US Army Corps of Engineers
Alaska District

Dredged Material Management Plan Environmental Assessment and Finding of No Significant Impact

HOMER SMALL BOAT HARBOR
And
COAST GUARD DOCK
HOMER, ALASKA

Photo provided by the City of Homer

August 2007

U.S. ARMY CORPS OF ENGINEERS
ALASKA DISTRICT

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1.0 Authority

This dredged material management plan has been prepared under authority contained in the following:

- Section 101 of the Water Resources Development Act of 1986, as amended by Section 201 of the Water Resources Development Act of 1996, which provides specific requirements relating to the construction, operation, and maintenance of land-based and aquatic dredged material disposal facilities for navigation projects.
- Policy Guidance Letter (PGL) No. 17: Formulation and Cost Sharing for Harbor Projects that Include Land Creation.
- Policy Guidance Letter (PGL) No. 40: Memorandum for Major Subordinate Commands and District Commands
- Policy Guidance Letter (PGL) No. 47: Cost Sharing for Dredged Material Disposal Facilities Partnerships.

2.0 Project Location

The Homer Small Boat Harbor is near the tip of the Homer Spit, which extends approximately 5 miles into Kachemak Bay (figure 1). Homer is on the north side of Kachemak Bay at the southern end of the Kenai Peninsula, approximately 80 nautical miles south of the Kenai River (figure 2). Homer is approximately 143 miles from Anchorage and is accessible by highway from Anchorage and the contiguous 48 states.

Harbor dimensions are in table 1. The harbor provides sheltered moorage for 1,420 vessels and is an integral part of Homer's economy. Homer's commercial fishing fleet averaged almost 44 million inflation adjusted dollars in estimated gross earning for the 15-year period 1990 – 2005. The harbor is essential to Homer's summer tourism economy by providing access to charter boats, cruise ships, and water taxis. Two large docks are near the small boat harbor: a deep-water dock for freighters and a dock that serves both the Coast Guard and the State of Alaska Marine Highway System (figure 1).

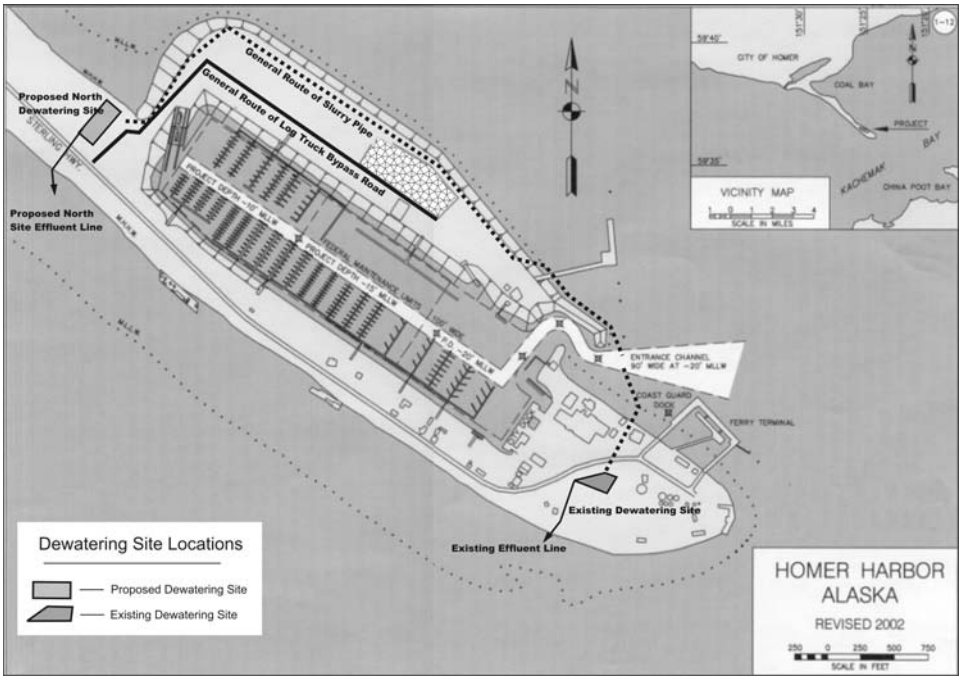

Figure 1. Homer Harbor with project features.

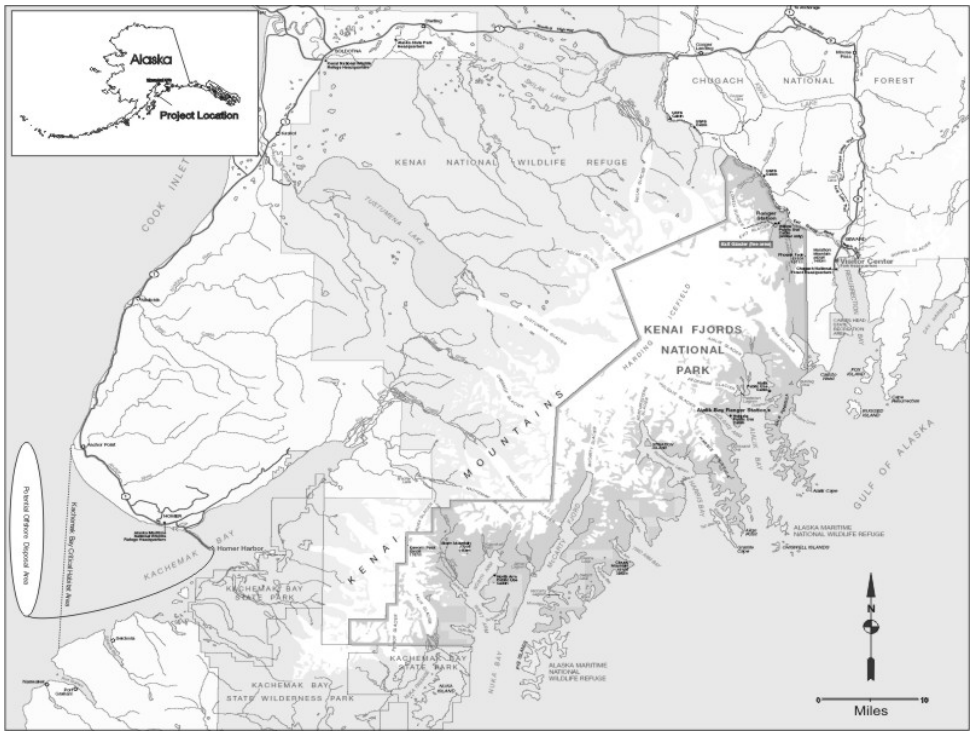

Figure 2. The Kachemak Bay Critical Habitat Area and a possible offshore disposal site in Lower Cook Inlet, Alaska.

Table 1. Homer Harbor Dimensions.

Feature	Length (feet)	Depth (feet)	Width (feet)
Outer Entrance Channel	700	-20	Varies
Inner Entrance Channel	850	-20	90
Maneuvering Channel	2790	-20, -15, -10	100
Basin (50 acres)	2985	-20, -15, -10	720
Main Breakwater	1018		
Secondary Breakwater	238		

The harbor entrance channel requires annual maintenance because of shoaling. Shoaling also requires that the Coast Guard Dock be dredged twice a year. The freighter and ferry dock has not needed and is not expected to need dredging. The entrance channel and the Coast Guard dock are dredged by the Corps of Engineers under a 2-year contract. The City of Homer would dredge the mooring basin inside the harbor if it required dredging. The dredging window is between July 16 and April 30. Dredging of the entrance channel and Coast Guard dock typically begins the second week of September and usually takes 2 weeks to complete using a hydraulic cutterhead and pipeline suction dredge. The Coast Guard dock is sometimes dredged a second time in April.

3.0 Scope of Study

This Dredged Material Management Plan (DMMP) re-evaluates the need for maintenance dredging and the dredging schedule and process. It also provides an analysis of the historical dredged quantities at the Homer Small Boat Harbor. The study process evaluates a number of potential dredged material disposal site alternatives and identifies the least cost alternative as the Base Plan. The Base Plan would provide a dredged material disposal site, or series of sites, for 20 years while meeting environmental, engineering, and economic constraints. Should the City of Homer prefer a more expensive plan, that plan would be investigated as the Locally Preferred Plan (LPP). After the city agreed to fund the additional costs of the LPP, a Project Cost-Sharing Agreement (PCA) would be signed, and the LPP would become the Recommended Plan.

This study evaluates disposal site needs for the dredged material that comes from the harbor entrance channel and U. S. Coast Guard dock. Dredged material from the city-owned mooring basin was also considered, but the mooring basin has not needed dredging since the harbor was expanded to 50 acres, and it is not expected to need maintenance dredging during the next 20 years.

The final DMMP document is a complete decision document, which includes an environmental assessment (EA) and supporting exhibits and appendices documenting work tasks. It includes the full range of alternatives considered including near-shore and offshore disposal, management of the existing dewatering site to extend its life, and combinations of new dewatering sites with different upland dewatering methods. It also includes an assessment of the potential beneficial uses of dredged material in the City of Homer area.

4.0 Project Authorizations and Development History

The original harbor project was authorized by the River and Harbor Act of 3 July 1958 (House Doc. 34, 85th Congress, 1st Session), and was destroyed in 1964 during a 9.2 magnitude earthquake (Waller 1971). The act provided for a 300-foot by 400-foot boat basin at a depth of -12 feet mean lower low water (MLLW) protected by an 850-foot-long rubblemound jetty. The River and Harbors Act of 19 August 1964 (P.L. 88-451), as amended by the Chief of Engineers 21 December 1971, authorized a small boat basin within Homer Spit. The authorized harbor was approximately 10 acres dredged to a depth of -12 feet MLLW over 2.75 acres and -15 feet MLLW over 7.25 acres that included an entrance channel, a 1,018-foot main rock breakwater, and a 238-foot secondary rock breakwater. The authorization also included provisions for further expansion of the project. In 1985 a harbor expansion project enlarging the harbor to a total of 50 acres was completed. The Corps completed the reconnaissance phase of a study to further expand the harbor in November of 2004. The reconnaissance report recommended continuation of the study into feasibility phase. The project currently contains 920 individual slips for vessels 21 to 75 feet long and 6,000 linear feet of transient moorage tie-up space. A summary of development of the harbor follows:

- 1961 - Harbor dimensions are revised to 180 feet by 672 feet with an 840-foot-long rock-mound jetty. Dredging and construction of the breakwater begin in September and are curtailed in November.
- 1962 - Work is resumed in May with completion of the dredging in June and the breakwater in September.
- 1963 - Storm damage over the winter requires repair to the breakwater and some basin side slope protection.
- 1964 - The earthquake of 27 March 1964 causes major damage to the project. Repair work on the first leg of the breakwater runs from July through August. Harbor restoration commences in August, and the expansion phase begins in November.
- 1965 - The expansion phase for harbor enlargement is completed in March. The restoration phase is successfully concluded in May.
- 1968 - The basin and protective berm are extended 100 feet by the local government.
- 1969 – Local government extends the basin and protective berm under Corps supervision to ensure the integrity of the project for an additional 600 feet during FY 1969-70.
- 1972 - Starting this year maintenance dredging of the entrance channel becomes an annual event.
- 1973 - Removal of a submerged portion of the original breakwater begins in June and is completed in August; additional beach protection provides further improvement to the project.
- 1977 - From 1977 to 1988 maintenance dredging of the Federal project is conducted by the Corps' pipeline dredge "Warren George."
- 1984 - Work begins on a major harbor expansion project to increase the boat basin from 16.5 acres to 50 acres.

- 1985 - The harbor expansion project is completed to 50 acres, including the construction of a 30-acre staging area and the placement of 130,000 cubic yards of armor rock.
- 1989 - Starting this fiscal year maintenance dredging is accomplished by contract.
- 1993 - Sampling and testing of harbor sediments is conducted.

5.0 Description of Existing Conditions

Sediments from the harbor entrance channel and Coast Guard are dredged with a floating cutter-head suction dredge that pumps them to a bermed dewatering site on City of Homer Lot 49 via a portable pipeline. The existing area available for dewatering is approximately 41,900 square feet (ft^2) of approximately 1,500 cubic yards (yd^3) capacity. Under current practices, effluent from the dewatering site is discharged through an earthen ditch to Kachemak Bay on the opposite side of the Homer Spit from the harbor (existing effluent line, figure 1). After dewatering, sediment is hauled for storage by truck to a permanent storage site on a portion of Tract 1-A of Lot 17 between the freight dock road and the log truck bypass road adjacent to the northwestern end of the harbor. This site is where the north dewatering site (figure 1) considered in Alternatives 1, 3, and 5, would be located and uses approximately. The total area of the site is approximately 92,000 ft^2. Approximately 56,500 ft^2 is used for material storage and 36,500 ft^2 not used for material storage is sometimes used to park recreational vehicles during the summer tourist season (late May through early September). Recreational vehicle parking is sometimes expanded on the site as stored material is removed for civic projects on the Homer Spit.

Historically, the Corps has paid for mobilization and demobilization of the dredge, construction, maintenance and restoration of the existing dewatering site, and transport and placement of dredged material from the dewatering site to the permanent storage site. The Corps and the Coast Guard have proportionally shared dredging and surveying costs. The City of Homer removes dredged material from the permanent storage site and uses it at their cost.

Table 2 shows historical data on the quantity and contract costs of Corps and Coast Guard dredging at Homer. In 2001 dredging of the Coast Guard dock was deleted from the contract as construction of a new dock was underway. The increase in the quantity of Coast Guard dredged material in 2002 is due to the deeper draft of the new Coast Guard cutter, Hickory. The Hickory has a fully loaded draft of 13 feet, which may require maintenance dredging at the Coast Guard dock up to twice a year. Dredging at the Coast Guard dock would be administered by the Corps and paid for by the Coast Guard.

Table 2. Dredged Quantities and Contract Costs FY 94 through FY 04.

	Corps Dredging		Coast Guard Dredging		Total Dredging Effort	
Fiscal Year	Quantity (yd^3)	Contract Cost ($)	Quantity (yd^3)	Contract Cost ($)	Quantity (yd^3)	Contract Cost $
1993	6,000	121,300	2,700	13,600	8,700	134,900
1994	8,000	124,400	2,600	14,100	10,600	138,500
1995	8,700	121,00	2,600	12,900	11,300	133,900
1996	7,600	121,00	3,000	12,900	10,600	133,900
1997	6,100	115,800	2,100	16,500	8,200	132,300
1998	6,000	103,100	2,100	12,200	8,100	115,300
1999	7,500	147,000	3,000	10,100	10,500	157,100
2000	7,500	131,000	3,000	14,200	10,500	145,200
2001	5,000	110,600	Not	Dredged	5,000	110,600
2002	2,100	108,200	Not	Dredged	2,100	108,200
2003	4,400	189,300	1,900	305,200	6,300	494,500
2004	7,800	192,400	10,800	458,100	18,600	650,500

Source: U.S. Army Corps of Engineers.
Quantity dredged rounded to nearest 100 yd^3.
Dredging costs rounded to nearest 100 $.

The mean tide range at Homer is 15.8 feet and the diurnal range is 18.3 feet. The extreme tide is 32.2 feet. The entrance channel is dredged to –20 feet (MLLW) and the Coast Guard dock is dredged to -22 feet MLLW. Dredged materials are dewatered and stored on upland sites owned by the City of Homer (figure 1).

6.0 Projection of Future Conditions

The annual maintenance dredging of the small boat harbor entrance channel and the Coast Guard dock produces roughly 11,000 cubic yards (yd^3) of dredged material. On average, the entrance channel accounts for 8,000 yd^3 and the Coast Guard dock accounts for the remaining 3,000 yd^3. These quantities are expected to increase during the 20-year planning period due to the deeper draft of the Hickory (Section 5.0). The larger cutter is expected to increase the quantity of annual maintenance dredging to an estimated 8,000 yd^3 for the Coast Guard dock in addition to 8,000 yd^3 expected from the entrance channel. With the additional dredging, the total annual maintenance dredging quantity is estimated to be 16,000 yd^3.

The annual dewatering of sediments from dredging would increase correspondingly to an estimated 16,000 yd^3. Meeting future dewatering and storage needs to accommodate up to 16,000 yd^3 annually for 20 years is a requirement of this DMMP.

7.0 Statement of Specific Problems and Opportunities

The existing dewatering facility (figure 1) has a capacity of 1,500 yd^3 (table 3) and is not large enough to hold the estimated future annual dredging quantity of 16,000 yd^3 without several inseason shutdowns to haul dewatered material to the storage site described in Section 5.0. Additionally, the facility is not large enough to clarify effluent, and effluent from the site does not meet the State of Alaska's water quality standard (18 AAC 70) of 25 Nephelometric Turbidity Units (NTU) with out retention times in excess of the dredge

operators normal shutdown periods. Much of the effluent ditch from the facility is unlined and the effluent increases in turbidity as it flows to the beach. Expansion of the existing dewatering facility, as described by alternatives 2, 4, and 6, would be a major construction investment, but would reduce the frequency of hauling dewatered material from the facility.

The quality of the effluent that might be released from the existing or a future dewatering facility is an important issue to the State of Alaska Departments of Natural Resources, Fish and Game, and Environmental Conservation. Marine waters surrounding the Homer Spit (figure 2) are within the Kachemak Bay Critical Habitat Area (KBCHA), and as such are subject to agency review and monitoring. A special use permit from the Department of Fish and Game, as described in the Environmental Assessment accompanying this DMMP report, is required for actions within the KBCHA. The Alaska Department of Fish and Game (ADF&G) Area Sport Fish Division biologist opposes effluent being released into the KBCHA from the east side of the spit because she believes those waters are important for rearing juvenile salmon (Sarzi, personal communication). Consequently, effluent from the existing facility or a future facility built north of the harbor (figure 1, alternatives 1, 3 and 5) would be piped to the beach on the west, or ocean side of the spit. Piping effluent to the west side of the spit is possible from the existing or from a future dewatering facility north of the harbor.

Effluent from the existing dewatering facility also erodes a shallow gully across the beach at low tides. The gully typically fills with sand during high tides, but it can be a minor safety hazard to unaware people walking on the beach at lower tides. Erosion of the beach has concerned local people and the City of Homer. Discharge of effluent across the beach from any of the alternatives described in this DMMP would have to be constructed in a manner that would mitigate potential erosion of the beach while accommodating public pedestrian access on the beach.

The composition of sediment from the entrance channel is 98 percent gravel, 2 percent sand, and 0.2 percent non-plastic fines with a specific gravity of 2.7. This sediment is porous and does not compress well. Construction of a dewatering facility north of the harbor (figure 1), described as alternatives 1,3, and 5, provides an opportunity to percolate most if not all water that would be discharged in the dewatering facility. This dewatering facility would also be large enough clarify effluent to meet the State water quality turbidity standard of 25 NTU should discharge on the west beach be necessary. Water percolated through the existing or a future north facility would enter the marine groundwater table under the spit.

Sediment may need to be removed from the existing or from the north facility during and between the dredging periods for any of the 6 alternatives described in this DMMP. Capacity for storage on the existing storage site (the north site figure 1) is currently limited because a City of Homer uses the site for recreational vehicle parking during the tourist season. The City has an ordinance the requires that dredged material remain on the spit where use in limited, but if the annual quantity of dredged material cannot be

fully utilized on the Spit (Appendix A) the city has agreed to amend this ordinance to allow use of dredged material off the spit.

Metals including arsenic and chromium can be naturally high in Cook Inlet sediments (USGS 2001, Franzel 2002). Dredged material from the harbor and entrance channel was chemically characterized in 2002 and concentrations of the metals arsenic and chromium were found to exceed State of Alaska soil cleanup standards for upland dewatering. Arsenic and chromium concentrations on the proposed north site are similar to sediments that are dredged. Disposal of sediments from the harbor on a site naturally contaminated with similar concentrations of arsenic and chromium would therefore, not be prohibited.

8.0 Alternatives Considered

8.1 Near and Offshore Disposal

In this DMMP near-shore disposal is defined as disposal by pumping sediments dredged from the harbor directly into the near-shore waters of Kachemak Bay. The potential for an acceptable near-shore disposal alternative is reduced by the designation of critical habitat within Kachemak Bay (figure 2). Near-shore disposal in Kachemak Bay would require, and is not likely to get, ADF&G approval to discharge in waters of the KBCHA (Sarzi personal communication).

Disposal in the offshore waters of Lower Cook Inlet was also considered. In this DMMP offshore disposal is defined as transporting sediments from the harbor to a disposal site in Lower Cook Inlet outside the boundary of the KBCHA (figure 2). Cook Inlet hosts a rich marine biota of significant economic and cultural importance to Southcentral Alaska and the nation. Lower Cook Inlet is considered estuarine waters within the territorial baseline and is regulated by the Clean Water Act Section 404(b)(1). A designated disposal site in Lower Cook Inlet does not exist, and the cost of and time required for environmental data collection necessary to designate a site in a rich marine environment such as lower Cook Inlet would exceed the scope and need of this small dredging action.

Offshore disposal in Cook Inlet outside the KBCHA would be impracticable because of the added transportation costs and is in conflict with the local ordinance prohibiting removal of dredged material from Homer Spit (Appendix A). Because of the above constraints, the alternatives of near-shore and offshore disposal were eliminated from consideration early in the DMMP process. Additional information concerning near-shore and offshore disposal is in the environmental assessment included as part of this report.

8.2 Potential Upland Sites

Two project sites have been identified for possible construction of dewatering and material storage facilities.

8.2.1 Existing Dewatering Facility Site (Lot 49)

The existing dewatering facility is southwest of the harbor on a portion of Lot 49 (figure 1). Approximately 49,000 ft^2 of the site is currently used. Roughly 41,900 ft^2 of the 49,000 ft^2 is used for dewatering and approximately 7,300 ft^2 is used for recreational

vehicle parking, utility easement, dock storage, and staging. The area used for dewatering (41,900 ft^2) is not large enough to meet effluent turbidity standards under current dredging operations. Continued operation using the existing footprint would require work stoppage periods and/or chemical additives to increase sedimentation rates to meet effluent water quality standards.

The entire area of lot 49 would be needed for dewatering so it would not be necessary to stop dredging for extended periods to clarify water and remove sediments, but lot 49 also requires a truck loading area in addition to an enlarged dewatering area. Approximately 84,200 ft^2 would be needed for these two functions: 76,000 ft^2 for dewatering and 8,200 ft^2 for loading trucks. Expansion of the dewatering area to 76,000 ft^2 would still occasionally require dredging to be stopped to clarify water and remove sediment, and would require hauling sediment to the proposed north site for temporary storage.

To use the existing site, slurry would be pumped from the dredge through a 1,550-foot-long, 12-inch-diameter pipeline. The pipeline would need a 900-foot section of floating pipe to allow the dredge to traverse the dredging area and a 650-foot-long section to bring the slurry overland to the dewatering site. The pipeline would cross Coast Guard property, and coordination with the Coast Guard would be required to determine an acceptable route for the pipeline. The pipeline would have one buried 80-foot section under Homer Spit Road. This section has traditionally been placed over the road because there was little traffic traveling to the end of the Spit during the dredging period, but with a new condominium development recently completed at the end of the spit, it is expected that the additional traffic over the pipeline would create an unacceptable hazard. After crossing the road, the pipeline would run a short distance across the edge of Lot 49 and enter the dewatering facility from the east (figure 1).

The effluent line would leave from the opposite side of the dewatering facility on the northwest end of Lot 49 and run along a gravel trail to the beach. Effluent would be decanted from the dewatering facility by means of several box weirs located on the west side of the basin. The effluent pipeline would consist of a 650-foot-long corrugated metal pipe (CMP) to the approximate mean low water line on the west side of the Spit. The first 450 feet of the pipeline would run under a gravel road from the dewatering area to the mean higher high water (MHHW) line. This section could be installed permanently or be removed annually. The last 200 feet of the pipeline would run from the MHHW line down the beach to the mean low water line (figure 1). The beach section of the pipeline would be placed on the sandy gravel beach and anchored in place at regular intervals and have a diffuser attached to slow the flow of the effluent. This section of pipe would have to be removed after each mobilization to prevent storm damage and loss of the pipeline.

8.2.2 North Dewatering Facility Site

This site is to the north of the small boat harbor adjacent to a log truck bypass road (figure 1) and is the current location of the permanent dredged material storage site. The dewatering facility that would be constructed on this site would have a 92,000 ft^2 footprint that would allow dewatering and temporary storage of a limited quantity of

dredged material within the berms. The facility would have a capacity of 9,500 yd^3, and dredged material that is discharged in excess of capacity during any single dredging period would be temporarily piled inside the berms or removed by the dredge contractor and temporarily piled adjacent to the berms. Dewatering in excess of capacity may not occur every year, but during years when it would occur, the footprint of the facility would be increased by approximately 17,000 ft^2 to 109,000 ft^2. The increase in footprint area would be used to temporarily pile excess dredged material outside the berms until the City of Homer could haul it from the site.

Part of the site is used by the city for recreational vehicle parking and the increase in footprint would reduce the available parking area by approximately 17,000 ft^2 during years when it is necessary to temporarily stockpile dredged material outside the berms. The total footprint used for dewatering and occasional temporary stockpiling of excess dredged material would be approximately 109,000 ft^2.

The slurry pipeline between the dredge and the dewatering facility would have sections of floating, submerged, and aboveground (surface) pipe. Approximately 700 feet of floating pipeline would be required to allow the dredge to move about the dredging area without repositioning its submerged sections. The submerged pipeline section would run from a central point in the dredged area/entrance channel roughly 1,450 feet along the outside of the harbor (figure 1). The pipeline is not expected to detrimentally impact any uses of the land it crosses over. The aboveground section would have a total length of 3,600 feet and may require a booster pump.

Due to habitat concerns in Kachemak Bay east of the spit, the effluent decanted from the dewatering facility would be discharged on the west or Cook Inlet side of the spit. Discharging the effluent to Cook Inlet would require the effluent to be routed under the highway and down the beach to approximately the mean low water line. The section of pipeline running down the beach would need to be anchored to the beach to prevent movement and damage during storms. This section of pipeline could also be temporary with the contractor removing this section of pipe from the beach after the conclusion of maintenance operations each year.

8.3 Common Considerations

Sections 8.3.1 through 8.3.7 discuss project considerations that are common to both upland alternatives considered in this plan. Dredged quantities (Section 8.7 and table 3) are common to all alternatives, upland and near-shore/offshore, that were initially considered.

8.3.1 Turbidity Standards

Alaska water quality standards for marine waters (18 AAC 70.020(2)(24)(A)(i)) require that effluent discharges have a maximum turbidity of 25 NTU. Settling tests for the two collected samples show that the required retention time to maintain 25 NTU using unaided settling is 18.4 hours (U.S. Army Engineer Research and Development Center, 2002). The addition of chemical additives to the slurry pipeline would reduce the required retention time, but would require additional effort to operate the dewatering

operation and may require additional cleanup of the effluent before discharging into marine waters of the KBCHA.

8.3.2 Effluent Monitoring

The contractor would be required to monitor the effluent quality during dewatering operations. Turbidity of the effluent from the dewatering site would be monitored once per day during dredge operating periods to ensure compliance with the standard. Dredge operations may need to be closely monitored to ensure a retention time that would meet the effluent quality standard of 25 NTU. The contractor would keep a record of daily operations and include the report with each daily log. The report would contain the duration of dredging periods, average pumping rates for the dredging periods, and all effluent testing results at a minimum.

8.3.3 Seepage Rates

The seepage (to groundwater) estimation for the general material present at all dewatering areas was calculated using the dredged material gradation. Darcy's Law (Army Engineer Manual; EM1110-2-1901) was used to determine the seepage estimate. The seepage rates for all alternatives were limited to ¾ the estimated slurry inflow rate. Several alternatives have seepage rate estimates that indicate the slurry inflow would percolate downward through the basin and that no effluent would overflow the dewatering sites. Seepage is expected to slow over time, and the effluent flow was adjusted to be at least 25 percent of the slurry inflow rate for design purposes.

8.3.4 Dredging Operations

In the past the dredging contractor operated around the clock with two 12-hour shifts. It is assumed that the contractor would continue this schedule. Maintenance operations included equipment maintenance, dewatering area maintenance, arrangement of material, and trucking of material to the storage site. These maintenance operations account for roughly 25 percent of the operating hours.

8.3.5 Erosion Control

Slight erosion of the beach material at the effluent discharge point during previous dredging operations was identified as a local concern. Existing operations would be modified to reduce the possibility of erosion of the beach by requiring effluent lines be carried out to approximately the mean low water line and attaching a diffuser to slow the flow of the effluent. The effluent pipe would be anchored to the beach to prevent movement and damage from waves.

Percolation through the base material under the north dewatering site would initially be high enough that effluent would not overflow from a dewatering facility on the north site. The porosity of the base material is expected to decrease with time and increase the probability of effluent discharge from the north dewatering site. The effluent would be directed to the beach on the west side of the spit through a pipe with an anchored diffuser pipe at the end to prevent erosion of the beach at the discharge point as described above.

8.3.6 Safety Plan

To cover the water-borne portion of the dredging operation, the following safety measures would be taken. A notice to mariners for the dredging operation in and near the entrance channel would be issued. The notice would describe the foreseen navigation hazards, including submerged pipeline sections across the entrance and dredging operation areas. The contractor shall also be required to mark the limits of the dredging operation area with buoys.

The operation of the dewatering and storage areas would have the following safety accommodations. The containment berms would be maintained and inspected daily for damage, thin sections, seepage, and erosion. Any deficiencies or damage to the containment structure would be corrected immediately to prevent possible failure of the containment/dewatering area. Flagmen would be required at each pullout for trucking operations. Safety fencing would be required around dewatering and truck loading/unloading areas. A high chain link fence would surround permanent dewatering areas.

8.3.7 Dewatering Operations and Maintenance

The coarse-grained material would settle near the discharge pipe in all dewatering facilities and periodic removal of material from around the discharge pipe during dredging may be needed to maintain as much of the ponding area as possible. If operations to maintain capacity were required during one of the expected September and April dredging periods, the dredging contractor would temporarily pile the course-grained material on one end of the dewatering facility or remove and temporarily pile it adjacent to the berms. Material would be hauled from and adjacent to a facility on the north site between the September and April dredging periods, and after the April period, would restore its capacity for the next dredging cycle. Removal and hauling of dredged material from the site between and after the dredging periods would be done by the City of Homer at no cost to the Federal government in exchange for beneficial use of the material by the city.

The basin and berm slopes would be closely monitored and sloughing problems quickly corrected to prevent berm failures and containment loss.

Approximately the top 18 inches of gravel would be excavated from the bottom of a facility basin at least once each year to remove gravel-clogging silt that would decrease the percolation efficiency of the basin. Several inches of silt would also be scraped off the surface every few days during regular basin maintenance.

8.4 Berm Construction Alternatives

Three berm designs were considered: temporary berms, permanent berms with impermeable geotextile, and soldier pile bulkheads.

8.4.1 Temporary Berm

This alternative would have a storage berm without reinforcement and an excavated dewatering basin. Material from basin excavation would be used to build the berm, which would be 6 feet high and 29 feet wide at the base. The berm slopes would be

1V:2H. The berm crest width would be 5 feet. A cross section of this construction alternative is shown in figure 3.

Without an impermeable layer of geotextile fabric reinforcing the berm, the berm could fail. To prevent berm failure, the maximum water level in the CDF would be limited to the top of the excavated basin (existing ground). Maintaining the ponding area at this water level would prevent the failure of the berm and any damage that might be caused by a breach in the storage berm.

The basin of the dewatering facility would start at the toe of the storage berm. The basin would be cut at a 1V:3H slope with the basin depth being 6 feet below grade. The basin would require 7,980 yd^3 of excavation for the existing dewatering site and 10,650 yd^3 for the north site. The basin cut volumes are roughly double that which are required for building the storage berms, so the excess excavated material would have to be placed in a storage area away from the dewatering site. The submerged basin slope would achieve a more stable slope by sloughing into the basin. The saturated material would slough until it reached a stable slope somewhere in the range of a 1V:5H slope. A basin with temporary berms would be limited in holding capacity. The basin slopes would require frequent maintenance to keep the design slopes.

The temporary berm alternatives were eliminated from consideration early in the planning process without estimating costs because it was evident that temporary berms would reduce capacity to unacceptable volumes and be subject to failure because of the composition of the natural materials available for construction.

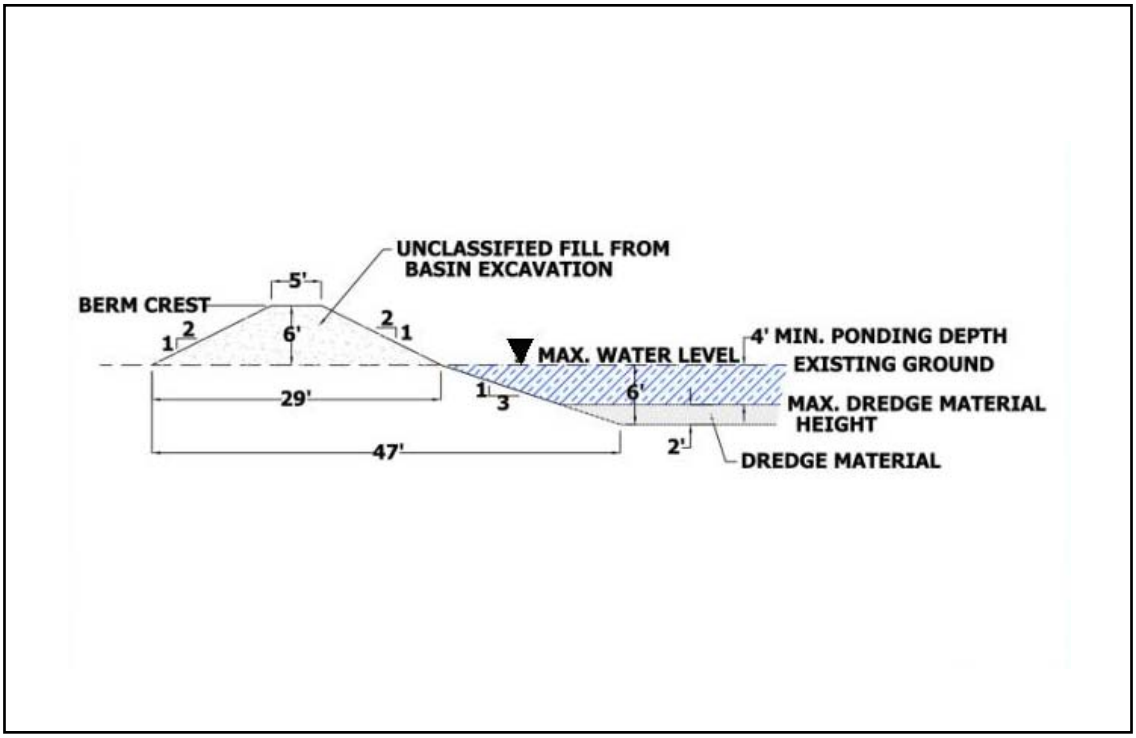

Figure 3. Temporary Berm Cross-Section.

8.4.2 Permanent Berm

This dewatering alternative uses permanent, reinforced berms and an excavated basin for dewatering. A reinforced impermeable inner berm would allow a much higher water level for ponding and material storage. The interior of the basin and berm would use a shallower, un-reinforced slope to prevent damage to the reinforced outer berm during removal of the material contained within the basin.

The reinforced berm would be built with material from the site that is reinforced with geotextile fabric to increase stability of the berm when it is saturated. Geotextile fabric wrapped layers would be placed to create a 5-foot-high impermeable berm with a 1V:1H slope. The interior berm slope and the basin slope would not be reinforced and would be built from the existing material on site. The interior berm slope and basin slope would be a 1V:3H slope and the basin slope would extend 6 feet below the existing grade. A cross section of this construction alternative is shown in figure 4.

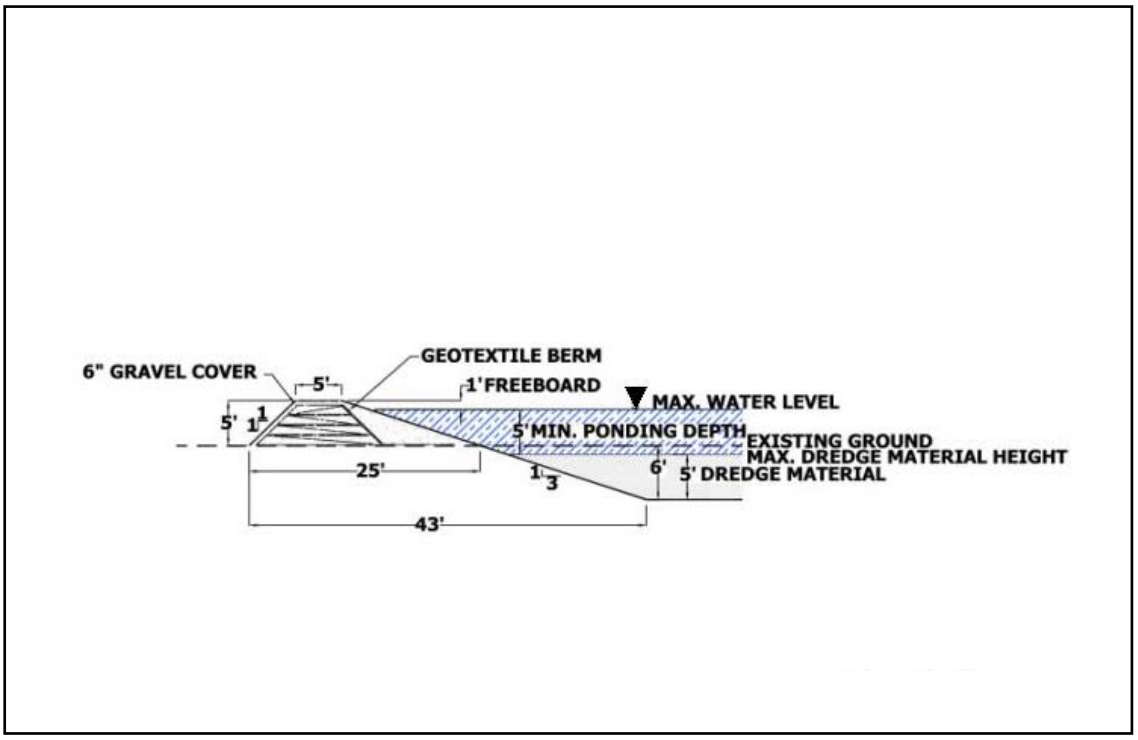

Figure 4. Permanent Berm with Impermeable Geotextile.

8.4.3 Soldier Pile Bulkhead

This alternative would use a permanent bulkhead to contain the dredged material and ponded volume. The bulkhead would be a permanent feature and would remain on site after the end of the dredging season. After initial construction of the bulkhead and basin, no additional construction would be needed during future dredging seasons. Minor annual maintenance of the structure probably would be required for the bulkhead and basin area.

The soldier pile bulkhead would be built from vertically driven, W-12x16 steel H-piles, timber lagging, an impermeable barrier, and anchors. The H-piles would be 20 feet long and spaced every 6 feet along the perimeter of the basin. Angle steel would be welded to each side of the pile web to form a slot for the timber lagging. The timbers would be placed from the top down to 2 feet below the basin depth. An impermeable membrane would be attached to the face of the lagging to prevent seepage through the bulkhead.

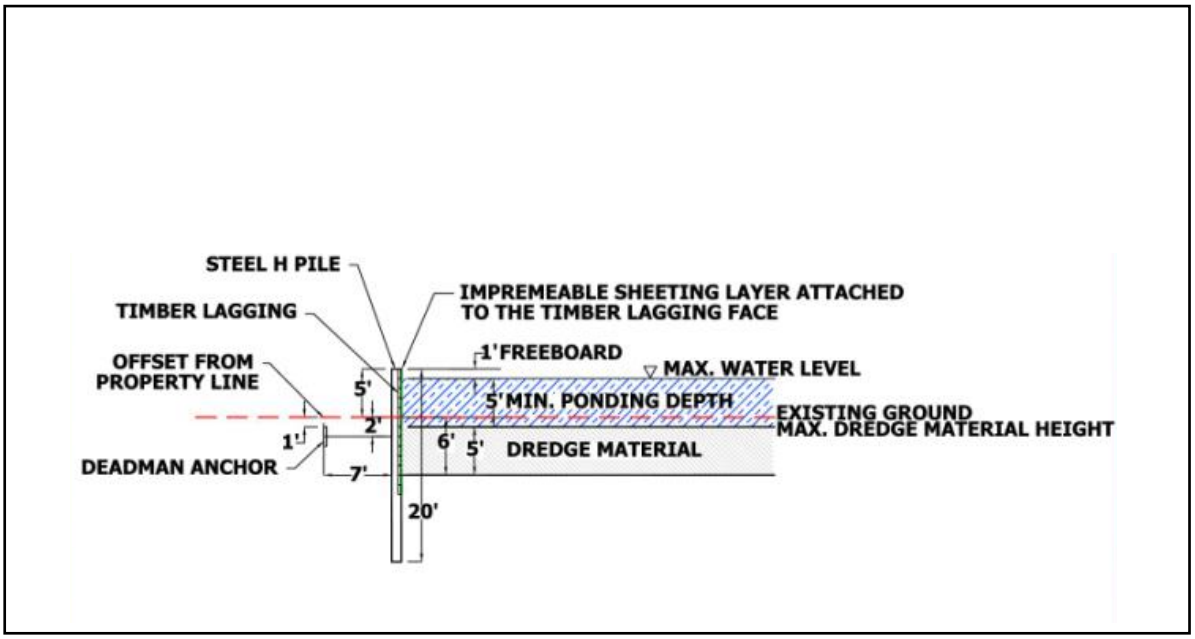

Figure 5. Soldier pile bulkhead

Deadman anchors would be attached to each pile to prevent displacement. The anchors would be 2-foot squares made from ½-inch steel plate. The anchors would be attached to the piles using ½-inch-diameter steel rods. The rods would be attached to the piles 2 feet below grade. Minimum cover for the anchors would be 1 foot. A cross section of this construction alternative is shown in figure 5.

8.5 DMMP Alternatives Considered

Consideration of the three proposed construction methods at the two identified potential project sites results in a total of six alternatives to evaluate.

8.5.1 Alternative: No Action

The no action alternative dewaters dredged sediment in a 41,900 ft^2 facility with a capacity of 1,500 yd^3. Dewatered material is hauled by truck about ¾ mile from the dewatering facility to a storage site described in Section 5.0 several times each dredging period to maintain disposal capacity. The dredge operator shuts operations down several times each dredging period to allow dewatering, loading and hauling from the facility. The Corps pays for loading and hauling material to a storage lot to maintain the facility's capacity.

Effluent is discharged through a mostly unlined ditch to the beach on the west side of the spit and it exceeds allowable turbidity levels set by State water quality standards. Effluent discharged on the beach erodes a shallow gully at lower tide levels and results in a safety hazard to pedestrians walking on the beach. Local residents and the City of Homer are known to complain about erosion on the beach.

8.5.2 Alternative 1: Soldier Pile Bulkhead, North Dewatering Site

This alternative would construct a permanent dewatering facility at the north dewatering site for use over the 20-year planning horizon of this study. Use of the site as a storage and/or parking area would be diminished, if not eliminated entirely, because of the permanency of the piles.

Approximately 18,150 yd^3 of material would be excavated to 6 feet below existing grade for a settling basin. The soldier pile bulkhead would require 210 driven H-piles and anchors, 65,520 board feet of timber lagging, and 1,820 yards of impermeable membrane for construction. This alternative would have the capacity to store 15,130 yd^3 of dredged material. The project layout is shown in figure 6.

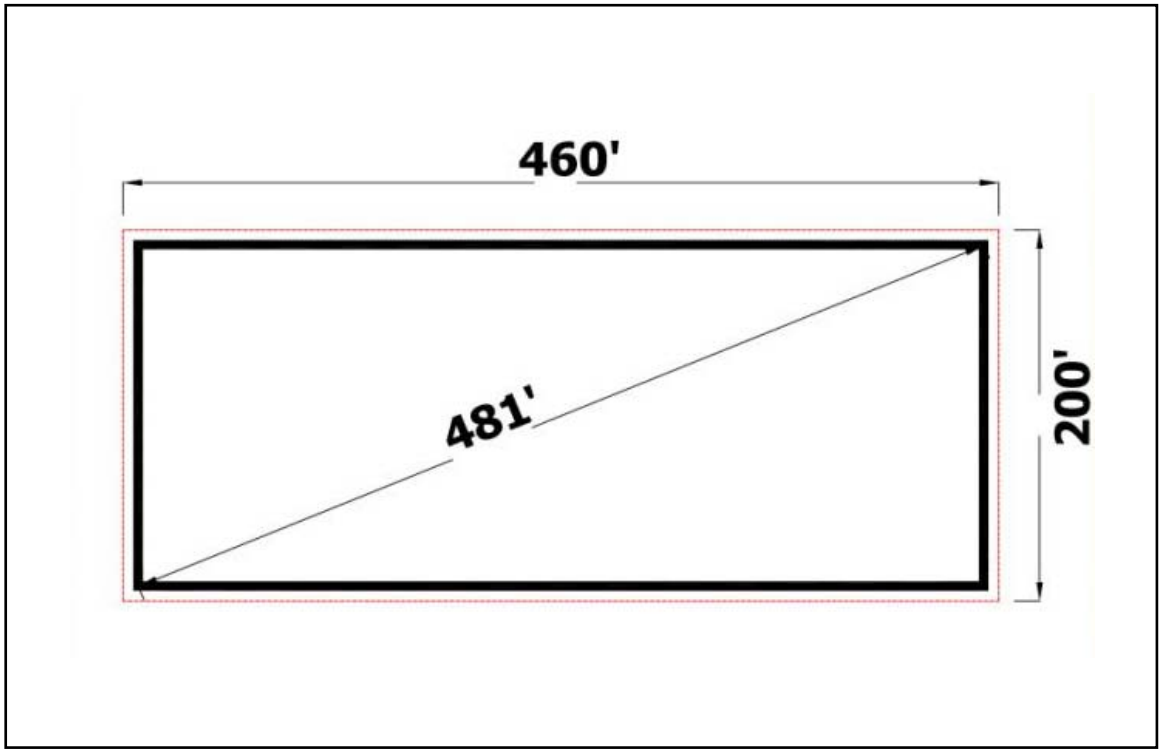

Figure 6. Alternative 1 - Soldier pile bulkhead at North Site.

8.5.3 Alternative 2: Soldier Pile Bulkhead Existing Dewatering Site

In this alternative, a permanent dewatering facility using H-pile, timbers and geotextile material would be built at the existing dewatering site. Use of the site as a storage and/or parking area would be diminished, if not eliminated entirely, because of the permanency of the piles.

Approximately 14,800 yd^3 of material would be excavated to 6 feet below existing grade for a settling basin. The soldier pile bulkhead would require 193 driven H-piles with anchors, 60,500 board feet of timber, and 1,700 yards of impermeable membrane. This alternative would have the capacity to store 10,000 yd^3 of dredged material. The project layout is shown in figure 7.

Because the existing dewatering site would be used for dewatering and not for storage, the volume of the site does not need to hold the annual dewatering volume of 16,000 yd^3. Material would be periodically hauled to a storage area during the dredging operation. The storage area is currently located on the site of Alternatives 1 and 3 (north dewatering site).

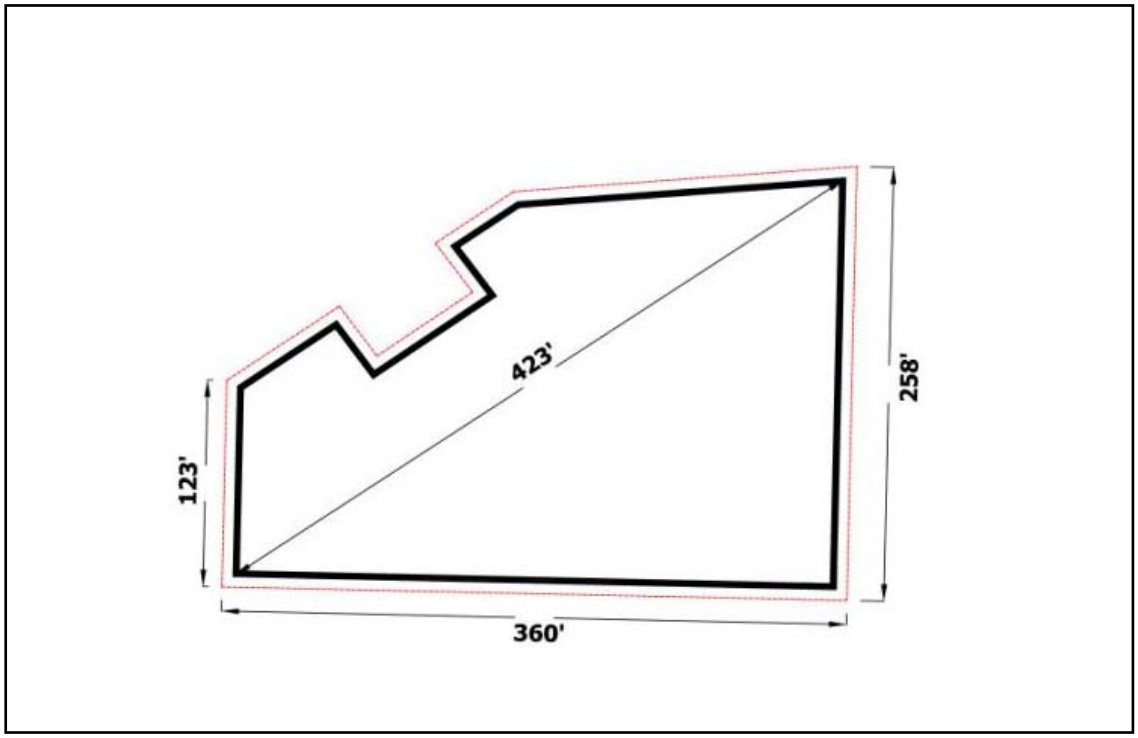

Figure 7. Alternative 2 - Soldier pile bulkhead at Existing Dewatering Site.

8.5.4 Alternative 3: Permanent Berm North Dewatering Site

This alternative would construct permanent berms at the north dewatering site. The footprint of the dewatering facility would be 92,000 ft^2 and it would not be usable for storage and/or parking area because of the permanency of the berms.

The berms would require 3,400 yd^3 of material, which would come from 11,600 yd^3 of material excavated from the site for a basin. The remaining 8,200 yd^3 of the excavation would be hauled from the site. The berms would be lined with 19,000 yd^2 of geotextile fabric to reinforce them against slumping. The quantity of geotextile fabric includes a 15 percent overlap. This alternative would have a storage capacity of 9,500 yd^3 of dredged material and would require that some material be removed from the basin as described in

Section 8.3.7 to accommodate the expected 16,000 yd^3 dredged annually. The project layout is shown in Figure 8.

8.5.5 Alternative 4: Permanent Berm Existing Dewatering Site

Permanent berms would be built at the existing dewatering site for this alternative. Most of the project site would not be usable for storage and/or parking area because of the permanency of the berms.

Approximately 3,100 yd^3 of sediment would be needed to build the berms. This material would come from the 9,000 yd^3 of sediment that would be excavated for a basin. The berms would be lined with 16,500 yd^2 of geotextile fabric to reinforce the berms against slumping. The geotextile fabric quantity includes a 15 percent overlap for continuous layers in the reinforced berm.

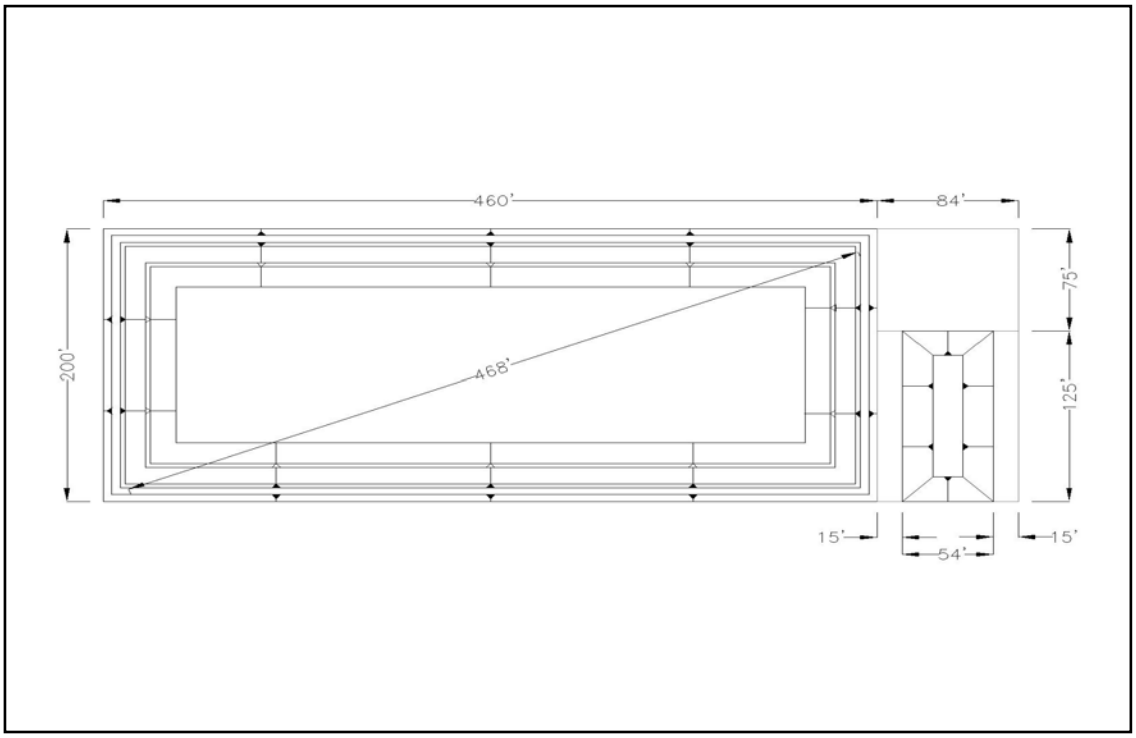

Figure 8. Alternative 3 - Permanent berm with geotextile and temporary excess dredged material stockpile on the North dewatering site.

Alternative 4 would have a storage capacity of 5,500 yd^3, and sediment would be hauled away as needed during dewatering to allow annual dewatering of the expected 16,000 yd^3. The sediment would be hauled to a storage area where the north site alternatives are located (figure 1). The dimensions of Alternative 4 are shown in figure 9.

8.5.6 Alternative 5: Temporary Berm North Dewatering Site

Temporary berms would be built at the north dewatering site for mobilization in April and demolished each September, after which the site would be graded to allow other interim uses such as storage or parking. Sediment would be hauled from the site as needed during and after each dewatering period, and approximately 4,500 yd^3 of material

would be required rebuild the berms each year. The material to build the berms would be scraped from the surface of the graded site and formed into a confinement berm.

Alternative 5 would not have capacity to dewater more than about 4,000 yd^3 of sediment, and sediment would need to be removed from the basin during dredging. Sediment removed from the basin would be stored near the north dewatering site. The general layout of this alternative is the same as in Alternative 3 (figure 8).

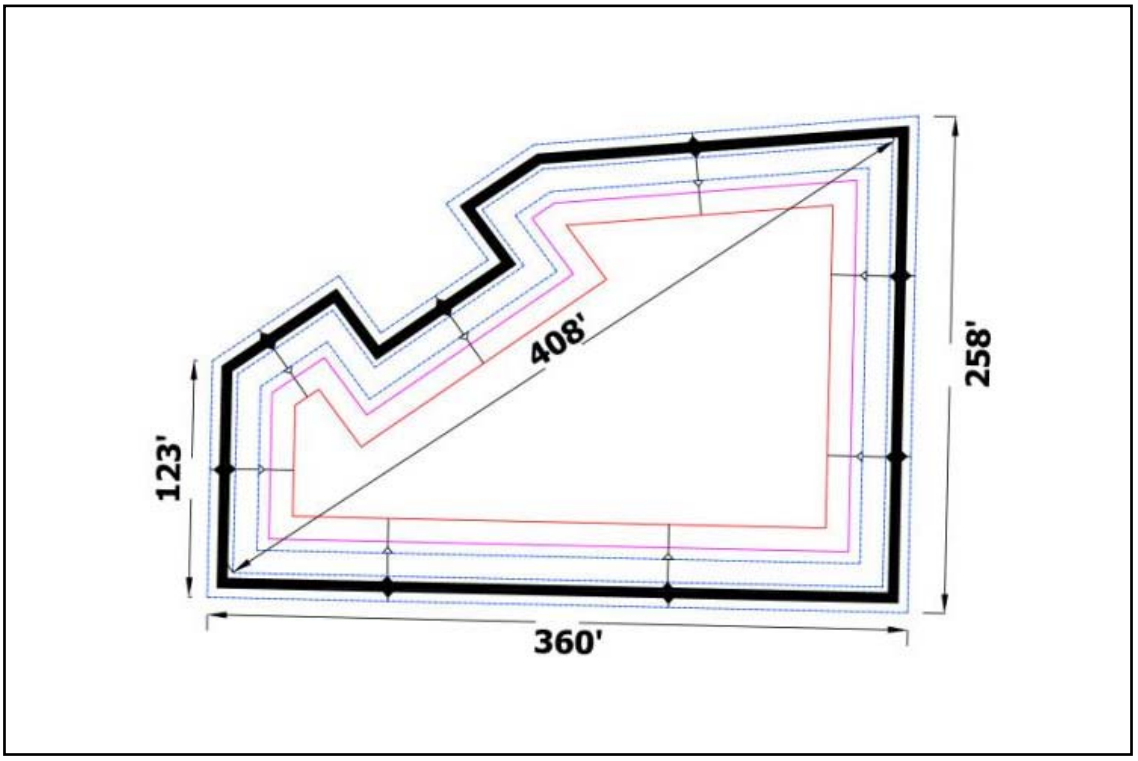

Figure 9. Alternative 4 - Permanent berm with impermeable geotextile at existing dewatering site.

8.5.7 Alternative 6: Temporary Berm Existing Dewatering Site

Temporary berms would be built at the existing dewatering site for mobilization in April and demolished each September, after which the site would be graded to allow other interim uses such as storage or parking. The berms would require 4,200 yd^3 of material each time they were constructed. The material to build the berms would be scraped from the site during basin excavation.

Alternative 6 would not have capacity to dewater more than about 2,500 yd^3 of dredged sediment at a time, and sediment would need to be removed from the basin during dredging. Sediment removed from the basin during dredging would be stored near the north site (figure 1). The general layout of this alternative is the same as in Alternative 4 (figure 9).

8.6 Discussion of Alternatives

8.6.1 Alternative: No Action

The no action alternative would continue disposal at the existing facility as is now being conducted. The capacity of the existing facility is 1,500 yd^3 and dewatered material would continue to be hauled from the dewatering facility by truck to the storage site described in Section 5.0 several times each dredging season to maintain disposal capacity. The dredge operator would be required to shut down several times each dredging period to allow dewatering, loading and hauling from the facility. The Corps would continue to pay for loading and hauling material from the facility to maintain its capacity. The storage lot where the material is hauled, the north dewatering site in figure 1, is approximately 3/4 mile from the existing dewatering site.

Effluent would continue to be discharged through a mostly unlined ditch to the beach on the west side of the spit and continue to exceed allowable turbidity levels set by State water quality standards. Effluent discharged on the beach would continue to erode a shallow gully at lower tide levels and continue to result in a safety hazard to pedestrians walking on the beach. Local residents and the City of Homer would likely continue to complain about erosion on the beach.

8.6.2 Alternative 1: Soldier Pile Bulkhead Alternative at North Dewatering Site

The vertical walls of the soldier pile bulkhead of the north dewatering facility would allow for more efficient use of the usable area. The volume contained by the bulkhead is greater than that of bermed containment structures on this site (Section 8.6.6). The usable volume of this structure is sufficient to meet the water quality required retention time of 18.4 hours, and dredging shutdown periods would not be required to meet effluent turbidity standards.

This alternative would eliminate the possibility of the City using 92,000 ft^2 of storage and/or parking from future use year round for the lifetime of the structure. With some modification to the interior, it might be possible to use the dewatering facility for storage and/or parking when it is not dewatering or storing dredged material. This would be a local responsibility and must not interfere with the dewatering and storage capabilities of the facility.

Initial construction time and costs for the soldier pile alternative on the north dewatering site are higher than those of the other alternatives. Maintenance costs for the soldier pile bulkhead alternatives are also more costly than the permanent berm alternatives due to higher costs for repairs and materials.

It is assumed that a booster pump might be required for all dewatering at the north dewatering site alternatives because of the distance from the dredge to the site. The possible need for a booster pump could make it more costly to pump slurry to a dewatering facility on the north dewatering site. Pumping directly to the north dewatering site, however, eliminates the need to truck the material between the existing dewatering site and a storage area. With elimination of the trucking costs, it would be more economical to dewater in a dewatering facility at the north dewatering site than at the existing dewatering site.

8.6.3 Alternative 2: Soldier Pile Bulkhead Alternative at Existing Dewatering Site

The vertical nature of soldier pile bulkhead walls allows for more efficient use of the existing dewatering site because the volume contained by the vertical bulkhead is greater than that of a bermed containment structure. The volume usable within Alternative 2 is sufficient to meet the water quality required retention time of 18.4 hours. No dredging shutdown periods would be required to meet effluent turbidity standards.

This alternative would eliminate 84,190 ft^2 of storage and/or parking year round for the lifetime of the structure. It is possible that with some modification the interior of the facility could be used as storage and/or parking area when it is not dewatering or storing dredged material. This would be a local responsibility and must not interfere with the dewatering and storage capabilities of the facility.

Initial construction time and costs for the soldier pile alternative on the existing dewatering site are higher than those of the other alternatives. Maintenance costs for the soldier pile bulkhead alternatives are also more costly than the permanent berm alternatives due to higher costs for repairs and materials.

The cost of dredging for dewatering alternatives at the existing dewatering site is more costly than those on the north dewatering site due to the costs associated with hauling the material between the existing dewatering site and storage site.

8.6.4 Alternative 3: Permanent Berm with Impermeable Geotextile Construction at North Dewatering Site

The permanent berm alternative on the north dewatering site has roughly 30 percent less capacity than the soldier pile bulkhead alternative. This reduction in volume reduces the effective retention time within the dewatering facility from 18.4 hours to 17.7 hours. Dredging operations are most often not able to operate in a continuous manner. Periodic maintenance and repositioning of dredging equipment, crew shift changes, crew breaks, and maintenance of the dredged material dewatering and/or storage areas may all cause temporary stoppage of dredging. It is assumed that these slight delays in the contractor's operations would account for the minimal operational downtimes that would be needed to meet the required retention time. This alternative should produce acceptable effluent quality and material retention when the logistical considerations of the contractor's operation are taken into account.

This alternative would eliminate 92,000 ft^2 of storage and/or parking year round for the lifetime of the structure.

The initial cost of construction for the permanent berm alternative on the north dewatering s site is lower than the soldier pile bulkhead alternative. Minor facility maintenance including berm reshaping and geotextile material replacement would be required each year to make the permanent berm usable for dewatering. Maintenance costs are also more economical than the soldier pile bulkhead alternatives due to the lower cost of construction materials.

As in Alternative 1, elimination of the need to truck dewatered material from the existing dewatering site to a distant storage area could make dewatering directly at the north dewatering site more cost effective than at the existing dewatering site even though the pumping distance is farther and may require a booster pump.

8.6.5 Alternative 4: Permanent Berm with Impermeable Geotextile Construction at Existing Dewatering Site

The alternatives using berm containment have capacities roughly 30 percent less than that of the bulkhead alternatives for both sites. This reduction in volume reduces the effective retention time within the dewatering facility.

This alternative has a retention time of 16.3 hours, less than the water quality required retention time of 18.4 hours. Dredging operations are most often not able to operate in a truly continuous manner. Periodic maintenance and repositioning of dredging equipment, crews shift changes, crew breaks, and maintenance of the dredged material dewatering and/or storage areas may all cause a temporary stoppage of dredging. It is assumed that these slight delays in the contractor's operations would account for the minimal operational downtimes that would be needed to meet the required retention time. This alternative should produce acceptable effluent quality and material retention when the logistical considerations of the contractor's operation are taken into account.

This alternative would eliminate a total of 84,200 ft^2 of storage and/or parking from future use year round for the lifetime of the structure. Due to the side slopes present within the interior of the berms, the interior should not be used for other purposes during periods of non-use for dredging material. Additionally, up to approximately 56,500 ft^2 of land between the freight dock road and log truck bypass road could be precluded from use as storage or parking for periods of time throughout the lifetime of this facility. The frequency and amount of land impacted would depend upon how much and how long dewatered dredged materials are stored at the site before they are removed and utilized.

The initial construction costs for this alternative are lower than those of the soldier pile bulkhead alternatives. A minor amount of facility maintenance including berm reshaping and geotextile material replacement would be required each year to make it usable for the upcoming dredging season. Maintenance costs are more economical than the soldier pile bulkhead alternatives due to the lower unit costs of the construction materials.

The cost of dredging for dewatering alternatives at the existing dewatering site is more costly than the alternatives on the north site due to costs associated with transporting material between the dewatering site and storage site.

8.6.6 Alternatives 5: Temporary Berm Construction at North Dewatering Site and Alternative 6: Temporary Berm Construction at Existing Dewatering Site

Alternatives using temporary berms are substantially more costly than the other construction alternatives due to the costs of constructing and deconstructing a dewatering facility up two or three times a year. Temporary berm alternatives would also not

provide the required retention time to meet the State water quality standards for the effluent and significant downtime would be needed to meet the standards. Temporary berms are also reduced incapacity because they can not pond water as high as reinforced berms (Alternatives 3 and 4) and are subject to failure because of the composition of the material available for construction. Due to these reasons, temporary berm alternatives are not feasible and were eliminated from consideration.

8.6.7 Capacities

The capacity of the alternatives to hold sediment without hauling it from the dewatering facility is summarized in table 3 below. Unlimited capacity from upland sites would be realized with in-season and annual hauling to a storage or beneficial use site as described in Section 8.3.7, Dewatering Operations and Maintenance.

Table 3. Capacity of alternatives to hold dredged sediment.

Alternative	Site	Construction	Capacity
Nearshore Inwater	Kachemak Bay	None	Unlimited
Ocean Inwater	Lower Cook Inlet	None	Unlimited
No Action	Existing	Temporary Berm	1,500 yd^3
1	North	H-pile and Timber	15,130 yd^3
2	Existing	H-pile and Timber	10,000 yd^3
3 [a]	North	Permanent Berm	9,500 yd^3
4	Existing	Permanent Berm	5,500 yd^3
5	North	Temporary Berm	4,000 yd^3
6	Existing	Temporary Berm	2,500 yd^3

a. Base Economic Plan and Locally Preferred Alternative.

8.7 Estimated Cost of Alternatives

A summary of the cost estimate for 4 of the 6 alternatives is in table 4 below. Alternatives 5 and 6, which incorporated un-reinforced temporary berms were eliminated from consideration because a dewatering facility with temporary berms would:

1. Have a lower capacity.
2. Have porous berms that would be subject to failure.
3. Result in a safety hazard.

Alaska District Cost Engineering did not include Alternatives 5 and 6 in the micro computer assisted cost estimating software (MCACES) analysis (Appendix C) as a result.

Contingency estimates in Table 4 are based on estimated project costs. Contingency for projected estimated less than 10 million dollars is set at 25 percent while the estimated contingency for projects over 10 million dollars is 20 percent. Escalation estimates are taken from standardized Corps escalation factor sheets.

8.8 Beneficial Uses Associated With Upland Dewatering

Corps of Engineers regulations and policy guidelines ER 1105-2-100 (22 April 2000) requires consideration of beneficial uses for dredged materials. The City of Homer has agreed to beneficially use the dredged material and would use it as discussed in the sections 8.8.1 through 8.8.8 following.

Table 4. Summary of cost estimates from micro computer assisted cost estimating software (MCACES) for considered upland disposal alternatives 1-4.

			Estimated Cost in Thousands							
Alternative 1	Quantity	Unit	Contract	Escalation	SIOH	Contingency	Lands	PED	Total Cost	Unit Cost
Soldier Pile Bulkhead North										
TOTAL Homer, Dredging & Dewatering	20	YR	8,469	1,949	833	2,250	0	0	13,501	675
TOTAL Construct Confinement Initial	1	Job	1,508	0	121	326	7	150	2,112	2,112
TOTAL Reroute Logtruck Bypass Road	1	Job	37	0	3	8	0	0	48	48
TOTAL Repair Confinement Annual	19	YR	1,926	443	190	512	0	0	3,070	162
TOTAL	320,000	CY	11,940	2,392	1,147	3,096	7	150	18,731	937
Alternative 2	Quantity	Unit							Total Cost	Unit Cost
Soldier Pile Bulkhead Existing										
TOTAL Homer, Dredging & Dewatering	20	YR	8,444	1,943	831	2,244	0	0	13,462	673
TOTAL Construct Confinement Initial	1	JOB	1,382	0	111	299	0	150	1,941	1,941
TOTAL Repair Confinement Annual	19	YR	1,689	389	166	449	0	0	2,692	1,417
TOTAL	320,000	CY	14,069	2,919	1,359	3,669	0	150	22,167	1,108
Alternative 3	Quantity	Unit							Total Cost	Unit Cost
Permanent Berms North										
TOTAL Homer, Dredging & Dewatering	20	YR	8,542	1,966	841	2,270	0	0	13,618	681
TOTAL Construct Confinement Initial	1	Job	369	0	30	80	7	150	636	636
TOTAL Reroute Logtruck Bypass Road	1	Job	37	0	3	8	0	0	48	48
TOTAL Repair Confinement Annual	19	YR	279	64	27	74	0	0	445	23
TOTAL	320,000	CY	9,227	2,030	901	2,432	7	150	14,747	737
Alternative 4	Quantity	Unit							Total Cost	Unit Cost
Permanent Berms Existing										
TOTAL Homer, Dredging & Dewatering	20	YR	8,881	2,044	874	2,360	0	0	14,160	7,080
TOTAL Construct Confinement Initial	1	JOB	275	0	22	59	0	150	507	507
TOTAL Repair Confinement Annual	19	YR	241	55	24	64	0	0	384	20
TOTAL	320,000	CY	11,952	2,687	1,171	3,162	0	150	19,122	956

A local ordinance requires that dredged material remain on the Homer Spit, which limits the number of beneficial uses for the material. The City of Homer has agreed to amend the ordinance to allow use of the material off the Homer Spit if the annual quantity of dredged material cannot be fully utilized on the spit (Appendix A). The dewatering alternative selected as a result of this DMMP study would not influence the beneficial uses of dredged materials, and the City would transport material from a dewatering site for beneficial use at no cost to the Federal government.

The City would ensure that all environmental concerns are addressed, and that dredged materials used on or off Homer Spit would not be utilized in wetland areas without a specific permit issued by the regulating agencies.

8.8.1 Replenishment of Fishing Lagoon Outer Berms

Dredged material can be used to replace berm material near the 'Fishing Lagoon' entrance (Appendix A) that is sometimes lost during winter/spring storms. The Fishing Lagoon is on the Spit about 100 yards north of the proposed north dewatering site. This beneficial use is estimated to use between 300 and 2,000 yd^3 of dredged material annually.

8.8.2 Spit Road Improvements

An estimated 50 to 100 yd^3 of dredged material can be used annually to fill potholes and low areas in gravel parking lots on the Spit. Another estimated 200 yd^3 could be used in combination with D-1 gravel imported to the Spit to periodically build up the "crown" in the gravel surfaced freight dock road.

8.8.3 Beach Nourishment on the West Side of the Spit

Roughly 24,000 yd^3 of dredged material could be placed on the beach at the north end of the Spit for beach nourishment. The dredged material would have to be contoured to roughly the same slope as original beach.

The beach could be replenished approximately twice during the 20-year DMMP period. The period between replenishments would depend on the rate of sediment transport (longshore drift). Longshore drift is south toward the end of Homer Spit.

The benefits of using dredged material as beach replenishment have been questioned by permitting agencies and would require justification if pursued as an alternative. The Kachemak Bay Critical Habitat Area extends up to an elevation of 17.2 feet MLLW. Special area permits from Alaska Department of Fish and Game would be required if dredged material were placed below 17.2 feet MLLW.

8.8.4 Mariner Park

Mariner Park is on north end of the Spit facing west. Dredged material could be used to raise the site 2 feet over several years for better drainage. The dredged material would be capped with gravel to provide a drivable surface. Approximately 60,000 yd^3 of material would be used to raise the elevation 2 feet.

The improved parking and camping area of Mariner's Park is suitable for placement of dredged material. The unimproved areas of Mariner's Park are wetlands, and a permit

from the Corps of Engineers Regulatory Branch would be required to expand the park onto the wetland with dredged sediment.

8.8.5 Mud Bay Parking Area

Mud Bay is being considered for a parking area. This parking area would lie between two groins that extend approximately 250 feet into marshlands. The distance between the groins is roughly 150 feet. If constructed, the area between the groins would be filled out 80 feet, which would be approximately 20 feet on tidelands below MHHW.

An estimated 2,000 yd^3 of material would be needed to fill the area between the groins. Another 250 yd^3 of gravel would be needed to cap the dewatered material. Slope protection could also be required.

8.8.6 Ocean Drive Loop Bluff

A 1,800-foot section of bluff parallel to Ocean Loop Road is eroding and the beach at this location could be used as a receiving site for 26,600 yd^3 of dredged material. A fiberglass composite sheet-pile seawall to control erosion and protect the bluff was driven 20 feet from the toe of the bluff. Dredged material was filled behind the seawall, but additional material could be placed to fill in areas around the vertical sections. Material could also be placed in front of the sheet-pile at its unprotected toe. Dredged material placed in these areas would be unprotected and subject to erosion caused by waves and drainage. The estimated quantity of material needed would require nearly 2 years of maintenance dredging effort.

8.8.7 Parking Improvements on the West Side of the Spit

Two parking improvement sites were identified by the City of Homer for possible placement of dredged material. Both sites are on the west side of the highway across from the harbor. The north site is approximately 500 feet long and 60 feet wide. The estimated dewatering volume that could be contained in the north site is 4,500 yd^3. The south site is roughly 600 feet long and 60 feet wide. The estimated dewatering volume that could be contained in the south site is 5,300 yd^3. Both the north and south dewatering sites would accommodate less than 1 year's worth of dredged material.

8.8.8 Contingency Use of Dredged Material

Dredged material in excess of annual needs for beneficial use on city property on Homer Spit would be offered to the public in a sealed bid sale, with use restricted to Homer Spit as required by Homer Ordinance 19.12.

8.8.9 Permits Required for Beneficial Use of Dredged Material

Permits would be required for many of the above beneficial uses before approval was granted for placement of dredged material. Beneficial use that places material in wetlands or below the high tide line would require a Clean Water Act, Section 404 permit and Section 401 certification. Beneficial uses placing material below the 17.2 feet MLLW would require a Critical Habitat permit from the Alaska Department of Fish and Game. Beneficial use of dredged material must also comply with the Alaska Coastal

Management Plan (ACMP) and enforceable policies of the local Coastal Resource Service Area (CRSA) if applicable.

9.0 Real Estate

The base plan alternative (Alternative 3) would use approximately 92,000 ft^2 (2.1 acres) of city-owned land north of the harbor (figure 1). A permanent easement is recommended for a dewatering site and the pipeline and effluent line routes.

The pipeline right-of-way and dewatering site are accessible by city road. The pipeline and effluent rights-of-way would generally involve tidelands and filled tidelands owned by the City of Homer. The effluent pipeline would cross under the State-owned highway, and a right-of-way from the State Department of Public Transportation would be required for the crossing.

Improvements that may be necessary involve the roads that the pipeline may cross. The dewatering site may also impact a local log truck bypass road leading to an occasionally used log storage area. The road would be relocated to allow full construction of the dewatering facility. The log truck bypass road is on City land, but is not a platted road.

Most of the upland required for the pipeline and dewatering site, as well as the tidelands, was previously provided as part of the City's local cooperation agreement in 1983 for construction and operation of the harbor expansion project (Real Estate Plan map in Appendix B). Although the City previously provided the tidelands for the harbor, the Federal government has determined that navigation servitude is available for this project, and therefore, no further interest is needed from the City for use of the tidelands.

Current policy precludes a non-Federal sponsor from receiving credit for the value of lands, easements, relocations, and rights-of-way (LERR) previously furnished as an item of cooperation for another Federal project (PGL 47 c (g)(2)). Therefore, eligible LERR credit for this DMMP dewatering site would be: (1) relocation of the logtruck bypass road, (2) the easement for and placement of the effluent line under the highway, and (3) non Federal sponsor LERR administrative costs. LERR credits are summarized in Section 12, table 5.

The real estate plan for this DMMP is summarized in Appendix B.

10.0 Trade-Off Analysis

Trade off analysis of the alternatives considered show that upland dewatering alternatives are the most environmentally considerate and least damaging to the sensitive marine environment of Kachemak Bay, the KBCHA, and Cook Inlet. Upland dewatering also allows beneficial use of dredged materials where near-shore or offshore disposal would not provide for beneficial uses. Economic consideration for selection of a base plan is discussed in the following sections.

11.0 Base Plan Selection

Corps of Engineers regulation ER1105-2-100 (22 April 2000) requires that economics be considered when selecting the base plan. Detailed micro computer assisted cost estimating software (MCACES) estimates (table 4) determined that Alternative 3: Permanent Berm with Impermeable Geotextile Construction at the north dewatering site is the least cost base plan. The City of Homer also recommends Alternative 3 as the base plan, and Alternative 3 is the city's LPP (Section 3.0). The layout of Alternative 3 is repeated in figure 10.

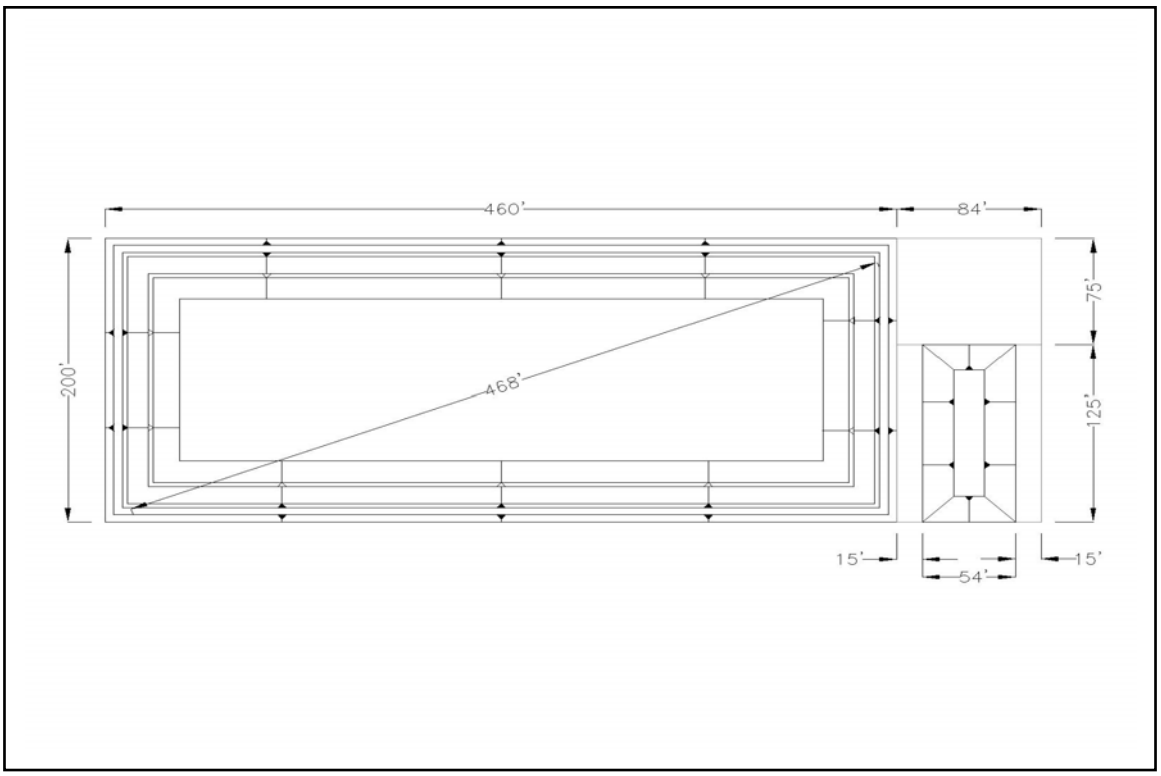

Figure 10. Alternative 3, Permanent berm with geotextile and temporary excess dredged material stockpile on the North dewatering site.

12.0 Cost Sharing

Initial construction of the recommended alternative (Alternative 3) would be cost shared between the Federal Government and the City of Homer. Policy Guidance Letter 47 states that the costs of constructing land-based and aquatic dredged material dewatering facilities associated with the construction, operation, and maintenance of all Federal navigation harbors, and inland harbors shall be considered costs of constructing a General Navigation Feature (GNF) of the project and shall be shared in accordance with the procedures set forth in Section 101(a) of WRDA 86. Under section 101(a) cost sharing, the non-Federal sponsor would pay during construction 10 percent of the cost of constructing a dewatering facility for that portion of a project with depths not greater than 20 feet; 25 percent of the cost of constructing a dewatering facility for that portion of a project with depths greater than 20 feet but not greater than 45 feet; or 50 percent of the cost of constructing a dewatering facility for that portion of a project with depths greater

than 45 feet. The non-Federal sponsor for construction of a dewatering facility on the north dewatering site is the City of Homer.

The maintenance depth of the entrance channel to the Homer Harbor is –20 feet MLLW, and the City of Homer would be responsible for paying 10 percent of the initial construction costs during construction of Alternative 3. The City of Homer would also be responsible for an additional 10 percent of construction costs (deferred amount) payable over a period not to exceed 30 years. The deferred amount is reduced by allowable LERR credits. Allowable LERR credits are costs for project requirements the City of Homer is responsible for providing. This LERR credit is currently estimated at $52,000 to credit the City of Homer for costs of relocating the logtruck bypass road, the right of way for the effluent pipe under the State highway on the Homer Spit, and LERR administrative costs. Table 5 summarizes cost sharing between the Federal government and the City of Homer.

Where confined dewatering facilities are located on port property, the dewatering facility operations, maintenance, and management are accomplished at full non-Federal cost without reimbursement. Specifically, the sponsor would operate, maintain, and manage the dewatering facilities in exchange for the opportunity to beneficially use the dredged material. Costs for facility maintenance by the City of Homer are estimated as a line item in Table 5.

Table 5. Estimated Federal and City of Homer Cost Share Data.

Items	Project Contract Cost ($000)	Implementation Costs ($000)			
		Federal	%	Non-Federal	%
Initial Construction of Dewatering Facility	369	332		37	
Construction Contingency (20% of Initial Construction)	74	67		7	
Preconstruction, Engineering, & Design (Lump Sum)	37	33		4	
Construction Management (8% Initial Construction + Contingency)	35	32		3	
LERRD Administrative Costs	7	6		1	
Initial Construction Subtotal [b]	522	470	90	52	10
Additional Funding Requirement					
10% of Initial Construction Subtotal		-52		52	
Logtruck Bypass Relocation Credit		37		-37	
LERR Land Value Credit (Pipeline Easement)		7		-7	
LERR Local Sponsor Administrative Costs Credit		5		-5	
Adjustment for LERR Credits		0		0	
Additional Funding Requirement Subtotal	522	-3		3	
Total DMMP Initial Construction Costs [a]	522	467		55	

a. Does not include escalation, SIOH, and PED costs from Table 4.

13.0 NED Benefit Assessment

13.1 Scope of Economic Assessment.

The purpose of this economic assessment of the Homer Small Boat Harbor is to determine if continued maintenance of the harbor can be justified economically. The guidance for the preliminary assessment recommends that continued maintenance of the Homer Harbor (figure 1) be evaluated based on indicators of current economic conditions relative to the most recent study in the area. The most recent study was the 1981 Section 107 Study that approved the latest expansion of the harbor. Construction on the expansion was completed in 1985 (Section 4.0).

The majority of space within the Homer Small Boat Harbor is used for moorage. Depths within the boat harbor range from -10 to -20 feet MLLW. The small boat harbor has capacity for approximately 920 vessels in reserved slips and another 500 vessels on transient moorage docks. The capacity for vessels and demand for moorage has grown exponentially from the space for 58 boats that was authorized in 1958. Additional berthing space from 11 to 15 acres east of the existing boat basin is currently under study. Two fuel docks with depths of -20 MLLW feet service vessels using the harbor. The South Fuel Dock provides 120 feet of berthing space. There is also a fish dock with a depth of -20 feet MLLW that provides 383 feet of berthing space. Most vessels using harbor facilities are recreational and commercial fishing vessels.

13.2 Economic Activities Used to Justify Project

The 1981 Section 107 study that approved the most recent expansion of the Homer Small Boat Harbor basin was selected by comparing the economic activities used to justify dredging of the Homer small boat basin with current economic activities.

As noted earlier, this Section 107 Study authorized the expansion of the boat basin from a 17-acre basin with 398 permanent and 200 transient slips to the existing 50-acre basin with 920 permanent and 500 transient slips. The benefits used to justify the work were addressed in the "Detailed Project Report and Final Environmental Impact Statement," dated February 1981.

The Detailed Project Report showed average annual benefits of $1,447,600 (FY80 price levels, and $7^{3}/_{8}$ percent interest rate) for expanding the boat harbor. Benefits were for commercial fishing and recreational vessels using the harbor. Approximately 1/3 of the expected benefits were from reduced damages to vessels associated with overcrowding in the harbor, another 1/3 of the benefits were from increased fish catch, and the final $^{1}/_{3}$ came from increased usage of the harbor by recreational and commercial vessels. Expected average annual benefits exceeded average annual costs of $289,600 by a margin of $858,000, which gave the project an estimated benefit to cost ratio of 3.9 to 1.

The Detailed Project Report presented data on the estimated increase in fish catch. The report discussed that an expanded harbor would allow further diversification of the fishing industry to include fisheries not currently utilized. The report said fish landings at Homer could be increased by 10 million pounds and provide average annual NED benefits of $351,600 in 1980 dollars with Homer harbor expansion. Table 6 below shows

the harvest levels of all species with landings at Homer for the period 1980 to 1984. The harbor expansion was completed in FY 1985.

Table 6. Homer Commercial Fishing Industry, 1980-1984.

Year	All Fisheries Combined (Pounds Landed)
1980	33,962,744
1981	37,043,117
1982	35,633,349
1983	30,088,172
1984	28,863,005
5- year average	33,118,077

Sources: Alaska Department of Fish & Game, Commercial Fisheries Entry Commission, Permit and Fishing Activity by Year, State, Census Area, or City.

The Detailed Project Report also described benefits associated with reducing overcrowding in the small boat harbor. Prior to expansion of the harbor in 1985, 1,000 boats would compete for the 398 permanent and 200 transient moorage spaces. Boats that did not have a permanent slip or could not find a transient slip moored in any usable space: at the end of docks, between the dock and shore, alongside other moored boats, or used permanent slips when the vessels were out of the harbor. Many of the 200 spaces for transient vessels were at the transient dock, which was designed for only 20 boats. In 1985, the small boat harbor had a waiting list of 1,348 boats for permanent moorage. A significant portion of the benefits of the expansion project were attributed to reduced damages to recreational and commercial boats, reduced damages to port facilities, reduced port labor associated with attending and preventing accidents related to overcrowding, and an increased capacity to provide a harbor of refuge during storms. Average annual benefits of $299,100 (1980 dollars) were estimated for reducing this overcrowding.

The Detailed Project Report also described benefits associated with new vessels using an expanded small boat harbor. With the increased capacity, recreational boats would not only face less congestion and delays, but also would utilize the harbor more. In addition, it was estimated that an additional 25 charter boats would utilize the harbor if it had increased capacity. In the early 1980s, 14 charter boats were harbored in Homer. For these additional recreational and charter boats, average annual benefits were estimated at $369,600 and $79,000 (1980 dollars) respectively.

13.3 Current Economic Activities.

The area's major industry continues to be commercial fishing, which contributes millions of dollars a year into the economy through the sale of salmon, halibut, crab, herring, and sablefish. Table 7 shows commercial fish landings at Homer for the five most recent years.

Table 7. Homer Commercial Fishing Industry, 2000-2004.

Year	All Fisheries Combined (Pounds Landed)
2000	62,142,601
2001	58,477,348
2002	63,983,825
2003	62,448,101
2004	68,390,659
5- year average	63,088,507

Source: Alaska Department of Fish & Game, Commercial Fisheries Entry Commission, Permit and Fishing Activity by Year, State, Census Area, or City.

Homer also sports a lively recreation scene along the 5-mile-long, world-famous Homer Spit, and offers travelers an unbelievably spectacular view of Kachemak Bay. The harbor is lined with charter boats for hire, and fresh halibut, crab and shrimp can be purchased from seafood shops along the docks. Homer is famous for its sport-caught halibut and halibut-fishing derby. Halibut caught in Kachemak Bay and the nearby lower Cook Inlet can weigh in excess of 300 pounds. Charter boats are available for halibut and salmon fishing. The harbormaster estimates that currently there are over 100 charter boats that moor and work out of the Homer Small Boat Harbor. Halibut charters are abundant in lower Cook Inlet and are readily available and run daily from the harbor. Water taxi services available at the harbor provide access to areas of recreation such as Kachemak State Park, located across Kachemak Bay from Homer. Charter boats are typically 36 to 50 feet long and carry from 6 to 12 or more recreational anglers and a crew of two or three persons. Most charter boats using the Homer Harbor fish for Pacific halibut, but salmon or combination halibut-salmon charters are also offered.

Homer has a significant number of recreation vessels. Recreation boaters represent approximately 60 percent of all vessels using the harbor. In 2000, there were 291,001 recreational angler days on the Kenai Peninsula in the saltwater finfish fishery. Recreational angler effort has averaged 164,696 angler days over the most recent 10-year period. The average number of angler days increased 45 percent over the previous 10-year period (table 8).

Table 8. Saltwater Finfish Effort in Angler Days, 1985-2004.

Year	Angler Days	Year	Angler Days
1985	63,099	1995	156,222
1986	74,781	1996	116,089
1987	104,602	1997	114,998
1988	127,748	1998	99,406
1989	98,892	1999	107,496
1990	133,938	2000	291,001
1991	117,992	2001	182,223
1992	127,971	2002	186,096
1993	140,302	2003	189,555
1994	143,033	2004	203,878
10-year average	113,236	10-year average	164,696

Source: For years 1983 through 1999 - Report to the Alaska Board of Fisheries, Recreational Fisheries in the Lower Cook Inlet Management Area, 1995-2000 by Nicky Sarzi and Robert Begich. For years 2000 through 2004 - Alaska Department of Fish and Game, Division of Sport Fish annual harvest surveys for the Kenai Peninsula.

The existing Homer harbor is utilized beyond its capacity. Currently, the 50-acre Homer Small Boat Harbor has 920 permanent recreational and commercial moorage stalls and has a waiting list of 200 boats. For some larger boats, the wait for permanent moorage is 6 to 7 years. Because of the long wait time, many boat owners who need permanent moorage do not add their names to the list. A Corps General Investigation (GI) study is currently underway with the City of Homer to examine increasing the moorage capacity of the Homer harbor. Current recreational and commercial vessels using the facilities range in length from 18 to 75+ feet and require draws from 2 to 13 feet.

In addition to the 920 permanent berth holders, the Homer Small Boat Harbor has 6,000+ linear feet of transient dock. Table 9 is a summary of boats moored in July 2005.

Table 9. Summary of Boats Moored July 2005.

Vessel Use	Number, July 2005
Recreation	577
Commercial	267
Government	8
Load & Launch Ramp	200
Total	1,052

Source: Homer Harbormaster's Office.
Note: Load and launch boats included in this table may or may not be moored boats. Load and launch boats contribute to transient dock use while loading, offloading or waiting to use the ramp.

13.4 Comparisons of Current and Previous Dredging Volume/Cost Indicators and Benefit Indicators.

The Federal project provides for access through the entrance channel to moorage within the small boat harbor (figure 1). The Detailed Project Report concluded that there would continue to be dredged material maintenance requirements of 10,000 to 16,000 yd^3 annually to maintain this access. For the most recent 5-year period (2001-2005), the average annual maintenance volume for dredging the channel was 5,565 yd^3 with an average cost of $172,000 (2005 dollars). Current estimates are that 8,000 yd^3 of material would need to be dredged annually to maintain access to and from the small boat harbor. This excludes an additional 8,000 yd^3 that is dredged for moorage of the U.S. Coast Guard vessel. Dredging done for the Coast Guard is done on a reimbursable basis. The current estimate to maintain the channel in 2006, assuming 8,000 yd^3 of material, is $328,000 (2006 dollars).

The guidance for the preliminary assessment recommends that continued maintenance of the Homer Small Boat Harbor be evaluated based on indicators of current economic conditions relative to the most recent study in the area. Based on a comparison of the benefits estimated in the 1981 Detailed Project Report and current conditions, continued maintenance of the harbor is recommended.

Current fish landings at Homer are almost twice as high as they were in the early 1980s. The 5-year average (1980 – 1984) for landings at Homer was 33 million pounds compared with the current 5-year average (2000-2004) of 63 million pounds. Based on

the 1981 study, the NED benefits associated with these increased landings alone are more than six times higher than the current cost of maintaining the harbor.

Other categories also indicate that there are substantial benefits associated with maintaining the Homer Small Boat Harbor. The number of charter boats for recreation fishing is more than twice what was estimated in the 1981 Study. The Detailed Project Report estimated that there were14 charter boats in 1981, and with harbor expansion another 25 charter boats would use Homer Harbor. Current estimates are that there are 100 charter boats using the Homer Small Boat Harbor.

Perhaps the strongest benefit indicator is the continued high demand for moorage at Homer. Even though moorage capacity was doubled in 1985, demand for moorage space at Homer continues to outstrip supply. Despite overcrowded conditions that result in congestion delays and increased probabilities of an accident, commercial and recreational boaters continue to seek moorage at Homer. Further evidence of this unmet demand is the current study underway for moorage expansion. Table 10 summarizes the trend toward increasingly high benefits and relatively stable cost to maintain access to the Homer Small Boat Harbor.

14.0 NEPA Documentation

An Environmental Assessment and a Finding of No Significant Impact are included with this report.

15.0 Coordination

Coordination with the City of Homer and Federal and State resource agencies occurred throughout project planning. Coordination with the City of Homer is included in Appendix A and coordination with Federal agencies is included with the Environmental Assessment**.** Coordination of the project with State agencies including the Department of Natural Resources, Department of Environmental Conservation, and the Department of Fish and Game would be conducted through coordination with the Alaska Division of Natural Resources, Office of Project Management and Permitting.

16.0 Recommendations

It is recommended the dredged material management plan "Alternative 3: Permanent Berm at the North Site" at Homer Alaska be constructed generally in accordance with the plan herein, and with such modifications the Chief of Engineers may advise at his discretion, at an estimated Federal construction cost of $471,000 provided that prior to construction the non-Federal sponsor agrees to the following:

a. Provide, during the period of construction, a cash contribution equal to the following percentages of the total cost of construction of the general navigation features (which include the construction of land-based and aquatic dredged material dewatering facilities that are necessary for the dewatering of dredged material required for project construction, operation, or maintenance and for which a contract for the federal

facility's construction or improvement was not awarded on or before October 12, 1996;): 10 percent of the costs attributable to dredging to a depth not in excess of 20 feet; plus 25 percent of the costs attributable to dredging to a depth in excess of 20 feet, but not in excess of 45 feet; plus 50 percent of the costs attributable to dredging to a depth in excess of 45 feet;

b. Pay with interest, over a period not to exceed 30 years following completion of the period of construction of the project, up to an additional 10 percent of the total cost of construction of general navigation features. The value of lands, easements, rights-of-way, and relocations provided by the non-Federal sponsor for the general navigation features, described below, may be credited toward this required payment. If the amount of credit exceeds 10 percent of the total cost of construction of the general navigation features, the non-Federal sponsor shall not be required to make any contribution under this paragraph, nor shall it be entitled to any refund for the value of lands, easements, rights-of-way, and relocations in excess of 10 percent of the total cost of construction of the general navigation features;

c. Provide all lands easements, and rights-of-way, and perform or ensure the performance of all relocations and deep draft utility relocations determined by the Federal Government to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features (including all lands, easements, and rights-of-way, and relocations necessary for dredged material dewatering facilities);

d. Accomplish all removals determined necessary by the Federal Government other than those removals specifically assigned to the Federal Government;

e. Allow the Federal Government the right to enter, at reasonable times and in a reasonable manner, upon property that the non-Federal sponsor owns or controls for access to the general navigation features for the purpose of inspection, and, if necessary, for the purpose of operating, maintaining, repairing, replacing, and rehabilitating the general navigation features;

f. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the project, any betterments, and the local service facilities, except for damages due to the fault or negligence of the United States or its contractors;

g. Keep, and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of 3 years after completion of the accounting for which such books, records, documents, and other evidence is required, to the extent and in such detail as will properly reflect total cost of construction of the general navigation features, and in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and local governments at 32 CFR, Section 33.20;

h. Perform, or cause to be performed, any investigations for hazardous substances as are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and

Liability Act (CERCLA), 42 U.S.C. 9601-9675, that may exist in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction, operation, maintenance, repair, replacement, or rehabilitation of the general navigation features. However, for lands that the Government determines to be subject to the navigation servitude, only the Government shall perform such investigation unless the Federal Government provides the non-Federal sponsor with prior specific written direction, in which case the non-Federal sponsor shall perform such investigations in accordance with such written direction;

i. Assume complete financial responsibility, as between the Federal Government and the non-federal sponsor, for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features;

j. To the maximum extent practicable, perform its obligations in a manner that will not cause liability to arise under CERCLA;

k. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987, and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way, required for construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act;

l. Comply with all applicable Federal and State laws and regulations, including, but not limited to: Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d) and Department of Defense Directive 5500.11 issued pursuant thereto; Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army"; and all applicable federal labor standards requirements including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a *et seq.*), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 *et seq.*) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c);

m. Provide the non-Federal share of that portion of the costs of archeological data recovery activities associated with historic preservation, that are in excess of 1 percent of the total amount authorized to be appropriated for the project, in accordance with the cost sharing provisions of the agreement;

n. Do not use Federal funds to meet the non-federal sponsor's share of total project costs unless the Federal granting agency verifies in writing that the expenditure of such funds is authorized;

o. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended (42 U.S.C. 1962d-5b), and Section 101 of the Water Resources

Development Act of 1986, Public Law 99-662, as amended (33 U.S.C. 2211), which require that the Secretary of the Army not commence construction of the project, or separable element thereof, until the non-Federal sponsor enters into a written agreement to furnish its required cooperation for the project or separable element;

p. Where confined dewatering facilities are located on port property, the dewatering facility operations, maintenance, and management are accomplished at full non-Federal cost without reimbursement. Specifically, the sponsor would operate, maintain, and manage the dewatering facilities in exchange for the opportunity to beneficially use the dredged material;

The recommendations for implementation of navigation improvements at Homer, Alaska reflect the policies governing formulation of individual projects and the information available at this time. They do not necessarily reflect the program and budgeting priorities inherent in local and State programs or the formulation of a national civil works water resources program. Consequently, the recommendations may be changed at higher review levels of the executive branch outside Alaska before they are used to support funding.

Date:_____

_____
Kevin J. Wilson
Colonel, Corps of Engineers
District Engineer

Table 10. NED Benefit Summary Table.

Statistics	Post 1964 Earthquake	Feb 1981 Report (Built 1985)	Current w/Projected Future	Trend (+,0,-)	Remarks
Port Characteristics	17-acre basin -15 ft MLLW 398 permanent stalls 200 transient stalls 18 to 75 ft boats	50 acre basin–20 feet MLLW, Enlarged staging area, Rubblemound breakwater, 920 permanent stalls, 500 transient stalls, 18 to 75 ft boats, USCG cutter	50 acre basin –20 feet MLLW, Enlarged staging area, Rubblemound breakwater, 920 permanent stalls, 500 transient stalls 18 to 75 ft boats, Larger USCG cutter, DMMP	+	Overcrowding continuous, GI study to expand moorage for commercial and recreational boats underway
Vessel Characteristics					
Commercial: Recreational vessel ratio	Majority Commercial	48% commercial 52% recreational	32% commercial 68% recreational	—	Increasing recreational use is low priority compared to commercial
Commercial vessel trips inbound (Waterborne commerce of the US)	Unknown	241 in year 1994	560 in year 2003	+	Traffic Increased
Commercial Domestic Vessel draw (Waterborne commerce of the US)	Unknown	2-18ft w/2%>15ft in 1994	2-18ft w/68%>15ft in 2003	+	Increasing % of commercial domestic visits requiring greater draw
Economic Benefit Indicators					
Commercial fishing (pounds landed)	Unknown	47,600,000 in 1990	68,400,000 in 2004	+	Landings increased
Recreation (angler days effort)	Unknown	133,983 in 1990	203,878 in 2004	+	Recreation increased
Harbor refuge	Unknown	Yes-improved	Same as in 1985	+	Increasing capacity-expansion study underway
Harbor overcrowding	Yes	Yes-improved	Same as in 1985	+	Increasing capacity-expansion study underway
Charter boats	Unknown	39 in 1980	100 in 2005	+	Charter boats increased
Dredging Cost Indicators					
Dredging cycle	Annual	Annual	Annual		
Anticipated volume (cubic yards)	Unknown	10,000-16,000	16,000 [a]	+	Increased
Example quantities (cubic yards)	10,200 in 1977	14,100 (1988)	16,000 (2006)	0	Slight increase

Statistics	Post 1964 Earthquake	Feb 1981 Report (Built 1985)	Current w/Projected Future	Trend (+,0,-)	Remarks
Example costs ($)	163,800 (1977)	431,000 (1988)	656,000 (2006)	+	Increased
Example cost/cubic yard ($)	16 (1977)	30 (1988)	44 (2006)	+	Increased
Annual cost adjusted to 1958 $	82,400	131,000	126,000	0	Stable adjusted for inflation
a 8,000 from the harbor and 8,000 from the USCG dock.					

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Appendix A

Local Sponsor Letter of Intent and Correspondence

MEMORANDUM 05-28

TO: MAYOR HORNADAY AND HOMER CITY COUNCIL

THRU: WALT WREDE, CITY MANAGER

FROM: PORT AND HARBOR ADVISORY COMMISSION, PORT AND HARBOR DIRECTOR

DATE: JANUARY 31, 2005

SUBJECT: TWENTY YEAR DREDGED MATERIALS MANAGEMENT PLAN

At its January 26, 2005 Regular Meeting the Port and Harbor Advisory Commission discussed the six alternatives for dredged materials management as presented by the U.S. Army Corps of Engineers.

A motion was made, seconded and approved as follows:

The Port and Harbor Advisory Commission recommends to the Homer City Council that it accept the Corps of Engineers Base Plan for Twenty Year Dredged Materials Management and to direct the City Manager to execute the appropriate documents.

The Port and Harbor Advisory Commission identified the following issues of concern regarding the Base Plan that need clarification and review by staff prior to Final Agreement and construction:

- The need for location and design of security fencing,
- The cost and responsibility for relocating a portion of log truck bypass road,
- The incorporation of a truck loading access ramp into the berm design,
- The exact location of the pipeline as it transits the harbor basin; specifically, would its location affect overslope development, bank erosion, harbor operations at the commercial barge ramp or other locations,
- The exact location of the west side effluent diffuser in relationship to MHW.

RECOMMENDATION:

That the City Council accept the Base Plan and direct staff to clarify points outlined above prior to Final Agreement and construction.

CITY OF HOMER
HOMER, ALASKA.

City Manager
Port and Harbor

RESOLUTION 05-21

A RESOLUTION OF THE HOMER CITY COUNCIL ACCEPTING THE BASE PLAN FOR DREDGED MATERIALS MANAGEMENT AS PRESENTED BY THE U.S. ARMY CORPS OF ENGINEERS AND AUTHORIZING THE CITY MANAGER TO EXECUTE THE APPROPRIATE DOCUMENTS.

WHEREAS, the U.S. Army Corps of Engineers annually conducts maintenance dredging at the Homer Small Boat Harbor; and

WHEREAS, up to 16,000 cubic yards of material is dredged, de-watered and deposited each year, and

WHEREAS, the U.S. Army Corps of Engineers conducted a multi-year study to determine the least cost alternative for managing the dredged materials that also meets certain environmental and engineering standards: and

WHEREAS, the U.S. Army Corps of Engineers presented a detailed cost-benefit analysis of the least cost alternative at the January 24th regular meeting of the Homer City Council; and

WHEREAS, this alternative identified as the Base Plan was studied and reviewed by the Port and Harbor Advisory Commission and City staff; and

WHEREAS, the Port and Harbor Advisory Commission and staff identified issues in need of clarification prior to final agreement and construction contained in Memorandum 05

NOW, THEREFORE, BE IT RESOLVED that the City Council of Homer, Alaska hereby accepts the Base Plan for Dredged Materials Management upon clarification of the issues identified in Memorandum 05-28 and authorizes the City Manager to execute the appropriate documents.

PASSED AND ADOPTED by the Homer City Council this 14TH day of February 2005.

CITY OF HOMER

JAMES C. HORNADAY, MAYOR

ATTEST:

MARY E. CALHOUN, CMC, CITY CLERK

Fiscal Note: $19.326 estimated. Port and Harbor Reserves. 2006 budget request.

City of Homer *City Manager*
491 East Pioneer Avenue
Homer , Alaska 99603
907-235-8121, X -2222
Fax:(907) 235-3148

Friday, November 15, 2002
Ms: Barbara N. Reilly, Project Manager Mr. George A. Kalli, Project Formulator U.S. Army Corps of Engineers
Alaska District P.O. Box 898 Anchorage, Alaska 99506-0898

Re: 20-Year Dredged Materials Management Plan
Dear Ms**.** Riley & Mr. Kalli:

Information has been requested from the City of Homer describing how the dewatered dredged materials will be used beneficially for the complete time period encompassed by the above referenced 20--year plan. This information follows:

1 Dredged materials will be utilized on City of Homer property on Homer Spit for:

Replenishment of Fishing Lagoon outer berms (refer to attached drawing) near the lagoon entrance, to replace berm material lost during winter/spring storms (estimated 300 to 2000 cubic yard annual requirement);

Expansion of Spit parking lots (estimated total requirement of 35,000 cubic yards, as reflected in drawings included with attached 9/26/01 letter);

Filling potholes and low areas in gravel parking lots on the Spit (estimated 50 to 100 cubic yard annual requirement);

In combination with D-1 gravel imported to the Spit, periodically building up the "crown" in the gavel surfaced Freight Dock Road and compact and grade this roadbed (estimated 200 cubic yards dredged materials annually);

Raising the level of the campground/parking area at Mariner Park, incrementally over several years, by 2 feet to provide better drainage (estimated total requirement 60,000 cubic yards as reflected in drawing included with attached 9/26/01 letter);

2 Dredged materials in excess of annual needs for beneficial use on City property on Homer Spit will be offered to the public in a sealed bid sale, with use restricted to Homer Spit as required by Homer Ordinance 19.12. Proceeds from such sales will defray a portion of the "City Share" under a cost sharing agreement that will be a part of the 20-Year Dredged Materials Management Plan mutually agreed to and signed by the Corps of Engineers and the City of Homer.

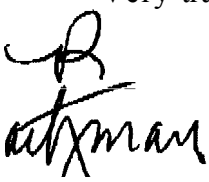
3 When and if it is projected that the annual quantity of dredged materials cannot be fully disposed of by the above indicated means, the City of Homer will prepare for this by a revision to Ordinance 19.1.2 to allow for beneficial use of dredged materials off the Homer Spit, both on City-owned, off-,Spit properties and on public-owned properties via sealed bid sale of materials surplus to City needs:

4 The City of Homer will ensure that all environmental concerns are addressed, and that dredged materials used as backfill either on or off Homer Spit will not be utilized in wetland areas without a specific permit issued by the controlling agencies.

5 The City of Homer understands that any alternative that involves placement of dredged materials below the mean high tide line and/or below mean high water will or may require permits under Clean Water Act Section 404, Clean Water Act Section 10, State of Alaska Critical Habitat regulations, and must comply with the State of Alaska Coastal Management Plan if applicable. Tire City of Homer will ensure that placement of dredged materials by the City or its contractors will be performed under these permitting criteria, and that any buyer of dredged materials for private use either on or off the Spit, signs a form indicating understanding of and intent to comply with these permitting criteria:

We look forward to working with the Corps of Engineers team to finalize this 20-Year Dredged Materials Management Plan. T am also enclosing two sections of our City Code Mr. Kalli requested.

Very truly yours,



Ronald Wm. Drathman Homer City Manager
RWD: abs Encls. Cc: Mayor & Council Public Works Port & Harbor
Planning Departments Fax: Reilly at 907-753-2758 Kalli at *907-753-2625*

Chapter 19.12

EXCAVATION OF HOMER SPIT BEACH (-4)

SECTIONS

19.12.010 Intent It is the intent of this chapter to protect and preserve the stability of that land area known as the Homer Spit and all the land areas within the corporate limits of the City which may require like protection: (Prior code 91-100:1).

19.12.020 Definitions *The* following words, when used in this chapter, shall, for the purpose of this chapter, have the meanings respectively ascribed to them in this section:

a. "Excavation" means the digging out and removal of gravel or other fill materials whereby any existing surface grade is altered or disturbed.

"Removal" means the movement, by lifting, pushing aside or taking away or off of any gravel or other fill materials from any area subject to the provisions of this chapter. (Prior code 1-100.9)

b. For the purposes of this chapter "beach area" shall include the zone of sand, gravel and other unconsolidated materials that extends landward from the low water line to the place where there is a marked change in material or physiographic form.
c. "Berm" means a natural, linear mound or series of mounds of sand or gravel, or both generally paralleling the water at or landward of the line of ordinary high tide.
d. "Storm berm" means a berm formed by the upper reach of storm wave surges or the highest tides. Storm berms generally include an accumulation of seaweed, driftwood, and other water-borne materials. A beach may have more than one storm berm. (Ord. 02-14(A)l, 2002; Prior code 1.-100.9).

19.12.030 Reference to materials,. plat--Permits. The removal or excavation of gravel, gravel fill or other fill material from any beach or from any portion of the Homer Spit shall be regulated by the City. Reference shall be made in all cases to the Materials Plat prepared jointly by the State Division of Lands and the U. S. Corps of Engineers, which is available and may be examined during business hours at the Homer City Hall. A permit shall be required in the following instances

a. Whenever-gravel, gravel fill or other fill material is removed from Homer Spit or from beaches elsewhere within the corporate limits, of the City;
b. b: Whenever such materials are removed or excavated from any naturally created berm area, or from any berm area created for the protection of the land areas. (Prior code 1-100.2).

19.12.040 Guidelines. Any applicant for a permit shall comply with the following:

a. Permits shall be issued pursuant to guidelines formulated by the State Division of Lands and the U.S. Corps of Engineers, as referred to by the above-mentioned Materials Plat. Such guidelines may be altered from time to time by the Division of Lands and the Corps of Engineers as additional data is received by these agencies.
b. No permits shall be issued for excavation or removal of gravel or fill materials from area "A" as designated on the above-mentioned plat prior to review and approval of the permit application by the Corps of Engineers and the Division of Lands.
c. Permits may be issued by the City for such excavation or removal from areas B and C as designated on the plat, without review and approval of the permit application by the Corps of Engineers or the Division of Lands.
d. No permit will be issued by the City for such excavation or removal of gravel, gravel fill or outer fill materials from any area outer than areas "A", "B" and "C" as designated on the Materials Plat. e. All permit application required under this chapter shall be accompanied by a site plan showing the precise location and dimensions of the proposed excavation or removal in reasonably sufficient detail, including depth, and stating the amount of material to be excavated or removed.
e. All applications required under this chapter shall be submitted to the City Clerk, together with the request accompanying instruments, and a permit fee of five dollars.

f. No permit shall be issued that will allow gravel, gravel fill, or other fill materials to be taken off the Homer Spit. Any such materials excavated or removed anywhere on the Homer Spit shall be used only at another location on the Homer Spit.
g. Gravel for transshipment: Non-native gravel or other earthen commodities may be shipped to the Homer spit, stored on the Spit, and exported from the Spit. Gravel for transshipment must be permitted by the City of Homer. The permit shall describe the terms and timelines of the transshipment and the volumes of materials involved. (Ord. 98-2(A)(S)(A) 2,'1998; prior code 1-100.3).

19.12.50 Exceptions.

a. No permit shall be required for excavation necessary for the installation of sewage lines, water lines, underground power lines, armor rock or piling, wells, oil and fuel tanks and related lines and aboveground power lines from any location other than a berm area, provided such excavated material is not removed from site of construction, nor shall a permit be required for clearing or maintaining any public road.

c. This chapter shall not apply to the removal or excavation of gravel, gravel fill or other fill material from any beach or from any portion of the Homer Spit by the City of Homer. (Ord. 02-14(A),1, 2002; Ord. 98-2(A)(S)(A)1,1998; Ord. 6-720.21-100.4):

19.12.060 Review person whose application is denied shall be entitled to a review of such denial by the City Council. A request for review shall be in writing and submitted to the City Clerk within ten days of such denial. The City Clerk shall, whenever feasible, thereafter place the matter of review on the agenda for the next regularly scheduled meeting of the City Council, but in any event, such review shall not be later than the second regularly scheduled meeting after such request is received. (Prior code 1100.5).

19.12.070 Nonliability-- The City shall not be liable for damages accruing as a result of any excavation or removal of gravel, gravel fill or fill material pursuant to the issuance of a permit under this chapter. (prior code 1-100.6).

19:12.080 Conformance to permit. Any excavation or removal of gravel, gravel fill or fill material except by permit where required shall be considered a violation of this chapter. (Prior code 1-100.7).

19.12.090 Driftwood Removal Prohibited No person shall tamper with, burn or remove driftwood from a storm berm. (Ord. 02-14(A),1, 2002.)

19.12.100 Violation Penalties The violation of any provision contained in this chapter shall be punished under the general penalty provision, Section 1.16.010, of the City Code. (Ord. 02-14(A),1, 2002; Prior code 1-100.8).

4. Prior ordinance history: Ordinances 6-720.1 and 6-720.2.

Updated July 16, 2002

Chapter 19.16

VEHICLES ON HOMER SPIT BEACH (5) 1$_9$.1 19.16.010 General
19:16.020 Definitions
19.16. 030 Use of vehicles Prohibited
19.16. 4 Violation Penalty

19.16.010 General. It is the intent of this chapter to preserve and protect certain beach areas of the Homer Spit from the uncontrolled and ever increasing use of such areas by persons driving wheeled, motorized vehicles thereon. (Prior code 12-600.1).

19.16.020 Definitions. For the purposes of this chapter, "beach area" shall include the zone of sand, gravel and other unconsolidated materials that extends landward from the low water line to the place where there is a marked change in material or physiographic form.

a. "Berm" means a natural, linear mound or series of mounds of sand or gravel, or both, generally paralleling the water at or landward of the line of ordinary high tide.
b. b: "Storm berm" means a berm formed by the upper reach of storm wave surges or the highest tides. Storm berms generally include an accumulation of seaweed, driftwood, and other water-borne materials. A beach may have more than one storm berm.(Ord. 02-14(A) 2, 2002; Prior code 12-600.2).

19.16.030 e of vehicle Prohibited

a. No person shall operate a recreational vehicle, motorcycle, motor bike, or motor scooter within or upon that beach area as defined in the immediately preceding section located from a line bisecting the Homer Spit at the centerline of the mouth of the Fishin' Hole to the tip of the Spit.
b. For the purpose of this section, recreational vehicle is defined as a self-propelled vehicle having wheels, tracks or rollers that may be operated on land areas located off the public roads. Use of vehicles engaged in commercial activity, as opposed to recreational, is exempted from this prohibition.
d. No person shall operate any motorized vehicle upon a storm berm on any beach within the city limits of Homer except in designated areas.
e. No person shall operate any motorized vehicle upon the following beach or tidal areas: 1. Mud Bay, 2. Louie's Lagoon, 3. Mariner Park Lagoon 4. Beluga Slough
f. The Official "Beach Policy Map of the City of Homer" Is enacted by reference and declared to be part of this chapter in its exact form as it exists on the date that the ordinance is codified in this chapter and is adopted by the City Council. (Ord. 02-14(A) 2, 2002; Ord. 01-39,2001; Ord. 78-161,1978: prior code 12-600:4).

19.1 6.040 Violation Penalty

a. The violation of any provision contained in this chapter shall be punished as follows. a. first offense $ 25 fine

b. second offense $250 fine
c. third and subsequent offenses $499 fine. Ord. 02-14(A) l, 2002; Prior code 12-600.6). S. For provisions regarding the impounding of vehicles on Homer Spit Beach, sec Chapter 7:16. Prior ordinance history: Ordinance 7710.

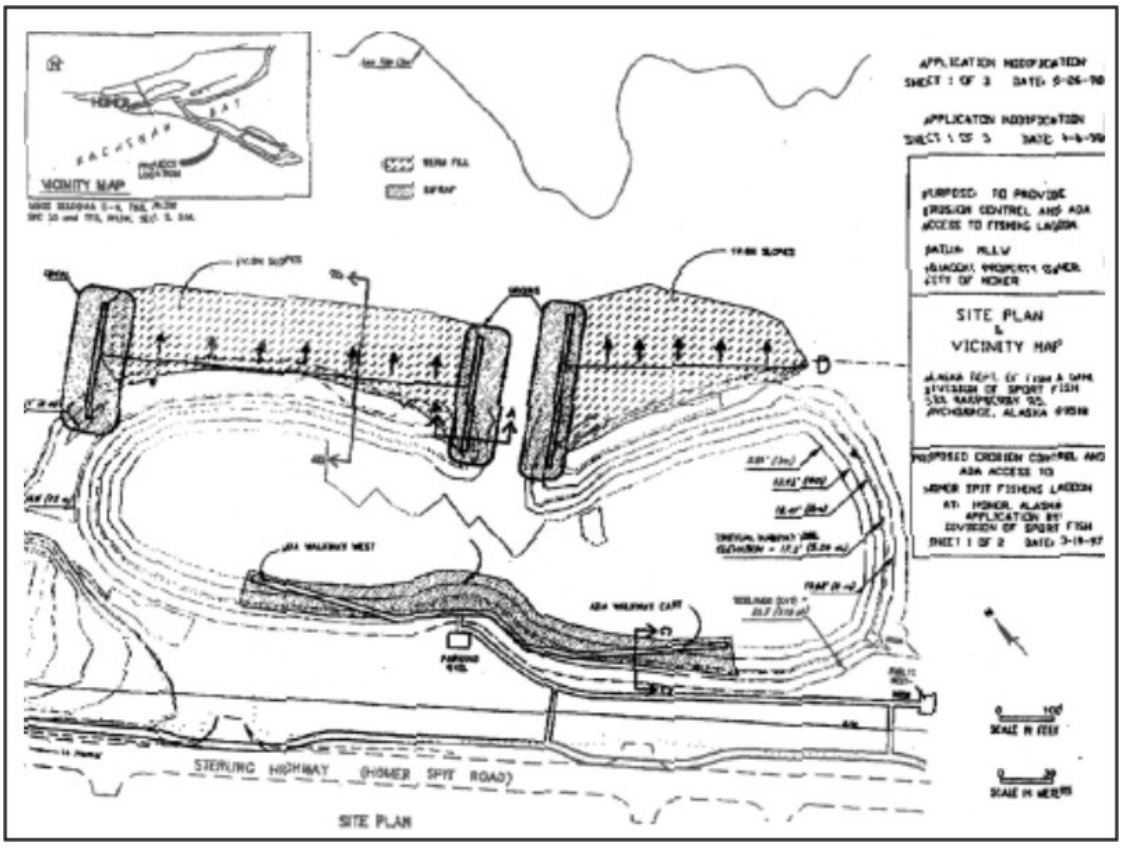


Figure 1. City of Homer fishing lagoon on Homer Spit referenced in the above letter from the City of Homer.

Appendix B

Real Estate Plan

(Rev 7/26/05)

REAL ESTATE PLAN
for
Proposed Dredged Material Management Site
Homer Small Boat Harbor Project, Homer, Alaska

1. Purpose

The purpose of this report is to develop a real estate plan and cost estimate for a real estate interest in a long-term disposal site. The site will be used to dispose of dredged materials accumulated from annual maintenance dredging of the Homer Small Boat Harbor. The City of Homer, as non-Federal sponsor, has agreed to provide the upland site. Of the two sites and six alternatives considered, Alternative No. 3, the North Site, with a pipeline layout along the northeast side of the Homer Spit has been selected as the recommended plan. This Real Estate Plan is tentative in nature, for planning purposes only, and the final real property requirements are subject to change after approval of this report.

2. Project Description

Homer Harbor was initially authorized by the Rivers and Harbors Act, 3 July 1958. In 1964, the River and Harbors Act of 19 August 1964 provided for repair of the harbor after the March 1964 earthquake and included provisions for further expansion of the project. In 1985 the expansion project was completed. Homer Harbor is located in Southcentral Alaska near the tip of the Homer Spit, which extends approximately 5 miles into Kachemak Bay. The project currently contains an entrance channel of 1550 LF, a maneuvering channel of 2790 LF, two breakwaters, and a boat basin 50 acres in size. The basin is maintained by the City of Homer.

The entrance channel requires annual maintenance. Since the expansion of the harbor in 1985, there has been significant development along the Homer Spit and harbor area. Currently, the dewatering and disposal sites are furnished by the City temporarily on a biannual basis. It is proposed that the North Site, the current disposal site, be used for both dewatering and disposal on a long-term basis. Dredging is accomplished by cutterhead and pipeline suction dredge. It is proposed that a pipeline route along the northeast shore of the spit be used for transporting the dredged material to the disposal site. The pipeline will be either permanently buried or temporarily placed on the ground (except for section buried under roadways) and removed after each dredging operation. The recommended plan, Alternative 3, will construct a permanent dewatering and storage facility at the North Site. A permanent berm with impermeable geotextile fabric will be constructed. As in current practice, the City will continue removing material from the site for its beneficial use. Therefore, it is not anticipated that the disposal site will reach capacity at the end of the 20-year plan and will continue to be available for disposal of dredged material for the project.

3. Real Estate Requirements for the Project

The upland disposal site encompasses approximately 2.2 acres just west of the harbor. The site is on City-owned land known in the records as, "The Fishing Hole No. 2 subdivision". This site has been used for the past 10 years and is expected to be capable of storing dredged materials beyond the 20-year plan. A perpetual easement interest is recommended for a permanent disposal site. A permanent utility easement is recommended for the pipeline route (slurry and effluent lines).
The pipeline right-of-way will generally involve fastlands and filled tidelands owned by the city. The effluent pipeline will cross under the state-owned right-of-way for Homer Spit Road and the city will need to acquire the necessary rights from the State of Alaska for the crossing. The pipeline right-of-way and disposal site are accessible by city road (see map at Exhibit A).

Improvements involved are the roads where the pipeline will cross (buried) and any previously constructed containment structures supporting the present use of the disposal site. A local road, Log Truck Bypass Road, may also be impacted by the disposal site. The city is considering moving the road, which is on city land but not a platted right-of-way.

A majority of the right-of-way required for the pipeline is on tidelands owned by the city that were filled during construction of the harbor expansion project in 1985. Most of the upland areas required for the pipeline and disposal site, as well as the tidelands, were previously provided as part of the city's local cooperation in 1983 for construction and operation of the expansion project (see map at Exhibit B). Although the city previously provided the tidelands for the project, the Government has determined that navigation servitude is available for this project, and therefore, no further interest is needed from the city for use of the tidelands.

Current policy precludes a non-Federal sponsor from receiving credit for the value of lands, easements, and rights-of-way (LER) previously furnished as an item of cooperation for another Federal project. Therefore, the only LER to be provided for this project that may be eligible for credit will be an area of right-of-way for the effluent line from the highway crossing south, estimated at approximately 250 LF.

Summary of Required Real Estate Interests:

Feature	Acres	Owner	Interest
Disposal site	2.2	City of Homer	Perpetual easement
Pipeline ROW			
--upland	0.2	City of Homer and State of Alaska	Perpetual utility and/or pipeline easement
--tidelands	1.1	City of Homer	Navigation Servitude

4. Within an Existing Federal Project

The planned disposal facility is within the Homer Small Boat Harbor Project.

5. Federally/Government Owned Land

There is no Federally-owned interest in the property planned for the disposal facility.

6. LER below MHW/OHW – availability of Navigation Servitude

A majority of the pipeline right-of-way lies within an area of filled tidelands. These tidelands are considered to be below mean or ordinary high water. It has been determined that navigation servitude is available for the project and will be exercised for the right-of-way within the filled tidelands area.

7. Map

Maps of the project area are at Exhibits A and B.

8. Real Estate and Administrative Cost Estimate

The estimated real estate costs are based primarily on data used in a gross appraisal performed for the project in April 2003 by the Corps of Engineers. If an appraisal were prepared, the values provided herein could change. Administrative costs are typically for mapping, title work, survey, appraisal, and certification.

Item	Federal ($)	Local ($)	Total ($)
Administration	7,500	5,000	12,500
Real Estate Value	-0-	7,300	7,300

9. Relocation Assistance (PL 91-646)

No persons, farms, or businesses are anticipated to be displaced as a result of the project.

10. Mineral Activity

There is no known activity for the extraction or minerals in, on, or under the lands planned for this project.

11. Real Estate Acquisition Schedule

It is estimated that a period of 3-6 months would be needed to complete acquisition and certification of the property interests required for the project.

12. Relocations (Facilities and Utilities)

There are no known structures or facilities that will require demolition; however, temporary alteration of the Homer Spit and Freight Dock Roads may be required where the pipeline is to be buried under the road.

13. Environmental/HTW

Dredged material from the Homer Harbor was chemically characterized in 2002. Concentrations of the metals arsenic and chromium were found to exceed State of Alaska soil cleanup standards for upland disposal. The concentrations of arsenic and chromium were found to be similar to concentrations found in the surface soils of the proposed upland disposal area.

14. Known or Anticipated Support or Opposition of Landowners in project area

There is no known opposition from landowners in the project area.

EXHIBIT A

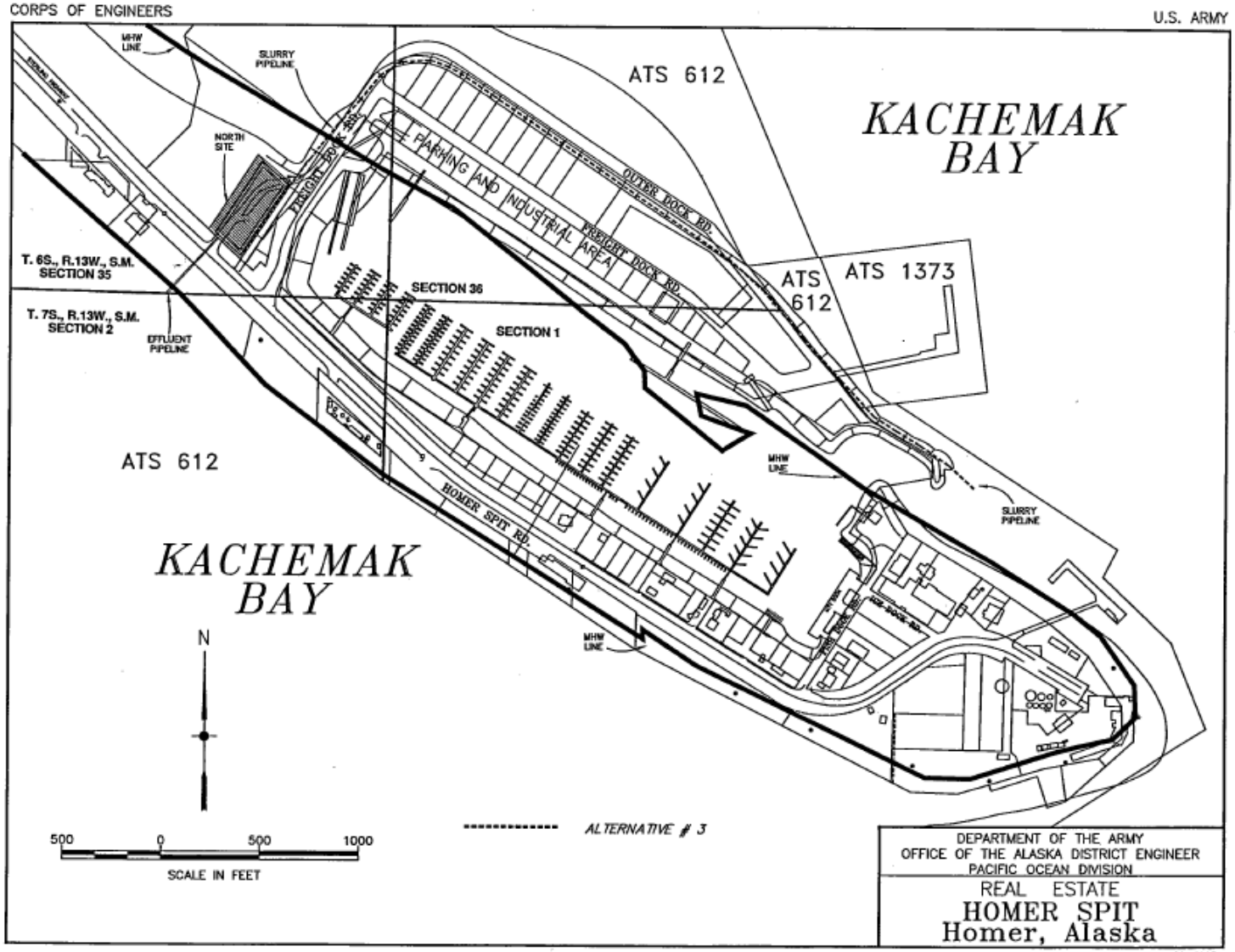
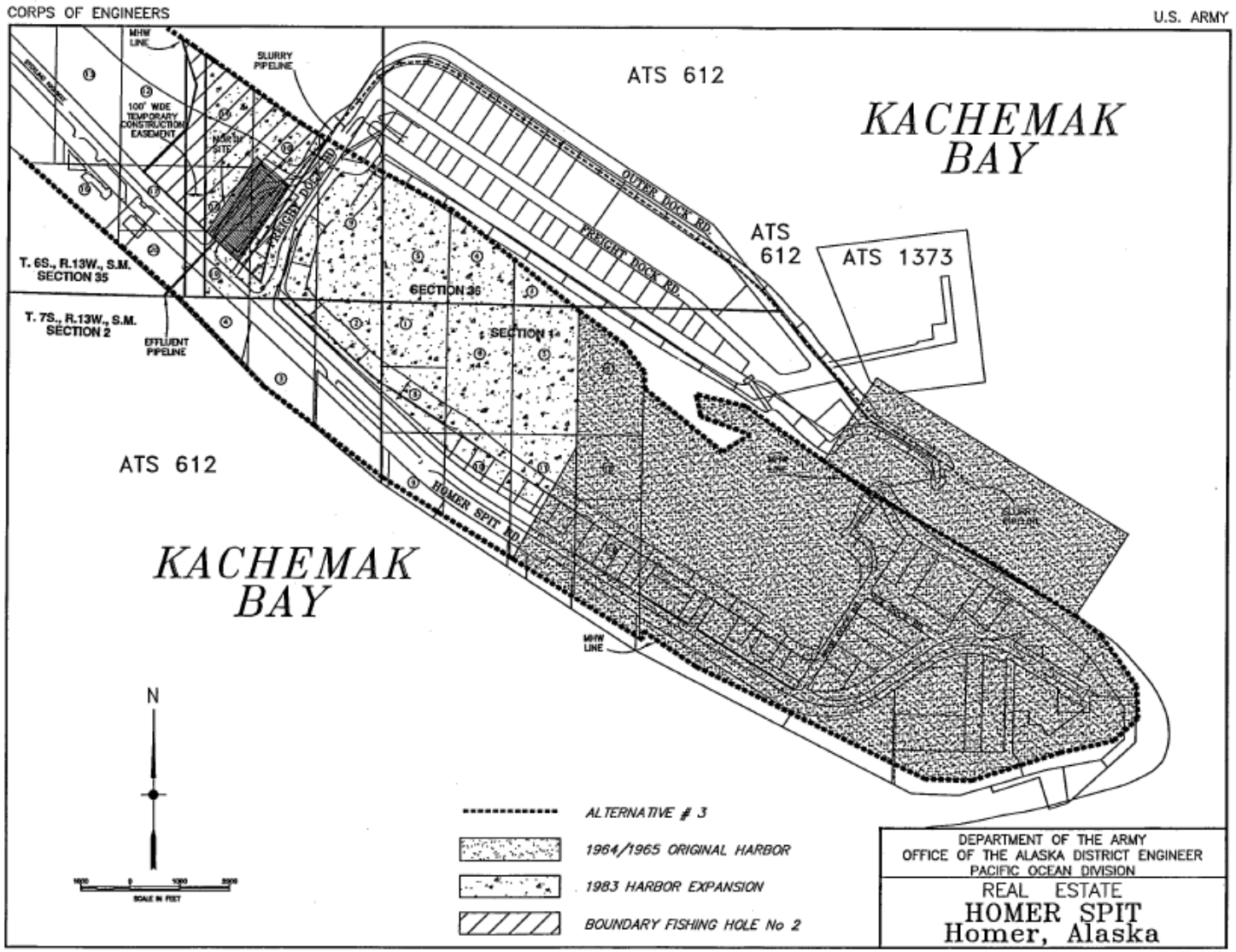

CORPS OF ENGINEERS
U.S. ARMY
MHW LINE
SLURRY PIPELINE
ATS 612
KACHEMAK BAY
NORTH SITE
FREIGHT DOCK RD.
PARKING AND INDUSTRIAL AREA
OUTER DOCK RD.
FREIGHT DOCK RD.
ATS 612
ATS 1373
T. 6S., R.13W., S.M.
SECTION 35
SECTION 36
T. 7S., R.13W., S.M.
SECTION 2
SECTION 1
EFFLUENT PIPELINE
ATS 612
MHW LINE
SLURRY PIPELINE
HOMER SPIT RD.
KACHEMAK BAY
MHW LINE
N
500 0 500 1000
SCALE IN FEET
ALTERNATIVE # 3
DEPARTMENT OF THE ARMY
OFFICE OF THE ALASKA DISTRICT ENGINEER
PACIFIC OCEAN DIVISION
REAL ESTATE
HOMER SPIT
Homer, Alaska
July 22, 2005

EXHIBIT B


CORPS OF ENGINEERS
U.S. ARMY
MHW LINE
SLURRY PIPELINE
100' WIDE TEMPORARY CONSTRUCTION EASEMENT
NORTH SPIT
ATS 612
KACHEMAK BAY
OUTER DOCK RD.
FREIGHT DOCK RD.
ATS 612
ATS 1373
T. 6S., R.13W., S.M.
SECTION 35
SECTION 36
SECTION 1
T. 7S., R.13W., S.M.
SECTION 2
EFFLUENT PIPELINE
ATS 612
HOMER SPIT RD.
KACHEMAK BAY
MHW LINE
N
SCALE IN FEET
ALTERNATIVE # 3
1964/1965 ORIGINAL HARBOR
1983 HARBOR EXPANSION
BOUNDARY FISHING HOLE No 2
DEPARTMENT OF THE ARMY
OFFICE OF THE ALASKA DISTRICT ENGINEER
PACIFIC OCEAN DIVISION
REAL ESTATE
HOMER SPIT
Homer, Alaska
July 22, 2005

Assessment of Non-Federal Sponsor's Real Estate Acquisition Capability

Project Name: Homer Dredged Material Management Site Sponsor: City of Homer

I: Legal Authority:

a. Does the sponsor have legal authority to acquire and hold title to real property for project purposes? Yes

b. Does the sponsor have the power of eminent domain for this project? Yes

c. Does the sponsor have "quick-take" authority for this project? No

d. Are any of the lands/interests in land required for the project located outside the sponsor's political boundary? No

e. Are any of the lands/interests in land required for the project owned by an entity whose property the sponsor cannot condemn? Yes (State road right of way)

II: Human Resource Requirements:

a. Will the sponsor's in-house staff require training to become familiar with the real estate requirements of Federal projects including P.L. 91-646, as amended? No

b. If the answer to Ila. is yes, has a reasonable plan been developed to provide such training?

c. Does the sponsor's in-house staff have sufficient real estate acquisition experience to meet its responsibilities for the project? Yes

d. Is the sponsor's projected in-house staffing level sufficient considering its other workload, if any, and the project schedule? Yes

e. Can the sponsor obtain contractor support, if required, in a timely fashion? Yes

f. Will the sponsor likely request USACE assistance in acquiring real estate? No

III. Other Proiect Variables:

a. Will the sponsor's staff be located within reasonable proximity to the project site? Yes

b. Has the sponsor approved the project/real estate schedule/milestones? Yes

IV: Overall Assessment:

a. Has the sponsor performed satisfactorily on other USACE projects? Yes

b. With regard to this project, the sponsor is anticipated to be: highly capable / **fully capable** / moderately capable / marginally capable / insufficiently capable.

Assessment of Non-Federal Sponsor's Real Estate Acquisition Capability-Cont'd

Project Name: Homer Dredged Material Management Site

Sponsor: City of Homer

V. Coordination:

a. Has this assessment been. coordinated with the sponsor? Yes

b. Does the sponsor concur with this assessment? Yes

Source:
Rachel Livingston, City Mar Office
Wait Wrede, City Manager
Telephone: (907) 235-8121 .
FAX: (907) 235-3140

Prepared by:

Name: Linda S. Arrington
Title: Lead Realty Specialist,
Acquisition Section, Real Estate Division

Date: August 18, 2005

Reviewed/approved by:

Veronica A. Hiriams
Acting Chief, Real Estate Division