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**OUZINKIE SMALL BOAT HARBOR
LETTER REPORT
OUZINKIE, ALASKA**

March 2001

SUMMARY

This report recommends the completion of the construction of the small boat harbor at Ouzinkie, Alaska, as recommended in the report *Supplement to the Small Boat Harbor Detailed Project Report, Ouzinkie, Alaska*, dated May 1996. The need for this project was investigated under the authority of Section 107 of the 1960 River and Harbor Act, as amended.

Ouzinkie is a native village 10 miles northwest of the city of Kodiak. The community is located on Spruce Island overlooking Narrow Strait, which separates the village from Kodiak Island. Access to Ouzinkie is only by water or air. The local economy is dominated by commercial fishing. There is no protected moorage for these vessels, and vessels must anchor offshore or tie to the existing city dock. At both moorages the vessels are buffeted by waves and swells, causing much damage. Construction of the small boat harbor would reduce damages to vessels and the existing dock, and reduce vessel operating cost and delays.

The project, as authorized under the 1996 report, consisted of a 612 ft long crescent-shaped rubblemound breakwater and would provide moorage for 72 vessels in a 2-acre basin. The mooring area would provide protected moorage for permanent and transient vessels. The entrance channel depth would be -16 ft MLLW. Dredging at the entrance channel and fairway, and mooring basin would require 18,400 yd³ of excavation. The breakwater would be detached from shore and constructed in water depths from 0 to -25 ft MLLW. The breakwater design requires a total of 16,600 yd³ of primary armor rock, 9,800 yd³ of secondary armor rock, and 20,900 yd³ of core material.

During the initial construction of the project in 1998, rock outcroppings within the dredging limits were encountered. The rock outcroppings resulted in the project scope being reduced because sufficient funds were not available to remove all the rock outcroppings and complete the breakwater. The sediments, primarily sand and gravel, that could be removed without rock blasting or similar methods were dredged from the mooring basin and entrance channel leaving 8,200 yd³ of rock material to be dredged. About 330 linear ft of the required 600 ft of breakwater was constructed. Due to the rock blocking access to the proposed mooring basin, the planned moorage floats were not installed, and only partially protected moorage is provided by the project.

In this letter report, several alternatives were evaluated at the partially completed project to reduce the without-project damages. These alternatives ranged from leaving the project uncompleted, complete the breakwater with no dredging, to completing the authorized project. Alternative 2 (Complete the Authorized Project) was chosen as the National Economic Development (NED) plan because it maximized the net NED benefits. Alternative 2 has a benefit to cost ratio of 2.0, with a total NED investment cost of \$5,012,000, an equivalent annual NED cost of \$352,000, and annual benefits of \$706,000. First cost of the project is \$4,869,000, of which, \$3,413,000 is the cost of the remaining GNF features. The total cost to complete the project, which includes the cost of \$5,047,000 during the initial construction and the remaining cost of \$4,869,000, is \$9,916,000.

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PERTINENT DATA

Recommended Plan (Alternative 2)

Basin		Breakwater	
Area	2.0 ac	Design wave	7.4 ft
Basin depths (MLLW)	-9, -11, -13 ft	Length	270 ft
Entrance channel depth	- 16 ft MLLW	Crest elevation	17.0 ft MLLW
Dredging volume		Crest width	9.5 ft
Entrance channel	1,500 yd ³	Rock volume	
Maneuvering channel	1,000 yd ³	Primary armor	8,500 yd ³
Mooring basin	5,700 yd ³	Secondary rock	8,100 yd ³
Total	8,200 yd³	Core	11,200 yd ³

Remaining Project Construction Costs^a

Item	Federal (\$)	Non-Federal (\$)	Total (\$)
General Navigation Features ^b	6,415,000	1,393,000	7,808,000
Local Service Facilities (includes LSF LERR) -associated costs ^c	–	1,935,000	1,935,000
LERR – GNF	–	169,000	169,000
Navigation aids—U.S. Coast Guard	4,000	–	4,000
	Subtotal ^d		
	6,419,000	3,497,000	9,916,000
Credit for Phase I Expenditures	(4,038,000)	(1,009,000)	(5,047,000)
	TOTAL		
	2,381,000	2,488,000	4,869,000

NED investment cost (includes interest during construction)	5,012,000
Annualized initial cost plus interest during construction	335,000
Average annual NED maintenance cost	17,200
Total average annual cost	352,000
Average annual NED benefits	706,000
Net annual NED benefits	354,000
Benefit/cost ratio (6-3/8% interest)	2.0

^a Basic assumptions: (1) October 2000 price level (FY 01 CRF); (2) 50-year project life

^b Cost sharing reflects provisions of the Water Resources Development Act of 1986 – non-Federal initial share 10% of GNF plus reimbursement of 10% GNF minus LERR credit

^c NED = National Economic Development

^d Subtotal costs reflect cost sharing of the total cost for the partially completed project and the remaining cost of the Recommended Plan in this Letter Report

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1.0 Study Authority

Authority for the preparation of this letter report for the Ouzinkie Small Boat Harbor Project is contained in Section 107 of the 1960 River and Harbor Act, as amended. For this project, Public Law 106-53 increases the maximum Federal expenditures from \$4,000,000 to \$8,500,000 and requires a revised Project Cooperation Agreement be implemented.

2.0 Study Purpose

The purpose of this study is to prepare a decision document and present recommendations regarding the partially completed small boat harbor project at Ouzinkie, Alaska. Construction of the project, as recommended in the report *Supplement to the Small Boat Harbor Detailed Project Report, Ouzinkie, Alaska*, dated May 1996, was ceased after partial construction due to cost overruns as a result of differing site conditions, control data discrepancies, and an increased armor stone quantity.

This project is a Continuing Authority Project, Section 107, that originally had a maximum allowable Federal authorization of \$4,000,000. Due to increased project costs, Congressional legislation has raised the maximum allowable Federal authorization to \$8,500,000. Once this decision document is approved and an amended Project Cooperation Agreement is implemented, a new contract will be prepared to complete the project as recommended herein.

3.0 Project Location And Current Conditions

The Ouzinkie harbor project is located on Spruce Island, which is about 10 miles northwest of the city of Kodiak Island, Alaska. The general location of Ouzinkie is shown in figure 1.

4.0 Authorized Project

The authorized project for the Ouzinkie small boat harbor consists of a 612 ft long crescent-shaped rubblemound breakwater and would provide moorage for 72 vessels in a 2 acre basin dredged at stepped depths of -13 ft, -11 ft, and -9 ft MLLW. The mooring area would provide protected moorage for permanent and transient vessels. The entrance channel depth would be -16 ft MLLW.

The rubblemound breakwater would provide protection from locally generated waves and ocean swell conditions. A non-breaking wave of 7.4 ft in height was used for design of the breakwater. The breakwater would be detached from shore and constructed in water depths from 0 to -25 ft MLLW. Crest elevation of the breakwater would be 17 ft MLLW, which would be overtopped during infrequent high tides concurrent with long-period swell conditions. A single row of primary armor stone would be placed on the breakwater crest to further dissipate wave energy during the overtopping. A plan view of the authorized project is shown on figure 2.

Figure 1 Ouzinkie map

figure 2 plan view of authorized project

The breakwater cross-section is composed of a 6.5-ft thick layer of primary armor rock, a 3-ft thick secondary layer, and a core. The breakwater would consist of 16,600 yd³ of primary armor rock, 9,800 yd³ of secondary armor rock, and 20,900 yd³ of core material.

The entrance channel is designed to accommodate one-way traffic for a 47-ft design vessel. The channel is 80 ft wide and includes a 29-degree bend. Dredging at the entrance channel would require 700 yd³ of excavation. The fairway and mooring basin would require 17,700 yd³ of excavation.

4.1 Completed Portion of the Project

The portion of the project constructed prior to exceeding the funding limits includes 330 ft of the breakwater and the dredging of about 7,900 yd³ of sediments in the mooring basin and entrance channel. The partially completed project is shown in figure 3. The breakwater begins at about 100 ft from shore and extends in a “crescent” shape approximately 330 feet. All of the sediments, primarily sand and gravel, that could be removed without rock blasting or similar methods were dredged from the mooring basin and entrance channel, leaving 8,200 yd³ of rock material to be dredged. A summary of the dredged quantities for the completed portion of the project is shown in Table 3.

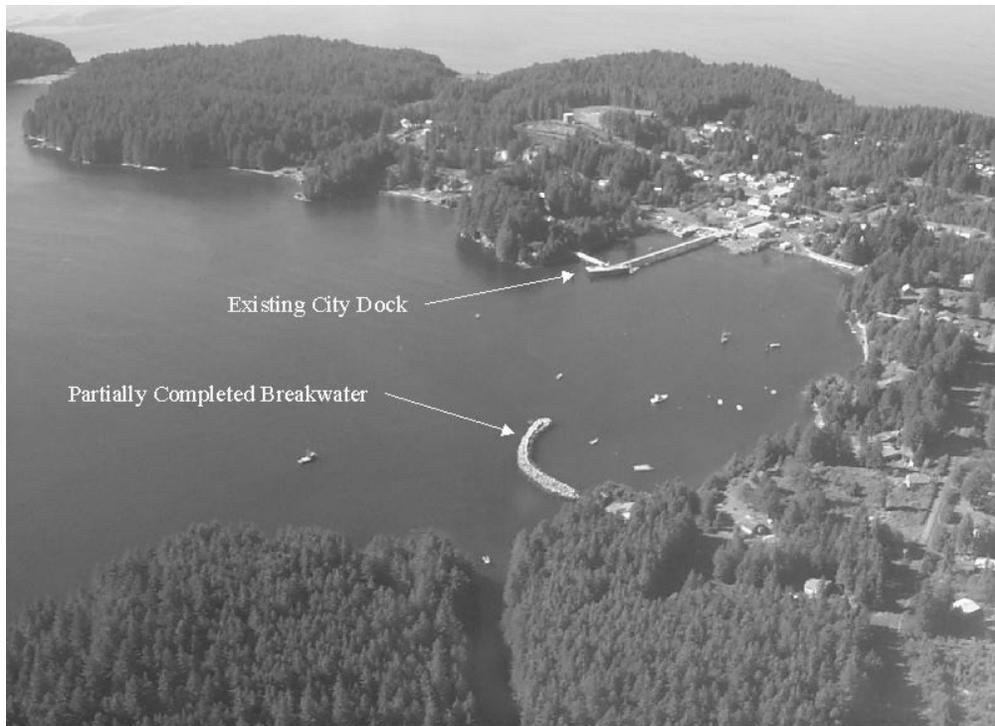


Figure 3 Aerial Photograph of Partially Completed Project

4.2 Project Cost Increases

Cost increases during the initial project construction are broken out into three categories: (1) differing site conditions (rock outcroppings), (2) survey control data discrepancies, and (3) additional rock requirements. The rock outcroppings resulted in the project scope being reduced because sufficient funds were not available to remove all the rock outcroppings and complete the breakwater.

4.3 Rock Outcroppings

Rock outcroppings were encountered along the breakwater alignment and in the entrance channel and mooring basin once construction of the project had begun. The first rock outcropping was located adjacent to station 5+75 of the breakwater. The rock outcropping was not shown on the original contract drawings and could not be removed using conventional dredging methods.

The second rock outcropping blocks access to the mooring basin. This rock outcropping is as high as -4 ft MLLW and is located in an area that needs to be dredged between -11 and -16 ft MLLW. This outcropping is estimated to contain 8,200 yd³ of rock, which needs to be dredged. About 30 percent of the rock outcropping is located in the entrance channel, and the remaining 70 percent is located in the mooring basin.

As a result of the second outcropping, the cost to finish the entire breakwater structure would have exceeded the \$4,000,000 Federal spending limit, and the local sponsor did not have funds available to pay for this increased cost. A construction contract modification was implemented to reduce the overall length and profile of the breakwater structure to station 4+20 and then transition into a rounded end structure to stay within the Federal funding limit and the sponsor's available funds.

4.4 Survey Control Data Discrepancies

Survey control discrepancies on the plans and specifications were discovered once the contractor mobilized and attempted to verify the survey plan in the specifications. Verification and correction of the survey resulted in a work stoppage until the survey data was rectified. A contract modification was implemented to compensate the contractor for the delay.

4.5 Additional Rock Requirements

When the final survey was complete, it was determined that the contractor had not placed enough rock in the breakwater to meet the design profile. Surveys by both the contractor and the government indicated the breakwater was not constructed to the design template. The contractor did not place enough rock in areas that were submerged. A construction contract modification was issued to pay for the additional rock required but no additional costs for mobilization and demobilization were allowed since the contractor had not met the design profile. The remedial rock placement was completed in October 1999.

5.0 Plan Formulation

5.1 Previous Alternatives

Project alternatives were previously developed in a feasibility study titled *Small Boat Harbor, Detailed Project Report and Environmental Assessment, Ouzinkie, Alaska*, May

1995, and in the *Supplement to the Small Boat Harbor, Detailed Project Report, Ouzinkie, Alaska*, May 1996.

The detailed project report evaluated more than a dozen harbor plans at five locations to reduce the probability of boat loss and damage for the Ouzinkie fleet. Locations examined included three sites in the Ouzinkie waterfront area, one in Eskimo Cove east of the city, and one in Pineapple Cove to the north of the city. Alternative 1D at the Ouzinkie waterfront maximized the net economic benefits. After the selection of the Recommended Plan, an optimization analysis was performed to determine the optimum depth of the entrance channel.

The supplemental report revises Alternative 1D. The agencies noted that the original layout of Alternative 1D was too small to serve the existing transient vessel traffic at Ouzinkie while accommodating projected growth in the resident fleet. The three-float plan was subsequently devised. The revised float plan would require a larger mooring basin and would provide protected moorage for an additional 22 transient vessels in summer and 15 in winter (the winter vessels are larger). The revised float plan was determined to provide the following advantages over the initial plan.

- The three-float plan would allow more flexible use of the harbor if local fisherman purchased larger vessels.
- It would accommodate the fleet that moors behind Spruce Island during storms.
- It would accommodate an 80-ft vessel if needed.

The net economic benefits for the three-float plan were determined to be greater than that of the original plan. As a result of the greater net economic benefits, the three-float plan was selected as the Recommended Plan and subsequently the authorized project.

5.2 Additional Alternatives

The alternatives considered in the 1995 report and 1996 supplement covered the full range of alternatives for navigation improvements at Ouzinkie. During the study process for this letter report, the study team did not identify any new alternatives beyond those involving the partially completed project. The following four alternatives were evaluated for the partially completed project:

Alternative 1: Leave the Project Uncompleted. The partially completed breakwater and dredging provides approximately 0.3 acre of partially protected moorage area. The moorage area of the authorized project was 2.0 acres. Because of the rock outcropping, basin depths would be inadequate for full-time access and would pose problems for moored vessels during low tides as the top of the rock elevations are as high as -3 to -4 ft MLLW. Vessels moored in these areas would sustain damages from hitting the rock outcroppings during low tides and while accessing the moorage facilities. The limited depths would allow the 10-vessel Ouzinkie subsistence fleet and 14 transient vessels in the 30- to 40-ft-long range to partially benefit from the project. The authorized project would have accommodated 72 vessels. Because of the limited access to the mooring basin and the limited usability of the basin itself, not completing the project would allow about 10 percent of the NED benefits to be realized.

Alternative 2: Complete the Authorized Project. This alternative would consist of completing the construction of the authorized project. The existing breakwater would be extended from its current length of 330 ft to 600 ft, following the alignment and design template of the original design. Approximately 8,500 yd³ of armor rock, 8,100 yd³ of B rock, and 11,200 yd³ of core material is needed to complete the breakwater as originally designed.

Approximately 8,200 yd³ of rock excavation would be required to obtain the project depths in the entrance and maneuvering channels and mooring basin. This quantity includes a 1-ft overdepth tolerance to account for unevenness of the dredging associated with blasting of the rock outcroppings. The Federal portion of the dredging, which includes the entrance and maneuvering channels, is 2,500 yd³. The local share of the dredging, which includes the mooring basin, is 5,700 yd³. Figure 4 shows the remaining portion of the project to be completed, including the approximate limits of the remaining the Federal and local areas of dredging responsibility.

This alternative would allow all of the project's NED benefits to be realized and would maximize the net NED benefits. Alternative 2 is preferred by the local sponsor. Federal and local sponsor funds would be available to complete the authorized project.

Alternative 3: Complete the Breakwater and No Dredging. Alternative 3 would consist of completing the breakwater according to the authorized design and not perform the remaining dredging of the entrance and maneuvering channels and mooring basin. However, the limited depths of the entrance depths due to the rock outcroppings would prohibit additional vessels beyond that identified in Alternative 1 from using the basin. This alternative would allow about 10 percent of the NED benefits to be realized.

Alternative 4: Complete the Breakwater, No Dredging, and Realign the Floats in the Mooring Basin. Alternative float alignments for the mooring basin were previously considered as part of the study process for the 1996 supplemental report. The alignment that would maximize the NED benefits and allow the most vessels to utilize the mooring basin was recommended in that report. As with Alternatives 1 and 3, this alternative would not require additional dredging to remove the rock outcroppings and the same limiting depth-condition would exist. Therefore, this alternative would allow about 10 percent of the NED benefits to be realized.

Figure 4.

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5.3 Environmental Concerns

The current harbor design was evaluated in an Environmental Assessment (EA) dated August 1996, *Expanded Three-Float Plan Ouzinkie Small Boat Harbor, Ouzinkie, Alaska*. A Finding of No Significant Impact (FONSI) was signed on November 6, 1996. An updated FONSI is provided in Appendix A. In this EA the potential for blasting was evaluated and concluded that blasting could occur without a significant effect if conducted at the appropriate time and method. An updated Alaska Coastal Management Program review was conducted to review the Corps of Engineers' blasting plan. A final consistency finding was issued with resource agency agreement.

Updated endangered species coordination found that the project area is within proposed critical habitat zone of the threatened Steller's eider. The Steller's eider is a sea duck that uses coastal waters in the region as winter habitat. A biological assessment was prepared with the finding that the project is not likely to have an adverse effect on the Steller's eider or its critical habitat. The short-tailed albatross, an endangered species, also may occur in the general area. The biological assessment prepared for this species determined that the project is not likely to have an adverse effect. The U. S. Fish and Wildlife Service concurred with this determination. The National Marine Fisheries Service has stated that there are no concerns with the endangered Steller's sea lion if the blasting plan is implemented. Environmental coordination letters are contained in Appendix A.

6.0 Comparison of Alternatives

Alternatives 1, 3, and 4 have a common element, which is no dredging. Not dredging the entrance and maneuvering channels and mooring basin would prohibit full-time access and would pose problems for moored vessels during low tides as the top of the rock elevations are as high as -3 to -4 ft MLLW. Vessels moored in these areas would sustain damages from hitting the rock outcroppings during low tides and while accessing the moorage facilities. The limited access to the mooring basin and limited usability of the mooring basin would allow about 10 percent of the NED benefits to be realized for these alternatives.

Alternative 2 consists of completing the breakwater construction and dredging the entrance and maneuvering channels and mooring basin. Dredging would allow the vessels to have full-time access to the mooring basin and remain within the basin during low tides. The completed breakwater would minimize damages within the basin during storm events. Alternative 2 would allow the full NED benefits to be realized. Because Alternative 2 would allow the full NED benefits to be realized and would maximize the net NED benefits, it was selected as the Recommended Plan. Physical characteristics of the plan are shown in Table 3.

7.0 Economics Summary

The economic analysis was based on the *Supplement to the Small Boat Harbor Detailed Project Report*. The economic data and conditions for the project are unchanged from that report, so are not repeated here.

The partially completed project provides limited access and partially protected moorage for the 10-vessel Ouzinkie subsistence fleet and 14 transient vessels in the 30- to 40-ft-long range. The limited access and partial protection within the mooring basin is due to the rock outcroppings located within the entrance channel and mooring basin. During low tides the

deeper draft vessels can not safely navigate the entrance channel. During storm events or low tides vessels moored within the basin must leave to prevent hull damage from the rocks.

To determine the remaining economic benefits, the benefits from the partially constructed project were subtracted from those for the authorized project. The resultant was the benefits for completing the authorized project. A summary of the economic benefits of the authorized project, partially completed project, and the Recommended Plan is shown in Table 1. The benefit categories of the economic analysis are discussed below:

Moorage Expenses. The partial breakwater will not eliminate the need for the buoy system used for moorage. A detailed description of the mooring system is provided in Section 3.2 of the 1995 report. The partial breakwater will only provide convenience moorage during the summer months, and vessels will relocate to the mooring systems during the rest of the year.

When the project is completed there will be no need to keep and maintain the mooring systems in Ouzinkie Bay. The need for anchors, parts, and the maintenance of the mooring systems is totally eliminated. Benefits for mooring expenses associated with anchors, parts, and maintenance are estimated to be \$9,600.

Lost Vessels. The 1995 report documented that several vessels had been sunk or damaged beyond repair during the last 10 years. Commercial fishermen estimate that one fishing boat is lost entirely about every 2.5 years. Historically, vessels have incurred the majority of major damages and are lost during winter storms. The partial breakwater will not adequately protect vessels to reduce the probability of incurring major damage or being lost. Therefore, no benefits were realized for the partially completed project. Completing the project will reduce the cost associated with lost vessels estimated to be \$144,100.

Vessel Damages. Vessels are damaged each year at the mooring buoys on the dolphins, and at the Ouzinkie Native Corporation Dock. Winds and waves cause them to pound one another and strain lines. Damages are separated into two types: minor and major. A detailed description of vessel damages is provided in Section 3.3 of the 1995 report.

The 1995 report estimated that about 80 percent (\$114,600) of minor and major damage would be eliminated with a project. The partial breakwater would eliminate some additional vessel damages by providing summer moorage at the foot installed by the State of Alaska. It is estimated that the partial breakwater eliminates 25 percent of minor and major damage, about \$28,700. Project completion will provide \$85,900 in damage reduction.

Watching Vessels During Storms. During storms, vessels moored in Ouzinkie Bay must be monitored so the crew can decide whether to move from the bay. Because the partially completed breakwater does not provide full protection, vessel crews must still monitor their vessels during storm events. Completion of the project will allow the full benefits of \$22,800 to be realized.

Trips To Protected Coves. Commercial vessels move from Ouzinkie Bay to protected areas prior to storms about 16 times each year. On average, the fleet runs from 12 major storms during winter and four storms during spring, summer, and fall. The partially completed breakwater does not provide adequate protection to prevent the need for trips to protected coves. Project completion will therefore provide \$150,900 in savings.

Mooring System Travel Cost. This expense is incurred when operators travel between their vessels moored on buoy systems using small skiffs launched from shore. The moorage

provided by the partial breakwater during the summer saves operators about \$10,000 each year. Project completion will provide an additional \$19,500 in travel cost savings.

Moving Vessels Away From Dock. The partial breakwater has eliminated the cost associated with moving vessels away from the Ouzinkie Native Corporation Dock. No additional benefits would be realized by completion of the project.

Hauling and Launching Vessels. This category covers the expense of hauling smaller vessels out in the fall and launching them in the spring. The partial breakwater provides no reduction in this expense category. The total annual cost of hauling vessels out of and into the water is estimated at \$400.

Round Trips to Kodiak. Round trips to Kodiak by plane are necessary to replace those trips that would have been made by damaged or lost vessels. The partial breakwater does not reduce the likelihood of vessels incurring major damage or being lost during storm events. Therefore, the number of trips to Kodiak is not reduced from that in the 1996 supplement. Project completion will eliminate the \$19,600 annual expense to community residents.

Dock Damages. The partial breakwater eliminated damages to the Ouzinkie Native Corporation Dock from vessels during storm events.

Maintenance Costs for Public Facilities. The partial breakwater provides protection to about 50 percent of the public boardwalk. Maintenance cost for the public boardwalk will be reduced by about 50 percent to \$2,000. The remaining benefit of \$2,000 would be realized by the completed project.

Transportation Costs for Relocated Fishermen. Four fishermen were identified in the 1996 supplement as wanting to move back to Ouzinkie if a project was constructed. These vessels would be accommodated by the partial breakwater. Therefore, no benefits would be realized for the completed project.

Lost Food and Equipment. Losses of food and equipment have been reduced by about 50 percent for the partial breakwater condition. The remaining benefit of \$1,000 would be realized by the completed project.

Transient Vessels Waiting Out Storms. None of the transient vessels identified in the 1996 supplement would benefit from the partial breakwater. Completion of the breakwater would allow the full benefits of \$156,400 to be realized for transient vessels.

Transient Moorage Use. The 1996 supplement identified 18 salmon vessels that would use Ouzinkie Harbor for transient moorage during an average 18.5 closures. Completion of the breakwater would allow the full benefits of \$66,700 to be realized for moorage use by transient vessels.

Benefits of Recommended Plan by Category. The total remaining annual benefit is \$706,000.

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Table 1. Remaining Annual Benefits Of Recommended Plan By Category

Benefit Category	1996 3-Float Plan	Benefits of Partially Completed Project	Remaining benefits of Recommended Plan
Moorage Expenses	\$9,600	\$0	\$9,600
Lost Vessels (commercial \$75,500, mid-size \$38,300, skiffs \$30,300)	\$144,100	\$0	\$144,100
Vessel Damages	\$114,600	\$28,700	\$85,900
Watching Vessels During Storms	\$22,800	\$0	\$22,800
Trips to protected cove	\$150,900	\$0	\$150,900
Mooring system travel costs	\$29,500	\$10,000	\$19,500
Moving vessels away from dock	\$5,800	\$5,800	\$0
Hauling and Launching Vessels	\$400	\$0	\$400
Round trips to Kodiak	\$19,600	\$0	\$19,600
Dock damages	\$39,700	\$39,700	\$0
Maintenance costs for public facilities	\$4,000	\$2,000	\$2,000
Transportation costs for fishermen who moved away	\$4,400	\$4,400	\$0
Lost Food and Equipment	\$2,000	\$1,000	\$1,000
Transient Vessels Waiting out storms	\$156,400	\$0	\$156,400
Transient moorage	\$66,700	\$0	\$66,700
Less delay costs	(\$200)	\$0	(\$200)
Annual Benefits(w/o NED employment)	\$770,300	\$91,600	\$678,700
NED employment benefits	\$27,300	\$0	\$27,300
Annual Benefits(w/ NED employment)	\$797,600	\$91,600	\$706,000

8.0 Real Estate

The City of Ouzinkie will need to furnish additional real estate interests required to complete project construction. Initial real estate requirements included 2-year temporary work area easements for an upland staging area (1 acre) and a disposal site (2 acres). The Federal Government exercised its right of navigational servitude for all lands below mean high water. Upland interests are owned by the City of Ouzinkie. The same staging area and disposal site will be required to complete project construction. The City will be required to furnish additional 3-year temporary easements for the staging area (1 acre) and disposal site (1 acre). The Government will exercise navigation servitude for lands below mean high water. Additionally, the City has asked the Government to perform its inner harbor dredging. Dredged material from the inner harbor will be deposited at the City landfill. The City will need to make the 1-acre area available for a 3-year period; however, this land is not eligible for credit as LERRD. A real estate map identifying the areas needed to complete the project is shown on figure 5.

A gross appraisal was not prepared for this report; however, based upon previous value estimates for these lands real estate costs to complete this project are estimated as follows:

Table 2. Real Estate Costs

Item	Amount
Lands	\$10,000
Administrative, Non-Federal	\$500
Administrative, Federal	\$1,500

Figure 5

9.0 Recommended Plan

9.1 Plan Components

Because Alternative 2, Complete the Authorized Project, allows the full NED benefits as determined in the *Supplement to the Small Boat Harbor Detailed Project Report* to be realized and maximizes the net NED benefits, it was selected as the Recommended Plan. The physical characteristics of the partially completed project, Recommended Plan, and authorized project (Recommended Plan plus partially completed project) is shown in Table 3. The project costs, benefits, and benefit to cost ratio are provided in Table 4.

Table 3. Physical Characteristics

	Partially Completed Project	Recommended Plan (Complete Authorized Project)	Authorized Project (Recommended Plan plus Partially Completed Project)
Entrance and maneuvering channel (-16 ft MLLW)			
Area (ac)	0.3	0.4	0.7
Quantity (cy)		2,500	2,500
Mooring basin (-13, -11, & -9 ft MLLW)			
Area (ac)	0.6	0.8	1.4
Quantity (cy)	12,000	5,700	17,700
Breakwater			
Breakwater length (ft)	330	265	595
Fill finish elevation (ft, MLLW)	+17	+17	+17
Core quantities (cy)	9,700	11,200	20,900
Secondary quantities (cy)	1,700	8,100	9,800
Armor quantities (cy), $W_{50} = 1304$ lb	8,100	8,500	16,600

9.2 Consultation Requirements

This alternative was evaluated in the EA dated August 1996 and a Finding of No Significant Impact was signed on November 6, 1996. This alternative was reevaluated during this study and an updated FONSI was signed February 2001. A biological assessment was prepared with the finding that the project is not likely to have an adverse effect on the Steller's eider or its critical habitat, the short-tailed albatross or the Steller's sea lion. The U. S. Fish and Wildlife Service and National Marine Fisheries Service have stated that there are no fish and wildlife concerns if the blasting plan is implemented.

9.3 Public Coordination

The city of Ouzinkie and the State of Alaska has been an integral part of the study process during the development of this report and its recommendation. The city of Ouzinkie has stated their preference for the Recommended Plan.

Table 4. Project Costs, Benefits, and Benefit to Cost Ratio

Mobilization and Demobilization	434,000
Breakwater and Seawall Construction	2,075,000
Dredging	795,000
Inner Harbor Development	948,000
Construction Contract Cost	4,252,000
Lands and Damages	14,000
Planning, Engineering, and Design	143,000
Construction Management	456,000
Subtotal	613,000
Project Cost	4,865,000
Interest During Construction ^a	147,000
NED Investment Cost	5,012,000
Annual NED Cost (50 years at 6 3/8%)	335,000
Annual OMRRR ^b	17,200
Total Annual NED Cost	352,000
Vessels Accommodated	72
Annual Benefits	
Average Annual Benefits	\$706,000
Benefits to Cost Ratio	2.0
Net Annual Benefits	\$354,000

^aIncludes interest on PED, 12 months at 6 3/8%

^bReplacement of 2% of the armor stone every 15 years

9.4 Plan Costs and Apportionment

Interest during construction (IDC) was added to the initial cost to account for the opportunity cost incurred during the time after the funds have been spent, but before the benefits begin to accrue. IDC was calculated by matching the construction expenditure flow with the interest the funds would have accumulated had they been deposited in an interest-bearing account. Preconstruction, engineering, and design (PED) was assumed to take six months. Construction is expected to last 12 months. For this analysis, level monthly expenditures were assumed.

The initial cost and cost apportionment of the Recommended Plan are shown in Table 5. A detailed M-CACES cost estimate is provided in Appendix B. Initial cost of the Recommended Plan is \$4,865,000, excluding \$4,000 for navigation aides to be provided by the U.S. Coast Guard. Interest on the plans and specifications for twelve months at 6 3/8 percent was calculated as \$2,000 and was added to the initial cost before IDC was calculated. The IDC for the initial cost is \$147,000. The annual cost equals \$335,000. Including the annual operation and maintenance cost of \$17,000, the total annual cost of the Recommended Plan is \$352,000. With an annual economic benefit of \$706,000, the benefit to cost ratio is 2.0.

The estimated Federal share of the General Navigation Features (GNF) for the Recommended Plan is \$2,377,000, excluding the cost of \$4,000 for navigation aides. The non-Federal share of the GNF is \$1,036,000 and \$1,451,500 for the local service facilities.

9.5 Total Federal and Non-Federal Costs

This project is a Continuing Authority Project, Section 107, which originally had a maximum allowable Federal authorization of \$4,000,000. Due to increased project costs, Congressional legislation raised the maximum allowable Federal authorization to \$8,500,000. The total project cost, which includes the cost of \$5,047,000 expended on the partially completed project plus the cost of the Recommended Plan, is \$9,916,000. The total Federal cost is estimated to be \$6,419,000, which includes the remaining cost of \$2,381,000 for the Recommended Plan. The total non-Federal cost is \$3,497,000, which includes the remaining cost of \$2,488,000 for the Recommended Plan.

A final cost sharing adjustment was not conducted at the end of construction of the partially completed project because it was reasoned that the project would be modified to some extent in the near future. Therefore, the Federal and non-Federal expenditures for the partially completed project do not reflect the cost sharing as stated in WRDA 1986. The final initial implementation costs shown in Table 5 were adjusted to reflect the expenditures for the partially completed project.

Table 5. Federal/Non-Federal Cost Apportionment for Recommended Plan*(October 2000 price level)*

Items	Total Project Cost	Implementation Costs			
		Federal	%	Non-Federal	%
General Navigation Features (GNF)-Ph I					
Engineering and design	495,247	445,722		49,525	
Construction contract	3,699,815	3,329,834		369,982	
Letter report	200,000	180,000		20,000	
Subtotal GNF (Ph I)	4,395,062	3,955,556	90	439,507	10
General Navigation Features (GNF)-Ph II					
Entrance channel and maneuvering area	289,000	260,100		28,900	
Breakwaters	2,090,000	1,881,000		209,000	
Mobilization/demobilization	434,000	390,600		43,400	
Engineering & design	143,000	128,700		14,300	
Construction management (S&A)	455,000	409,500		45,500	
LERR (GNF) - Administrative costs	1,500	1,350		150	
Subtotal GNF, Ph II (Remaining Req'mt) -	3,412,500	3,071,250	90	341,250	10
TOTAL INITIAL GNF COST	7,808,000	7,027,000	90	781,000	10
Local Service Facilities (Ph I)	483,325			483,325	
Local Service Facilities (Ph II)					
Mooring basin and disposal	491,000	0		491,000	
Floats	948,000	0		948,000	
LERR (LSF)	12,500	0		12,500	
Subtotal (Local Service Facilities-Ph II)	1,451,500	0		1,451,500	
TOTAL LOCAL SERVICE FACILITIES	1,935,000	0	0	1,935,000	100
LERR	169,000			169,000	
Aids to Navigation (Ph II)	4,000	4,000	100	0	0
INITIAL COST REQUIREMENT(Ph I & II)	9,916,000	7,031,000		2,885,000	
LERR					
Additional Funding Requirement					
10% of GNF (\$7,808,000)		-781,000		781,000	
LERR credit		169,000		-169,000	
LERR Adjustment		-612,000		612,000	
ULTIMATE TOTAL PROJECT COST	9,916,000	6,419,000		3,497,000	
ULTIMATE COST-SHARED TOTAL (GNF)					
(Initial GNF Cost plus LERR Adjustment)	7,808,000	6,415,000	82	1,393,000	18

**Table 5. Federal/Non-Federal Cost Apportionment for Recommended Plan
(Cont'd)**

(October 2000 price level)

Items	Total Project Cost	Implementation Costs			
		Federal	%	Non-Federal	%
Phase I Expenditures (Actual Cost)					
GNF	4,395,062	4,037,887		357,175	
Local Service Facilities	483,325	0		483,325	
LERR-Credit	169,000	0		169,000	
TOTAL PHASE I EXPENDITURE	5,047,387	4,037,887		1,009,500	
PHASE II INITIAL COST REQUIREMENTST					
Total Initial GNF less Ph I GNF expenditure	3,412,938	2,989,113		423,825	
Local Service Facilities	1,451,500	0		1,451,500	
Aids to Navigation	4,000	4,000		0	
TOTAL PH II INITIAL COST REQUIREMENT	4,868,438	2,993,113		1,875,325	
PHASE II ULTIMATE PROJECT COST					
LERR					
Additional Funding Requirement					
10% of GNF (\$7,808,000)		-781,000		781,000	
LERR credit		169,000		-169,000	
LERR Adjustment		-612,000		612,000	
TOTAL PH II ULTIMATE PROJECT COST	4,868,438	2,381,113		2,487,325	

10.0 Conclusions And Recommendations

10.1 Conclusions

The studies documented in this report indicate that Federal completion of the small boat harbor at Ouzinkie, as described in the Recommended Plan, is technically feasible, economically justifiable, and environmentally and socially acceptable. Alternative 2, Complete the Authorized Project, was found to maximize the net NED benefits; thus it was designated as the NED and Recommended Plan.

The city of Ouzinkie has indicated its willingness to act as a local sponsor for the project and fulfill all the necessary local cooperation requirements. The State of Alaska has also indicated its willingness to continue to support the project and has requested funds for the non-federal costs. Thus, it is concluded that the Federal government should proceed with completion of the small boat harbor at Ouzinkie.

10.2 Recommendations

I recommend that the small boat harbor at Ouzinkie, Alaska be constructed generally in accordance with the plan herein. The estimated total project cost is \$9,916,000, which includes the remaining Federal cost of \$2,381,000 to construct the Recommended Plan. The total Federal cost is \$6,419,000. This would include constructing the remaining 265 ft of breakwater and dredging 8,200 yd³ of rock in the mooring basin and entrance channel. Construction of this plan will result in the completion of the project as originally described in the *Supplement to the Small Boat Harbor Detailed Project Report* of May 1996. This would result in all of the NED benefits of the project being realized and is the preferred plan by the sponsor.

The total non-federal cost is estimated at \$3,497,000, which includes the remaining non-federal cost of \$2,488,000, and would include cost-sharing the general navigation features and funding the remaining dredging of the mooring areas and installation of the float system. The items of local cooperation remain the same as stated in the May 1996 report except the Federal limit for the project is now \$8,500,000, and the sponsor must pay all costs that exceed that limit.

Date _____

Steven T. Perrenot
Colonel, Corps of Engineers
District Engineer