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ENGINEERS, INC.

June 25, 2010 PND Project # 062065.01

Ms. Carrie Bohan
Project Review Coordinator
Office of Project Management and Permitting

Subject: CBJ Old Douglas Harbor Renovation – Responses to Requests for Additional Information
DCOM I.D. No. AK 1001-01J
POA-2000-495-M

Dear Ms. Bohan:

The following are responses to the requests for additional information contained in your letter dated June 11, 2010:

1. Elaborate on the practicable alternative analysis report to include a consideration of a combination of the alternative disposal options listed in the report.

The CBJ Docks and Harbors Department currently has $4.0 million available for the Douglas Harbor Replacement Project with an additional $2.0 million to be issued via State harbor grant upon receipt of a DA permit. Of the $6 million, $1.56 million is available for harbor dredging and material disposal with the remainder to be spent on moorage floats, piles, electrical system and other associated harbor elements. Unless the State or Federal government provides additional funding for the project, the only other ways to obtain more money are to raise fees on harbor users, transfer funds from another CBJ program, or raise taxes on the Borough residents. None of these options are feasible. See the attached letter written to Colonel Reinhard W. Koenig, District Engineer Alaska District, US Army Corps of Engineers submitted on April 13, 2010 for additional details about the available funding and the dredge material disposal options.

The volume of Douglas Harbor dredge material requiring disposal is approximately 32,000 CY. Since originally submitting the alternatives analysis report, some have suggested the need for a rock or sand cap to be placed over the top of the dredged harbor surface. For each foot of cap, an additional 6,000 CY of dredge material requiring disposal would result. Additional dredge material quantities resulting from capping are not included in the subsequent analysis.

The preferred location for dredge material disposal is at the previously utilized location in Gastineau Channel. The engineer's estimate for dredging and unconfined disposal of 32,000 CY of material at the site is $960,000. During the past three years, CBJ Docks and Harbors Department has provided funding for Tier II, Tier III and some Tier IV chemical and biological testing of the proposed dredge material. The testing was conducted per the protocol established in the Inland Testing Manual. The

results of tests indicate that water quality will not be violated anywhere outside of the proposed Gastineau Channel disposal site, or within the disposal site following initial placement. The results of the tests also indicate that marine organisms exposed directly to the sediment will not be adversely affected. As such, we maintain that the Gastineau Channel disposal site is appropriate for placement of all of the dredged material.

The second disposal location identified in the practicable alternative analysis report was disposal behind a timber-faced geotextile wall in the southeast portion of the harbor. The dredge material storage capacity at this location is approximately 3,000 CY. The cost of construction of a geotextile-reinforced timber wall, placement of dredge material, placement of imported rock fill material, storm water drainages and other associated work is estimated at $1.25 million assuming confined disposal in a geomembrane liner is required. Because this sum equals 80% of the available dredging funding and because only 10% of the total dredged material can be stored at this location, this option is not practicable as either a stand-alone project or in conjunction with the development of other disposal sites.

The third disposal location option identified in the report was material disposal beneath an expanded harbor parking lot/fill pad. Activities included in the construction of the expanded pad would include construction of a rock berm along the seaward perimeter of the pad and placement of imported rock fill material above and below the dredge material. The available storage capacity for dredged material at this site is 4,000 CY. The estimated cost of construction of the expanded lot is $850,000 assuming confined disposal in a geomembrane liner is required. Because this cost equates to 55% of the available budget yet provides storage for only 15% of the material, this option is not practicable either alone or in conjunction with the development of other disposal sites.

The fourth disposal location option in the practicable alternatives analysis report was disposal at the Treadwell Mine cave-in site. Due to the preponderance of environmental, historical, permitting and public relation issues associated with attempting to fill this site, this location is not a viable disposal option.

The fifth option for dredge material disposal was at a DNR-controlled tideland site near the Thane Ore House. DNR would not consider transfer of this site for dredge material placement so this is not a viable disposal option.

The sixth disposal option was intertidal disposal at the AML storage facility. The estimated cost for disposal of all of the dredged material at this site was $2.775 million, which exceeds the funding available to the CBJ. Since completion of the original practicable analysis report, ADEC has indicated that confined containment within a geomembrane liner would likely be required at any upland or intertidal disposal site. Adding a geomembrane containment liner with associated bedding and leachate collection would add approximately $550,000 to the project cost for a revised total of $3.325 million. Assuming that the 16,000 CY Upper Composite was allowed to be placed in Gastineau Channel and the 16,000 CY Lower Composite was mandated to be disposed at an alternate site, the project cost for development of the AML site are estimated at $2.1 million. With half of the volume in the Channel and half at the AML site, the total dredging and disposal costs would equal approximately $2.6 million or about $1.04 million more than the $1.56 million available for dredging and disposal. In addition, we have not been able to resolve CBJ's ability to provide future indemnification to AML for the environmental liability of dredge spoils. As such, this disposal option is not practicable.

The seventh option was upland disposal at the Fish Creek Quarry. The estimated cost for disposal of only the 16,000 CY Lower Composite at this location is $2.4 million. Assuming the Upper Composite was placed in the Channel, the total dredging and disposal costs would equal approximately $2.9 million, an amount that exceeds our dredging budget by $1.34 million. Besides cost, there are additional considerations which make this disposal option impracticable. These are given under the response to the second request for additional information.

The eighth option was disposal in upland depressions in the Treadwell Mine Complex. The estimated cost for disposal of the 16,000 yards comprising the Lower Composite is $2.5 million. With the Upper Composite disposed in the Channel, the total cost is estimated at $3.0 million, an amount that exceeds the available funding by approximately $1.44 million. Besides being cost prohibitive, there are a number of historical preservation and public relation issues that render this disposal option impracticable.

The ninth option was disposal at the Juneau Waste Management Landfill. Since completion of the original report, Waste Management has determined that they will not accept the dredged material at the Juneau landfill so this is no longer an option.

The tenth option was disposal at an approved facility in Washington or Oregon. The quoted cost for disposal of all 32,000 CY was $7.5 million or $250/CY. The unit price would only increase if less volume was required to be transported to Washington or Oregon so any combination disposal with this option is not practicable due to costs.

The eleventh option, COE to find their own disposal site for dredging of their harbor, and twelfth option, do nothing, are not germane to this analysis of multiple disposal sites.

To summarize, there is no combination of disposal sites that is feasible. If overdredging of the harbor is mandated in order to place a cap on the dredged surface, the difficulty of locating and funding the development of suitable disposal sites is made all the more impossible and the result will be closure of Old Douglas Harbor.

2. Provide a list of tidelands and uplands owned by the applicant. For each property provide a discussion as to why it is not being considered for use as a disposal site for the harbor dredge spoils.

The applicant is the Docks and Harbors Department. The CBJ Assembly has placed certain uplands and tidelands that CBJ owns under the jurisdiction of the Board pursuant to a resolution. It is attached for your reference. Most of the lands identified in the resolution are already in use for harbor facilities. A listing follows:

1. Douglas Harbor and Uplands - Two of our alternatives call for the creation of confined disposals by extending the retaining wall along Savikko Road and building additional parking lot at the launch ramp area. We determined that these alternatives were impracticable because they do not provide adequate capacity to handle the lower composite dredge spoils. They are also beyond our financial means.
2. Little Rock Dump- We looked at an alternative to dispose of dredge spoils at an area know as the "Little Rock Dump" on the mainland side across from Douglas Harbor. A few years ago we lease out this area to a private developer who is in the process of building a luxury yacht marina. Their plans call for the creation of buildings in the area that was available as

potential disposal site. Because of the unknown nature of the lessee's plans, we determined that this alternative was impracticable.

3. Downtown Cruise Ship Docks – We could not identify any areas near the downtown cruise ship docks where it would be feasible to dispose of the materials. Due to steep slopes and deep water, all of the new uplands being created in the downtown area adjacent to the docks is created with pile-supported decks not fills. Also, a majority of the vessels that call at the downtown docks are deep draught vessels, the deepest approaching 40' draught. Our primary concern is to preserve the deep draft character of the waterfront and not undertake any fills that would cause slope instability in this area.
4. Harris Harbor - We could not identify an area in Harris Harbor that would serve as a disposal area. The entire basin is used by for the harbor and its entrance protection.
5. Aurora Harbor - We examined two areas in Aurora Harbor. One is at the north end of the moorage basin next to the Yacht Club Parking Lot. This area was being held in reserve by the Board as the site of a future launch ramp. We also determined that it did not have adequate capacity to handle the dredge spoils. Based on these two factors, we determined that this alternative was impracticable. We also examined a confined disposal on the water side of the Yacht Club. This area has sufficient capacity but it is beyond our current financial means.
6. Auke Bay - We could not identify an area at Statter Harbor that could be used as a disposal site. We are in the process of looking at alternatives for a new launch ramp. This includes the creation of uplands for trailer parking. However, most of the fill area is owned and managed by DMLW. It is possible that the fill could accommodate the Lower Composite materials. However, we determined this alternative impracticable because it is not known if we will obtain permits for project.
7. Amalga Harbor and Echo Cove - We did not indentify an area at Amalga Harbor or Echo Cove that could be used as a confined disposal site.

The Docks and Harbors Board also manages tide and submerged lands that were conveyed to it by DMLW. However, these lands are under lease and being used by lessees. Therefore, we determined their use for a disposal site was impracticable.

We also looked at three sites that are owned by CBJ and under the jurisdiction of the CBJ Assembly but not the Docks and Harbors Board. Two sites were adjacent to Douglas Harbor. One is a depression at the historical site of the Treadwell mine complex. Our proposal was to fill in the depression with materials from the Lower Composite. However, we decided against this alternative because the area is a public park and historical area used by many residents and it would require the construction of a haul road that would significantly alter the character of Sandy Beach and the park. Since the cost was in the same range as the Yacht Club site, the Yacht Club would be favored since it would not affect public use like the Treadwell site. We also looked at filling in the Treadwell Mine cave-in. However, this seems to be the outlet of the Glory Hole and would present a host of new environmental issues to be resolved. Also, it is an artifact of historical significance. The destruction of it would likely be very controversial. We also looked at disposal in the Glory Hole, but decided against it due to a host of environmental concerns, even though it was used as landfill by the City of Douglas for many years.

We examined the use of the Fish Creek Quarry on Eaglecrest Road. At some point, the Assembly plans to reclaim this area for public use, a community garden was the most recently discussed use. We judged disposal of the material to be inconsistent with the community garden concept. In addition, use of this site requires trucking and would make the disposal beyond our economic means. In recent discussions with a neighbor about possible use of the site, we came away with the

distinct impression that we would need to do a lot of work to convince the neighbors that migration of the spoils would not occur from the disposal area.

These were the only sites that we could identify under the ownership of CBJ that would lend themselves to confined disposal.

Based on our evaluation, we keep coming back to the Gastineau Channel disposal being the best alternative, all things considered. We believe the decisions by state and federal regulators to use this site for disposal of dredge materials from Douglas Harbor on two previous occasions was a wise and prudent decision.

3. How will the dredge spoils disperse throughout the water column and Gastineau Channel once in the disposal location

In standard fluid flow, the velocity at a boundary layer is zero. When there is little seafloor elevation variation or large seafloor obstructions that could redirect or funnel current vertically, the seafloor can reasonably be assumed to be a standard boundary layer where the fluid velocity will be zero, and the resulting sediment transport will be zero. This is the case at the Gastineau Channel disposal site. The seafloor elevation at the disposal site is very uniform at a depth of 19 to 20 fathoms. As such, current will be negligible directly on the seafloor. Furthermore, the depth of the seafloor is too great to be affected by vertical currents induced by cruise ship or other vessel propeller wash or movement. ADF&G conducted a dive survey of the disposal site which is available for viewing on the CBJ Docks & Harbors Department website. The video shows a predominance of fine-grained sediment on the seafloor which indicates that very little disturbance or particle transport occurs at the site. This was also confirmed in discussions with Robert Stone of NOAA's Auke Bay Laboratory.

Sincerely,
PND Engineers, Inc. | Juneau Office

A Schicht

Andrew Schicht, P.E.
Senior Engineer

Enclosures