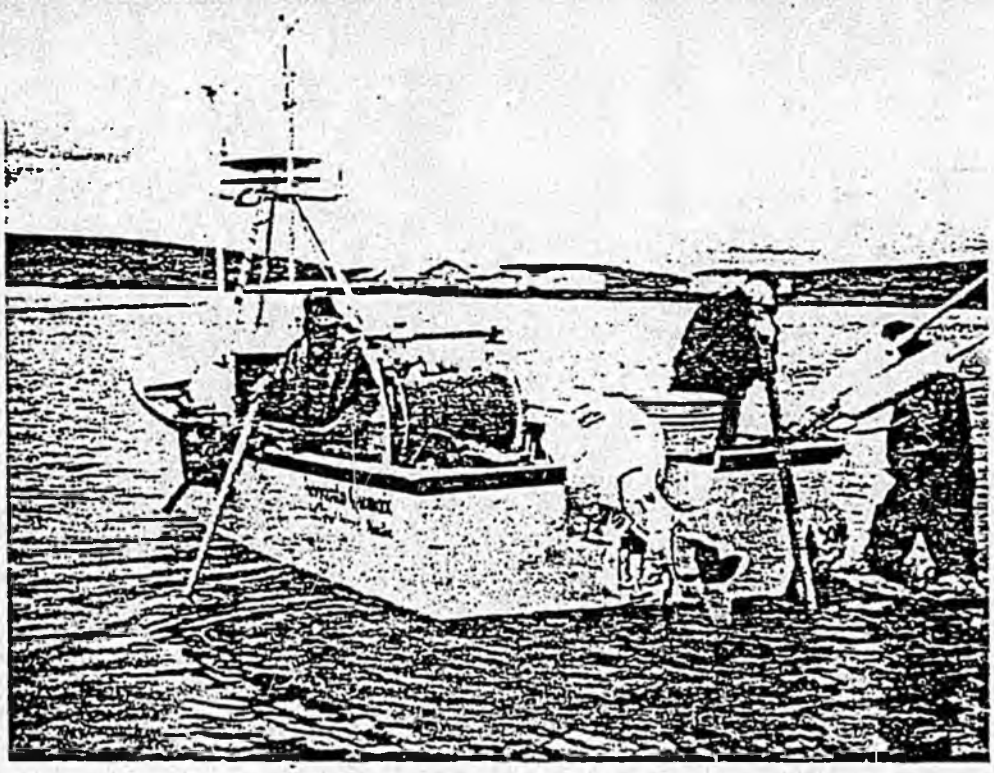
> *"We are going to keep our options open as far as any long term commitments are concerned, at least until we gain the requisite experience and more understanding of the business. We will not forego long term benefits for short term gains."*

A boat harbor is essential to TDX's participation in the Bering Sea fishery development. The corporation has campaigned extensively to obtain State funding for a major boat harbor on St. Paul. The harbor would serve the domestic Bering Sea fleet. Strategically located in the midst of one of the world's richest bottomfishery, St. Paul will be critical to fishermen and processors alike.

TDX's fishery plans also call for the development of a port in Chernofski Harbor on south Unalaska Island. According to Merculief,

> *"Chernofski Harbor is a natural deep water harbor, sheltered from most prevailing winds, with prime land suitable for large onshore facilities. TDX has been planning for the development of Chernofski as the major bottomfish port in Alaska for the past seven years. The domestic Bering Sea bottomfishery fleet will need a port. Dutch Harbor will have its hands full with the crab fleet, floating processor and the oil industry. We intend to provide a place for our American fishermen to our mutual benefit."*

Merculieff reports that TDX has been negotiating with a consotium of several large investors who are interested in developing Chernofski. He believes that negotiations may lead to development during 1983. ■



A boat harbor is essential to TDX's participation in the Bering Sea Fishery development

PRIBILOF INTERORGANIZATIONAL COUNCIL

Tanadgusix Corporation
City of St. Paul

Aleut Community Council of St. Paul
Pribilof School District

(907) 546-2312

Janaury 10, 1983

Representative Adelheid Herrman
Alaska State Legislature
Pouch V
Juneau, Alaska 99811

Dear Representative Herrman:

We received your letter requesting priorities for St. Paul. We appreciate the opportunity to make input.

The obvious number one priority designated by all organizations on St. Paul is the first phase funding of the boat harbor. We hired Bechtel to do the design engineering and cost evaluations and their final report was submitted to DOT in December. During our last meeting in Anchorage, I gave you an executive summary of the project. If you need the complete Bechtel report, please let me know so I can get you a copy immediately. The first phase will cost twelve million dollars and would enable boat and processing operations to begin within a year of construction start-up. Needless to say, this project is essential for economic independence for St. Paul as well as St. George.

I understand that you will be in a meeting with us in Juneau when we talk with the Governor's staff. I look forward to providing more information to you prior to that meeting.

Our Corporation's second priority is funding for dock rehabilitation in Chernofski Harbor on South Unalaska Harbor. If I have not done so already, I am enclosing an executive summary of this project. Governor Hammond placed this in his capital budget at $600,000. I look forward to discussing this matter with you further when in Juneau.

Charlotte Kirkwood, planner for the IOC had developed other items which I am sure she will discuss with you if she has not already.

Goodluck this session.

Sincerely,

Larry Merculieff, Chairman

LM/mz

ST. PAUL BOAT HARBOR

Status Report (August 25, 1982)

Status Report Update (November 16, 1982)

INTRODUCTION:

With the withdrawal of Federal support from St. Paul Island, the provision of alternative employment and a renewed economic base is of great urgency.

The State of Alaska, through the Department of Transportation and Public Facilities, has recognized this need and during 1981 commissioned the consulting firms of Dames & Moore, and Norgaard (USA) Inc. to prepare a feasibility report and a harbor development plan.

The consultants investigated the fisheries resource, studied the socio-economic and cultural impacts, and undertook extensive environmental and physical investigations, including wave studies. The report concluded in the recommendation to construct a boat harbor at an estimated cost of $19,686,000.00. The harbor layout is shown as Figure 1.

ONGOING PLANNING:

Assisted by a grant from the State of Alaska, the City of St. Paul is proceeding with engineering design of the harbor facility to meet the urgent deadlines imposed by the withdrawal of Federal economic support. In this regard, the City has retained Norgaard Consultants as project managers and design consultants are now being selected for engineering design.

The previous environmental investigations have provided sufficient information to allow the consultants to proceed with preliminary engineering according to a 'fast track' design procedure shown in Figure 3. With this approach, some of the expensive and time consuming site investigations will be carried out concurrent with the construction contract and utilizing some of the contractors' equipment. With this approach, construction can commence by mid-1983 and allow for the first berthing of fishing vessels in the second half of 1984.

It is the intent of the design to propose a phased development of the harbor which will fit available funding. In this phased development, the initial phase of construction would consist of a length of breakwater and minimal berthing facilities and may amount to $12-14 million. Also, full cost estimates for this phase, together with preliminary engineering drawings, will be available by the first of December, 1982; in time to be presented to the new legislature.

With the 'fast track' design approach, reliable cost estimates can be provided within the present design budget of the City of St. Paul. If a standard design procedure was being followed, as shown in Figure 4, final cost estimates would require an expenditure of some $1.4 million and would not be available until late 1984.

Therefore, it appears that this 'fast track' design procedure will more realistically fit the needs of the people of St. Paul in providing for the fishing industry to begin operations approximately one year sooner.

ST. PAUL BOAT HARBOR
Status Report Update; November 16, 1982

Since the preparation of the original status report in August, Bechtel Civil & Minerals of San Francisco has been awarded a contract for preliminary engineering of the St. Paul Boat Harbor. This work has progressed well within schedule and we anticipate no problem in meeting the December 1 deadline for submission of cost estimates.

The preliminary plans developed by Bechtel have taken into account the need to provide a complete facility as soon as possible. The new layout is such that no dredging will be required, thus reducing any potential environmental impact. The new layout also provides an expanded harbor area which will allow for progressive growth of the port in the future.

Originally, the planned facility was to be divided into two basic development phases, since the estimate for construction at that time was on the order of $20 million and it seemed unlikely that that amount would be available in a single appropriation. Therefore, a maximum of $12 million was targetted as a reasonable limit for Phase 1 construction costs. By revising the layout, however, preliminary estimates indicate that the entire facility can be built for a cost of between $13 and $15 million thus allowing for a more efficient construction schedule, and earlier completion, at a much reduced cost.

Further details of the preliminary engineering design as well as final cost estimates will be available by December 1.

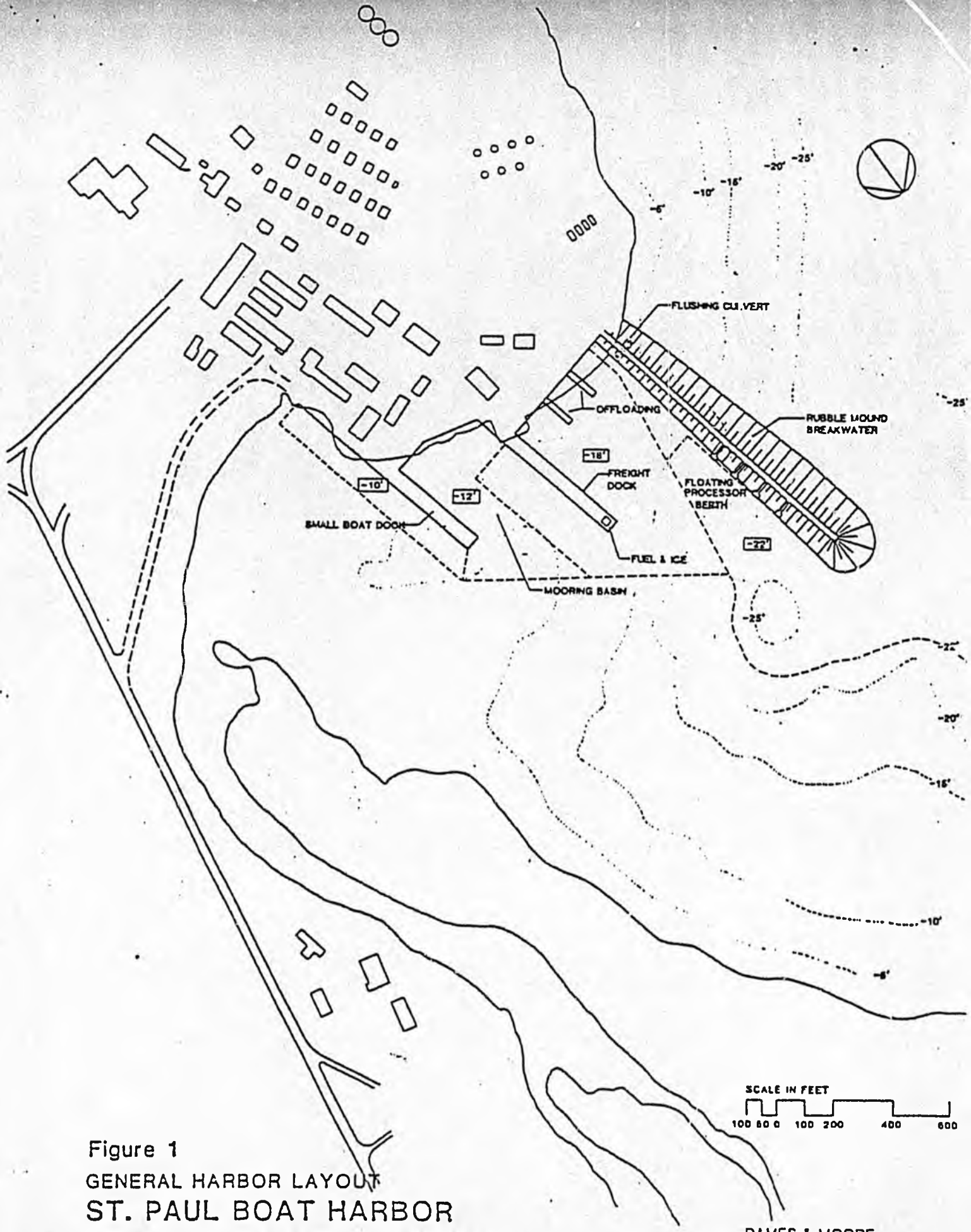


Figure 1

GENERAL HARBOR LAYOUT

ST. PAUL BOAT HARBOR

ST. PAUL ISLAND, ALASKA

DAMES & MOORE
NORGAARD (USA) INC.

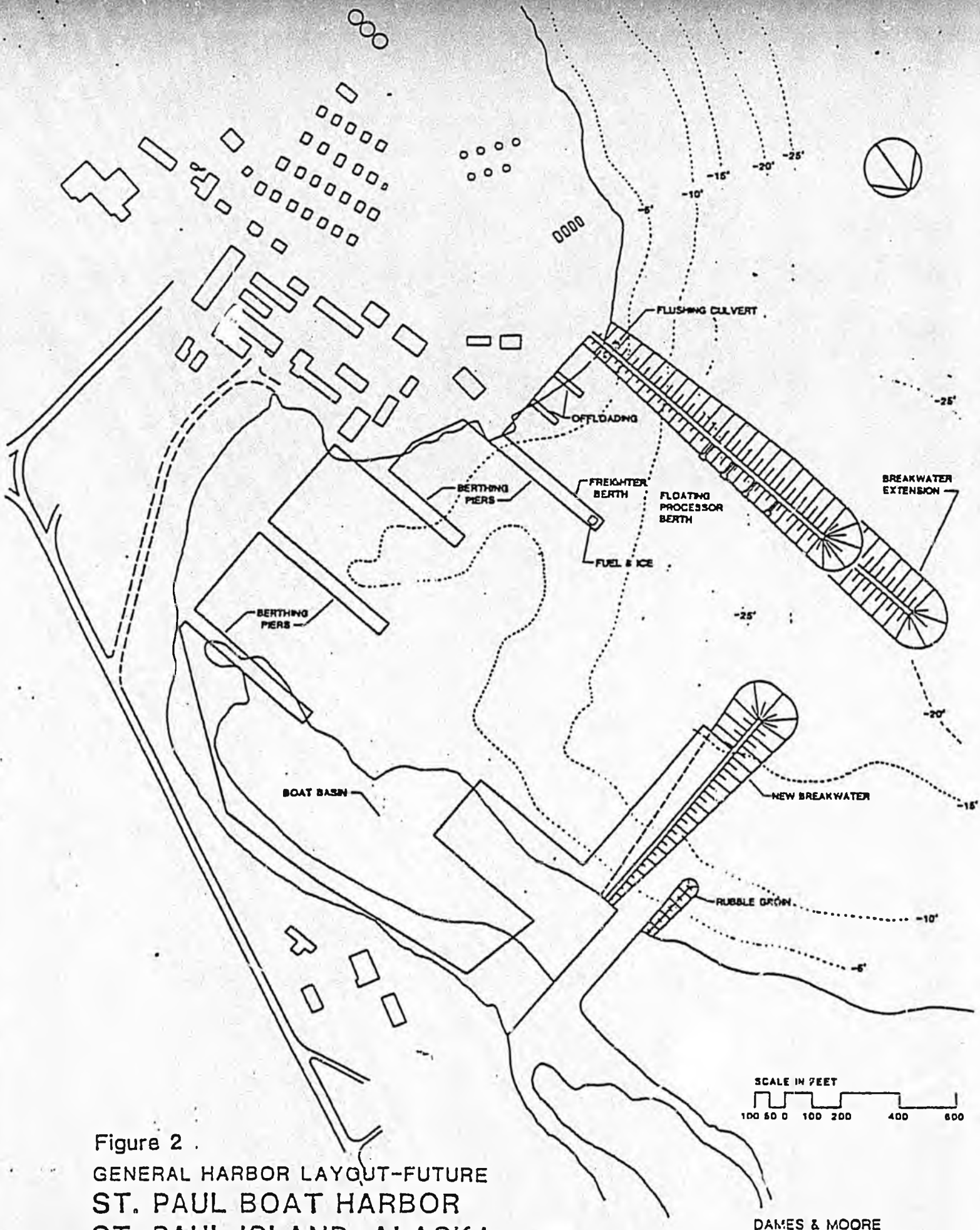


Figure 2 .

GENERAL HARBOR LAYOUT-FUTURE

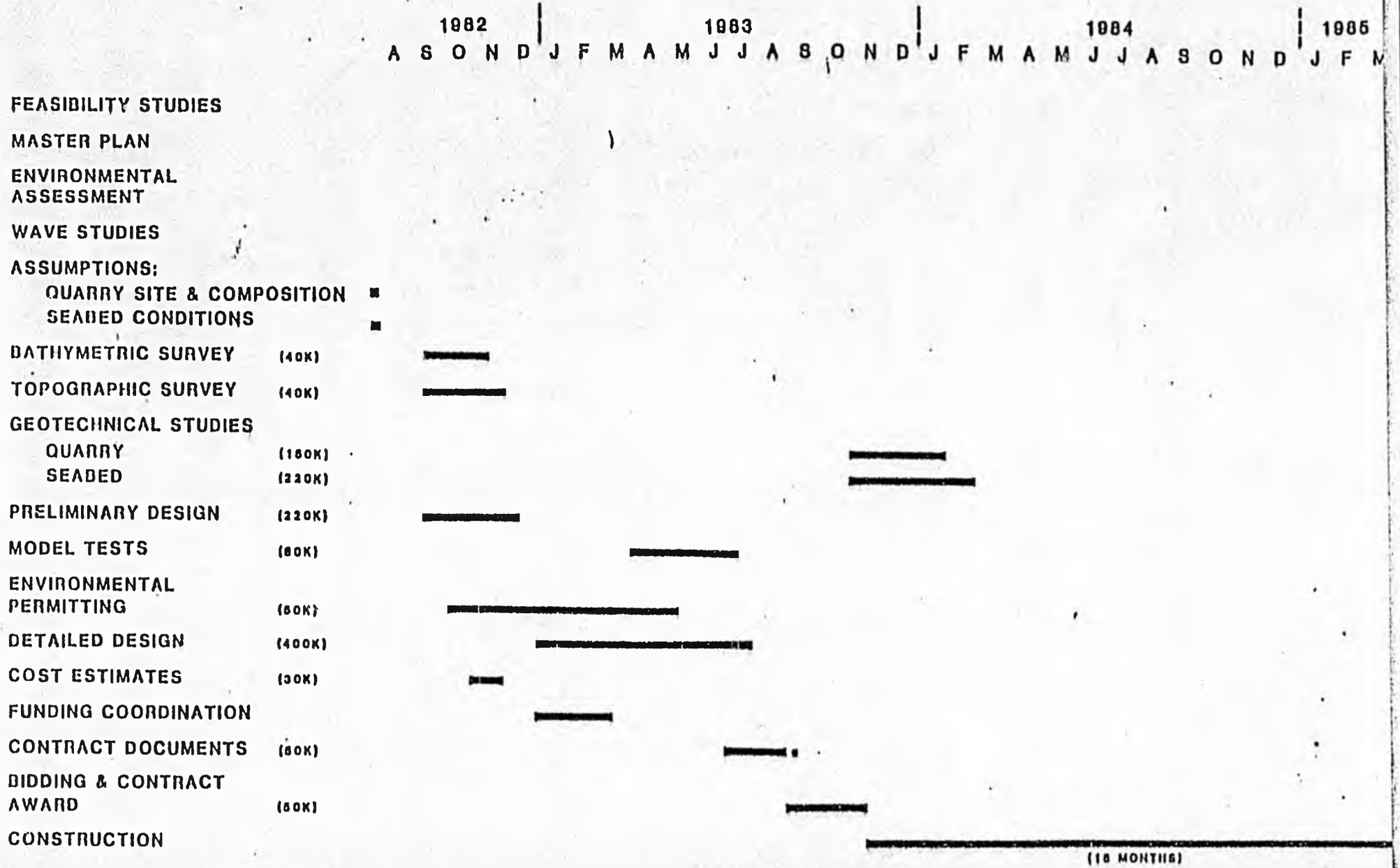
ST. PAUL BOAT HARBOR

ST. PAUL ISLAND, ALASKA

DAMES & MOORE
NORGAARD (USA) INC.

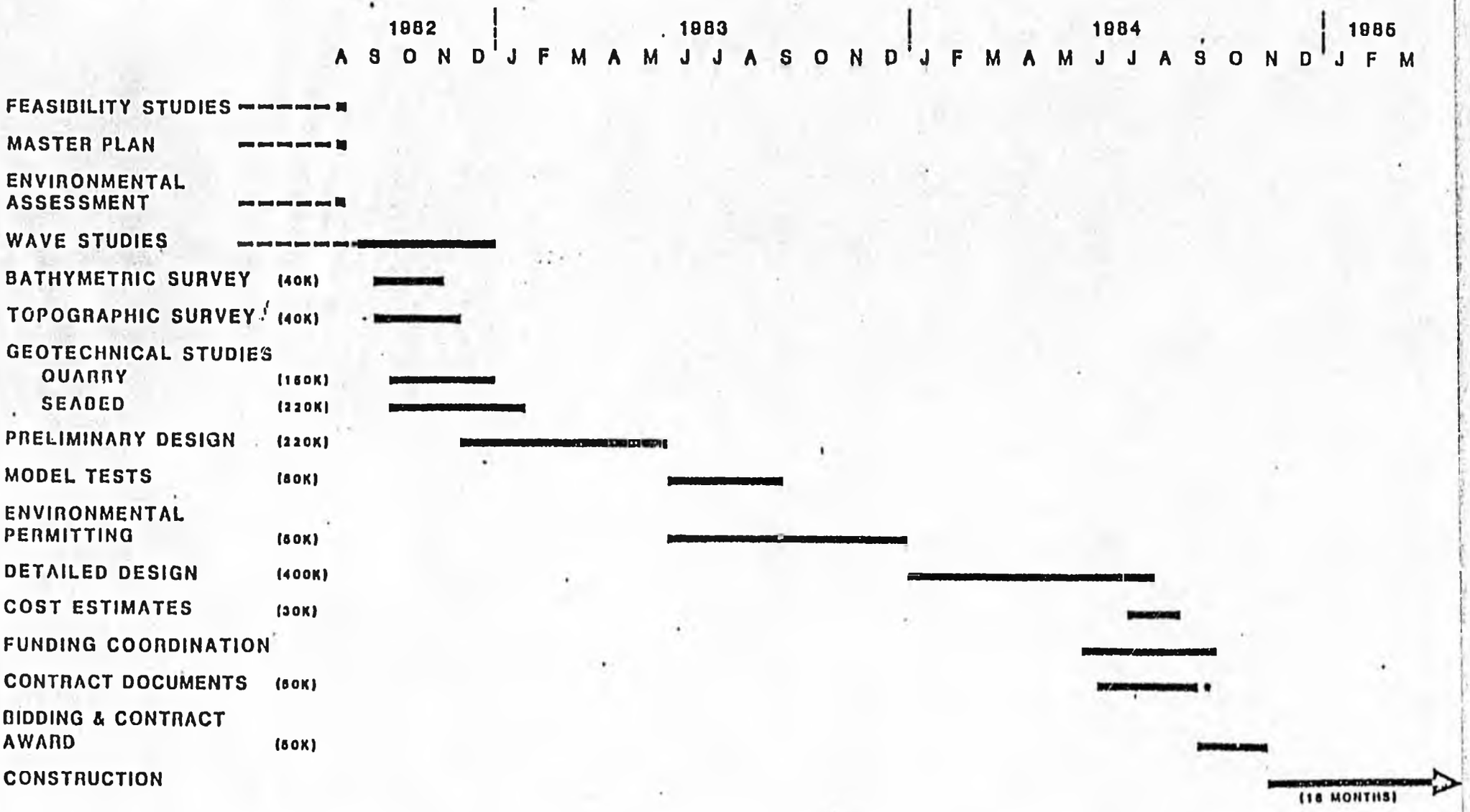
ST. PAUL BOAT HARBOR DEVELOPMENT SCHEDULE

FAST TRACK PROCEDURE



ST. PAUL BOAT HARBOR DEVELOPMENT SCHEDULE

STANDARD DESIGN PROCEDURE



NOTE: DOES NOT INCLUDE SEASONAL OR WEATHER DELAYS

APPENDIX.....

The following memorandum was previously prepared for the City of St. Paul to describe anticipated short-term employment and revenues generated by development of the St. Paul Boat Harbor.

ANTICIPATED SHORT-TERM
EMPLOYMENT AND REVENUE PROFILE
RELATED TO DEVELOPMENT OF ST. PAUL BOAT HARBOR

The purpose of this narrative is to briefly summarize the anticipated economic profile of employment and revenues directly related to harbor development at St. Paul Island as the role of National Marine Fisheries Service is phased out and is replaced by an economy based on commercial fisheries and related industries. (Unrelated activities, such as tourism, will also contribute, but are not included herein.)

Employment opportunities will vary as development progresses, but may be divided into several recognizeable components:

Harbor design and construction
Fishermen
Processing
Service industries
Other

In each of these areas, the skills and training of residents is a key factor in what percentage of the labor demand they will be able to meet. In general, it is to a business' advantage to hire locally and this is especially true at St. Paul. Initially, there will be a need for companies to bring in non-resident workers to perform some of the tasks until such time as residents are able to acquire the necessary skills and experience to take over those jobs.

For the design and construction of the boat harbor, design consultants and construction contractors will be hired to perform the work. While much of the work requires qualified specialists with extensive experience, many jobs can be performed by the local labor force. In the design phase, this would generally be in the form of technical assistants to the design consultants. The construction phase will provide the first opportunity for a significant amount of local employment. Also, since there will continue to be increased construction at St. Paul for some time to come, this initial work will provide valuable experience for local workers. Even

at this early stage, it may be possible for a local construction company to be formed to serve as a subcontractor in construction of the boat harbor. At this time the level of initial development remains uncertain. However, the following jobs could likely be filled by St. Paul residents in the design and construction phase, based on existing skills and experience:

Technical assistants	4
Equipment operators	10
Marine construction	4
Concrete workers	3
Carpenters	2
Laborers	6
Office assistance	4
TOTAL	33

The design and construction work will also generate indirect employment and business opportunities in providing food, lodging, maintenance and other services to the construction contractors. Following completion of the major construction activities, many of these workers can transfer their skills into maintenance or other construction activities on the Island.

St. Paul and Tanadgusix Corporation are involved in a training program aimed at providing residents with the necessary skills in fishing, navigation, vessel operation and maintenance, which will enable them to purchase and operate their own fishing vessels. Since loan capital is a limiting factor, many of these fishermen will initially serve as crewmen on other vessels operating out of St. Paul. Upon completion of the initial construction of the boat harbor, it is likely that up to 12 residents will be actively employed as commercial fishermen with a gradual increase to approximately 40 persons in 6-10 years.

Processing activities are initially envisaged as consisting of one floating processor in the harbor and one small to medium onshore processing plant. The number of resident workers in the processing plants is estimated at approximately 30 persons in the actual processing operations and 4-6 in administrative jobs.

This figure will increase as residents replace transient workers and as overall employment increases with development. The growth in processing employment is largely dependent upon the emphasis given to different species and product forms as development progresses.

There is likely to be a great demand for services at the St. Paul boat harbor. Fishing vessels and floating processors can remain on the nearby fishing grounds for longer periods if they are able to offload fish, take on provisions, and make repairs at St. Paul. Given time for sufficient training and experience, nearly all jobs in the service sector can be filled by St. Paul residents. A likely description of resident service industry jobs during early development is as follows:

Harbormaster and administrative	3
Fuel and ice	2
Cold storage	3
Stevedores	3
Electronics repair	1
Mechanic	1
TOTAL	13

With operations underway at the boat harbor, increased demands will be placed on other areas of the community. Expanded power plants, water and wastewater systems, and solid waste collection will require additional personnel for operation and maintenance. There will also be increased business for local merchants and restaurants which will likely result in new businesses and increased employment of residents.

Table 1 briefly describes an employment and wage profile for the sectors mentioned above, covering the period August, 1982 through December, 1987. The estimated wages are based on the wage factors indicated below the table. These factors are oversimplified approximations, but do give a general idea of what can be expected. It should be emphasized that the employment and wage figures in Table 1 are for St. Paul residents and do not include transient workers in construction, fisheries or related services.

There are several ways to consider the revenues generated by development of the boat harbor. In the broadest sense, this can be done by examining the value of

fish handled by the port. Tables 2 and 3 illustrate the annual value of fish landed (exvessel price) and the processed product (wholesale price) for St. Paul. Although this information is difficult to quickly translate in terms of local revenue, it does give an indication of the anticipated level of onshore commercial fisheries activities during early development. A significant increase results if the volume and value of fish transhipped via St. Paul is taken into account.

Table 1. RESIDENT EMPLOYMENT AND ESTIMATED WAGES RELATED TO ST. PAUL HARBOR DEVELOPMENT (August 1982-December 1987)

Description	1982		1983		1984		1985		1986		1987	
	No. Jobs	Total Est. Wages	No. Jobs	Total Est. Wages	No. Jobs	Total Est. Wages	No. Jobs	Total Est. Wages	No. Jobs	Total Est. Wages	No. Jobs	Total Est. Wages
A. Design & Construction	3	44,100	33	1,155,000	33	1,155,000	25	875,000	10	350,000	10	350,000
B. Fishermen	-	-	6	210,000	8	280,000	12	420,000	18	630,000	21	735,000
C. Processing	-	-	12	240,000	20	400,000	36	720,000	50	1,000,000	56	1,120,000
D. Service Industries	-	-	2	70,000	6	210,000	13	455,000	13	455,000	15	525,000
E. Other	-	-	-	-	2	70,000	8	280,000	18	630,000	20	700,000
		44,100		1,675,000		2,115,000		2,750,000		3,065,000		3,430,000

Wage Factors	
Design & Construction	$35,000./yr.
Fishermen	$35,000./yr.
Processing	$20,000./yr.
Service Industries	$35,000./yr.
Other	$35,000./yr.

Table 2. ANNUAL VOLUME AND VALUE OF LANDINGS AT ST. PAUL HARBOR.

Species	Volume (lb.)	Exvessel Price ($ per lb.)	Value ($)
Halibut	800,000	0.85	680,000.
Pacific Cod	1,000,000	0.21	210,000.
King Crab	1,200,000	1.00	1,200,000.
Hair Crab	1,500,000	0.70	1,050,000.
Tanner Crab	1,000,000	0.70	700,000.
TOTAL			$3,840,000.

Table 3. ANNUAL VOLUME AND VALUE OF PROCESSED PRODUCT AT ST. PAUL HARBOR.

Species (product form)	Volume (lb.)	Wholesale Price ($ per lb.)	Value ($)
Halibut (frozen H&G)	600,000	2.50	1,500,000.
Pacific Cod (frozen H&G)	252,000	1.00	252,000.
Pacific Cod (salted)	288,000	0.75	216,000.
King Crab (frozen sections)	600,000	3.50	2,100,000.
Hair Crab (frozen whole)	1,300,000	4.00	5,200,000.
Tanner Crab (frozen sections)	500,000	2.10	1,050,000.
TOTAL			$10,318,000.

NOTE REGARDING THE FOLLOWING FRAME(S) ON MICROFILM:
COMPLETE DOCUMENT IS AVAILABLE IN ORIGINAL FILES.
TITLE PAGE ONLY HAS BEEN FILMED.

BUSINESS & ECONOMIC DEVELOPMENT PLAN FOR ST. PAUL HARBOR & RELATED OPERATIONS

FEBRUARY 1983

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