

STATE OF ALASKA

KNIK ARM BRIDGE AND TOLL AUTHORITY

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RE: POA-2005-97, Response to Section 404 Permit Application Public Comments from the Knik Arm Bridge and Toll Authority

Dear Mary Lee:

I am writing in response to the seven comment letters that the Alaska District received during its recent Public Notice (POA-2005-97) of the Section 404 Permit application submitted by the Knik Arm Bridge and Toll Authority (KABATA). The comment resolutions provided in detail below and in the attached appendix should provide sufficient information to allow the USACE to issue the requested Section 404 permit.

Letters were received from the Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), Municipality of Anchorage (MOA), Alaska Department of Fish and Game (ADF&G), Government Hill Community Council (GHCC), and from the Trustees of Alaska representing the Cook Inletkeeper and the North Gulf Oceanic Society (TOA). Seven primary comments were common throughout the letters which are addressed below. The remaining comments are itemized and addressed in Appendix A.

1) KABATA identification of the LEDPA (EPA, USFWS, TOA)

A primary comment among the letters is that the Knik Arm Crossing Project (KAC) does not meet the criteria for Least Environmentally Damaging Practicable Alternative (LEDPA), as required by Section 404(b)(1) Guidelines (see 40 C.F.R. § 230.10 (a)). The EPA concludes in its letter that there are practicable alternatives with regard to 1) bridge length, 2) bridge spans, 3) and embankment width. The other letters primarily focus on practicable alternatives in regard to bridge length.

Alternatives and bridge length (EPA, USFWS, GHCC)

The EPA, USFWS, and the GHCC argue that the alternatives evaluated in the project's Environmental Impact Statement (EIS) were too limited and that the "financially feasibility" criteria used in the EIS was subjective. The commenter's further state that that the EIS did not provide sufficient information on practicable bridge alternatives longer than 8,200 feet; as required under 404(b)(1) Guidelines .

The financial feasibility of Phase 1 of the KAC evaluated during the EIS Phase was developed by three independent financial assessments that determined the project could not be financed if it exceeded \$600 million in construction costs. This analysis was performed in 2005 to assist in identifying reasonable alternatives that were under the cost threshold. After the alternatives were identified, additional refinement to cost and impact evaluations were performed, including cost estimates for controlled access right-of-way (ROW), preliminary engineering, construction administration, mitigation, and contingencies. Due to the evolving process of alternatives development, early construction estimates prepared as part of the EIS scoping process are not readily comparable to the current project cost evaluations. As with any project, the financial feasibility of a project evolves over time.

KABATA agrees that the *EIS*, in and of itself, does not satisfy *Section 404(b)(1) Guidelines* for determining a LEDPA. For that reason, an additional analysis of project costs was performed in KABATA's *Draft Section 404(b)(1) Evaluation* using renowned bridge designers and marine construction experts to further develop comprehensive costs of 24 different bridge alternatives. These alternatives were evaluated on the basis of existing technology, logistics and cost to determine which were practicable, and likely eligible for subsequent consideration as the LEDPA. It should be noted that no alternative analyzed in the 404(b)(1) evaluation was considered impracticable based solely on cost.

Further, even though the EIS included the evaluation of the 6,000-foot-long connection between the Anchorage Approach and the start of the bridge, KABATA's *Draft Section 404(b)(1) Evaluation* included the supplementary analyses of three additional footprint alternatives for the Below-the-Bluff link in consideration for determining the LEDPA. The *Draft Section 404(b)(1) Evaluation* provides a detailed analysis of the 404(b)(1) evaluation criteria and identifies KABATA's conclusion of a LEDPA for the 9,200-foot bridge alternative; subject to Corps of Engineers concurrence and approval.

Bridge spans (EPA)

The EPA states that longer bridge spans may be practicable and that longer spans are in use nationwide. EPA cites the P&L Railway Bridge over the Tennessee River as having a primary span of 500 feet. This particular design would not work for the KAC project. Although the primary span of the P&L railway is a 500 foot- long truss (which was required for the navigational opening), the same bridge cited by EPA also includes the use of 17 approach spans

which are 155 feet long or less. The truss for the P&L railway bridge is 63 feet high, this coupled with the need for a 50 foot navigational clearance over Knik Arm would make the overall height of the Knik Arm Bridge 113 feet. The design of the P&L Railway Bridge over the Tennessee River is not comparable because the quantity and height of elevated steel associated with a truss supported bridge span would interfere with the Global High Frequency System and the Circularly Disposed Antenna Array at JBER. Also, the P&L Bridge is designed for a relatively mild climate with unidirectional water flows.

Alternate bridge types over Knik Arm were discussed and evaluated during the EIS process. There are many site specific conditions and constraints that limit the bridge types that can be constructed. These issues are described in Chapter 2 and 3 of the *FEIS*, and the white paper *Constraints Affecting the Location of the Knik Arm Crossing Project*. In addition, to avoid interference with JBER's military mission and aviation requirements the height of the bridge is limited to an elevation that is below the bluff and must be compatible with military operations. The Coast Guard also has minimum height requirements for vessel passage. Furthermore, there are extreme tides, fast currents, ice, severe seismic and unique geologic conditions that govern the bridge type and foundation capacity. Construction techniques employed under these conditions must also minimize impacts to the federally listed endangered Cook Inlet beluga whale. To address this issue, KABATA contracted a diverse team of structural engineers, experienced bridge builders, and marine construction experts from around the country to determine a bridge design that will accommodate all of these variables. The bridge design presented in the *Section 404 Permit Application* is the outcome of this analysis.

Embankment widths (EPA)

The EPA argues that the embankment widths, which are designed for a four-lane roadway to meet traffic demands of Phase 2 are speculative. They comment that there is no reason to incur loss of intertidal habitat so many years in advance of any need.

The primary impacts to beluga whale are from temporary construction impacts and the physical presence of active equipment in the project area. As a mitigation measure to minimize impacts to the beluga whale, which is outlined in the Section 7 Endangered Species Consultation process, KABATA has committed to minimizing these construction impacts in Knik Arm by disturbing this intertidal habitat only once. No additional construction or placement of fill in Knik Arm will be required for Phase 2.

2) Compensatory mitigation for fillets (EPA, USFWS)

Another request common in the letters was that KABATA should account for the acreage of the fillets in Knik Arm using the Anchorage Debit Credit Method (ADCM). It is important to note that there has been no issue with selection of the ADCM as the method for assessing wetland and water impacts. In the ADCM, all shallow subtidal habitats (from MLLW to -30 feet MLLW) and all unvegetated intertidal habitats (from 34.4 feet MLLW to MLLW) are given a Relative

Ecological Value (REV) of 2. Therefore, increased sedimentation in these areas would result in no net change to REV value. Small areas near the ends of the embankments would be transformed from shallow subtidal to intertidal unvegetated; each fillet area would increase in elevation only slightly and remain as intertidal unvegetated habitat (REV 2). It would not be possible for this area to accumulate enough sediment to reach elevations greater than 34.4 feet MLLW and therefore no longer be classified as intertidal unvegetated.

3) Su-Knik Rapid Assessment Methodology (EPA, USFWS)

Both the EPA and the USFWS claim that the Su-Knik Methodology has been misused because it multiplies acreage by functional capacity score to get debits. They claim it results in a “less than 1-to-1 ratio”. When the Su Knik Mitigation Bank was established, they determined credits available by multiplying the acreage by the functional score. A credit at the Su Knik Mitigation Bank theoretically represents an acre of perfect functioning wetland (e.g. a functional score of 1). In order to determine debits for the KAC project, the impacted acreage was also multiplied by a functional score to calculate a debit, which is in same units as the bank credits (i.e. acres of perfectly functioning wetlands). Once credits and debits have the same units, a compensatory mitigation ratio of 2:1 is proposed to mitigate for unavoidable impacts. In order to remain consistent with the Su Knik Mitigation Bank the same methods were used to determine debits as was used to determine credits. For 2.56 acres of impacts to wetlands on the Mat-Su Borough side, KABATA is proposing to buy 4.82 credits from the Su Knik Mitigation Bank. An example of the calculations is included in the table below (Table 1).

Table 1. KAC Wetland Impacts – Mat-Su Northern Route

NWI Wetland Type Impacted	Wetland ID	Permanent Wetland Impact (Acres)	Functional Assessment Summary Score	Debits	Proposed Ratio	Credits Needed
Emergent wetland - PEM1C	a	-	0.67	-		
Emergent wetland - PEM1C	b	0.07	0.79	0.06	2:1	0.12
Emergent wetland - PEM1C	c	0.17	0.96	0.16	2:1	0.32
Emergent wetland - PEM1C	d	0.28	0.91	0.25	2:1	0.50
Forested wetland - PFO4/1B	e	2.04	0.95	1.94	2:1	3.88
Total	-	2.56	-	2.41	2:1	4.82

4) Impacts to the Port of Anchorage (EPA, GHCC)

EPA also argues that the Corps may not be able to issue a permit because of adverse effects to the federal project at the Port of Anchorage, specifically in reference to sedimentation. They cite the ERDC report which indicates that a minimization of effects is all that can be expected of a bridge in the proposed location and that a fully pile-supported bridge would produce minimum changes to the environment of Knik Arm.

The EPA states that because the effects of the 9,200-foot bridge would be greater than the effects of no bridge that it shouldn't be permitted because the Corps has stated that it could not "issue a permit which would adversely affect the federal project at the Port of Anchorage." There is no conclusive evidence that shows that the Port of Anchorage would be adversely affected by the proposed 9,200-foot long bridge. The conclusion of the ERDC report states that "scenarios with a fully-pile supported bridge or a 1,000-ft reduction on the eastern causeway length produced the minimum changes in the existing hydrodynamic structures and sedimentation patterns at the port". It also states that those scenarios "should minimize the long term effects of bridge construction." A bridge needs to minimize impacts to the Knik Arm and the 9,200-foot long bridge that KABATA proposes does minimize these impacts to the Port of Anchorage.

It is important to note that the EPA cites only the ERDC Report in its discussion of potential sedimentation impacts on the Port of Anchorage. Although the ERDC Report represents an important part of the analysis, it is still only a portion of the overall analysis that has been performed. The *2009 Hydrology and Hydraulic Environment of Knik Arm Study*, led by Dr. Jack Colonell, was an exhaustive effort to measure actual conditions in Knik Arm and construct a model based on those measurements. An enormous amount of time and resources went in to the study and the results were reviewed and modified with input from experts at the Corps of Engineers and the Federal Highway Administration. The conclusions of the report found in the first two bullets of the executive summary on page 1 state:

- Hydrodynamic effects of KAC Alternative 1 (the 8,200-Foot Bridge Alternative), while possibly measurable, would be benign.
- Sedimentation effects of KAC Alternative 1 would appear mainly as "fillets" on both north and south sides of embankments, and would be insignificant elsewhere.

In addition to the pioneering research and modeling effort by Dr. Jack Colonell in 2009, KABATA more recently contracted with the Corps of Engineers to perform an independent, redundant analysis using their physical model of Knik Arm and to update their numerical model (the results of which are in the ERDC Report). These analyses included the 8,200-foot bridge from the EIS, the 9,200-foot bridge and five other bridge length and position variations. The results from this analysis confirm the earlier study's conclusions that other than the "fillets" expected to form near the bridge abutments, anticipated sedimentation elsewhere in Knik Arm as a result of bridge construction is expected to be insignificant.

5) Avoid solid fill below MHHW; eliminate potential adverse effects to Essential Fish Habitat (EFH) (NMFS, TOA)

The NMFS letter states in its EFH Conservation Recommendation, “Eliminate potential adverse impacts to salmon migratory corridors in Knik Arm by avoiding solid fill below the MHHW line, constructing the bridge abutments and approaches on piles similar to those proposed for the middle section of the crossing”. However, in the next section of the comment letter on effects to beluga whales NMFS states that the project is consistent with the Biological Opinion and that “any deviations from the project described in the Biological Opinion, would necessitate further NMFS review to assess the consequence of any changes and the possible need to re-initiate consultation under Section 7 of the Endangered Species Act.”

NMFS states that for EFH they want a fully pile-supported bridge. However, this would be inconsistent with the findings of the Section 7 ESA Consultation. As shown in KABATA’s *Draft Section 404(b)(1) Evaluation*, all alternatives that include a fully pile-supported bridge would exceed the number of allowable Beluga takes and thus not meet the Letter of Authorization (LOA) requirements or be in accordance with the KAC Section 7 Biological Opinion.

KABATA is committed to minimizing impacts on the beluga whale and EFH. EFH Conservation Measures indicate less fill in intertidal habitat is preferable, however the NMFS Biological Opinion clearly states that an increase in in-water noise levels from construction “is likely the most important aspect of this project with respect to the conservation of Cook Inlet beluga whales.” The 9,200-foot bridge considers both EFH and beluga whale factors and represents a solution that to the extent practicable, minimizes effects to both EFH and beluga whales.

6) KABATA has not complied with the Programmatic Agreement (PA) (MOA,GHCC)

The GHCC contends that the FHWA and KABATA have not complied with the Programmatic Agreement (PA). Many issues are listed and they are individually addressed in Appendix A with specific responses to each comment. The main comments are summarized below.

FHWA and KABATA are in compliance with the mitigation measures outlined in the PA. FHWA/KABATA completed archaeological surveys, hired a KABATA Liaison, worked with consulting parties (e.g., Matanuska-Susitna Borough [MSB], MOA, Knik Tribal Council, Native Village of Eklutna, and the State Historic Preservation Officer [SHPO]) to draft Memorandums of Understanding (MOU) and provided funding commitments, worked with local Tribes to identify a replacement fish camp, completed semi-annual reporting to Signatories, and conducted a recent annual meeting with Signatories (May 2012). GHCC was invited to and attended this annual meeting.

The major issues GHCC has with KABATA’s PA compliance are 1) unstaffed KABATA Liaison position, 2) no document reviews or semi-annual reports and 3) that they were not

consulted during negotiations of the MOU between FHWA and the MOA in developing the Government Hill Neighborhood Plan (GHNP).

The KABATA Liaison position was held by Edrie Vinson from November 2009 until September 2011. When Edrie Vinson retired from KABATA, Laurie Mulcahy was approved by FHWA and SHPO as a temporary substitute. Edrie Vinson was re-hired as of January 17, 2012 as an independent contractor to again fulfill the KABATA Liaison position.

Another comment is that the GHCC has not received any semi-annual status reports or documents for review. The requirements of the PA state that semi-annual status reports shall be provided to Signatories. The GHCC was offered Signatory status, but refused to sign the PA, so they are recognized as a consulting party. KABATA is required to notify consulting parties when documents (e.g. plans, specifications, reports, and other documents) are posted on the KABATA website for review. This review can be further outlined in the in the Community Participation Protocol (Stipulation III.I.2) to be developed between FHWA, the MOA, and the Government Hill Board. It is important to note that a P3 contractor who will be completing the design, construction, and operation and maintenance the bridge has not been selected yet.

The GHCC also states that the MOU between FHWA and the MOA concerning the development of the GHNP was prepared without consultation with the GHCC, as required by the PA. Through the MOU developed between FHWA and the MOA, the MOA assumed the responsibility of consulting with the GHCC in the development of the GHNP, which serves the intent of the PA. This consultation is evident in the MOA's draft work products.

7) Cumulative effects (USFWS, TOA)

The USFWS has 2 concerns related to cumulative impacts they would like to have addressed before a Section 404 permit is issued. They are:

1. Additional significant loss and degradation of fish and wildlife habitat is expected from indirect project impacts, especially induced development in a largely rural area of the MSB. The purpose and need for the project should be revised so as to not be inappropriately based on vague, speculative land development projections (as currently reflected in the Purpose statement in the Public Notice: to meet existing and projected population growth and locally adopted economic development, land use, and transportation plans... "). Impacts of induced development should be quantified and minimized.

2. Cumulative effects on anadromous fish, fish habitat, migratory birds, and wetlands are also to be expected when combined with other Knik Arm developments such as the Port of Anchorage expansion, and Port MacKenzie Railroad extension. Immediate or near future impacts such as those described in #1 - 3, above, are expected to intensify with cumulative effects. Long-term consequences of the proposed project and related development (from both direct and indirect effects), if not mitigated, will likely be substantial declines in local fish

and wildlife populations and their habitat base in the MSB. Such impacts should be quantified, addressed and minimized, and appropriate compensatory mitigation offered for remaining unavoidable impacts, in accordance with the Federal Rule on Compensatory Mitigation: Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (33 CFR Parts 325 and 332).

The applicant offered in Appendix K of the FEIS (p, 90 of 95) to "help fund a new staff position in the (MSB) for up to \$100,000 per year for 2 years (to) develop a consolidated permitting process ("one-stop shopping") and facilitate appropriate land use, development, and environmental planning efforts... (and) help fund up to \$70,000 to be used...to facilitate orderly land use planning and economic development." While effective planning is essential to address induced and cumulative impacts, it needs to have a Green Infrastructure or related focus, which is not reflected in this offer. Moreover, neither offer appear in the Public Notice nor do they constitute mitigation of project impacts.

Both of these comments refer to cumulative effects as defined in the Section 404(b)(1) Guidelines. It is important to note that indirect and cumulative effects are defined in NEPA by the CEQ and secondary and cumulative are defined separately in the 404(b)(1) Guidelines for Section 404 permitting. In the 404(b)(1) Guidelines cumulative and secondary effects are defined as:

Cumulative effects are the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems.

Cumulative effects attributable to the discharge of dredged or fill material in waters of the United States should be predicted to the extent reasonable and practical. The permitting authority shall collect information and solicit information from other sources about the cumulative impacts on the aquatic ecosystem. This information shall be documented and considered during the decision-making process concerning the evaluation of individual permit applications, the issuance of a General permit, and monitoring and enforcement of existing permits.

Secondary effects are effects on an aquatic ecosystem that are associated with a discharge of dredged or fill materials, but do not result from the actual placement of the dredged or fill material. Information about secondary effects on aquatic ecosystems shall be considered prior to the time the final section 404 action is taken by permitting authorities

Some examples of secondary effects on an aquatic ecosystem are fluctuating water levels in an impoundment and downstream associated with the operation of a dam, septic tank leaching and surface runoff from residential or commercial developments on fill, and

leachate and runoff from a sanitary landfill located in waters of the U.S. Activities to be conducted on fast land created by the discharge of dredged or fill material in waters of the United States may have secondary impacts within those waters which should be considered in evaluating the impact of creating those fast lands.

Discussion of these cumulative impacts to fish, fish habitat, wildlife habitat, migratory birds, and wetlands are discussed in the *project's EIS and in the Record of Decision (ROD)*, the *Cumulative Effects Technical Report*, and Chapter 6 of KABATA's *Draft Section 404(b)(1) Evaluation*. Throughout the entire NEPA process, cumulative impacts have been defined and measures to mitigate the impacts and their long-term consequences have been proposed and incorporated into the ROD, which correspondingly have been incorporated into the permit application (See Attachment D; Mitigation Measures of the KAC Section 404 Permit Application). The USFWS does not acknowledge this extensive analysis of cumulative effects and the development of the mitigation measures through that process.

One of these mitigation measures for cumulative effects developed through the NEPA process is for KABATA to fund a new MSB staff position for 2 years and to fund up to \$70,000 for planning efforts. The USFWS claims that this does not appear in the Public Notice and it does not constitute mitigation for cumulative effects on project impacts. This is incorrect. Under "Avoidance and Minimization" in the Public Notice the first sentence references the Applicants Mitigation Statement. Page 11 of this statement identifies KABATA's mitigation commitments to land use and ownership changes (Section 2.13), which include the staff position and funding for land use planning.

KABATA does not have the authority over local land use or zoning, while the MSB does. By committing to staff this position and funding planning efforts, KABATA has shown diligence in meeting the requirements of NEPA and the Section 404(b)(1) Guidelines. The primary goal of the MSB Planning Department is ensuring that future growth and change will create a desirable human environment.

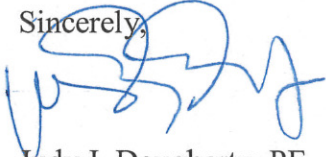
The USACE must take into account cumulative impacts and KABATA's mitigation measures to those impacts, when deciding if issuance of a Section 404 permit is in the public interest. However, the USACE can only require compensatory mitigation for unavoidable impacts. Other discreet discharges of fill in wetlands in the future in the Mat-Su Borough are speculative, cannot be quantified, and will require USACE approval, including compensatory mitigation.

Conclusion

The primary comments presented in response to the Public Notice are addressed in this letter. Additional comments and responses are attached in Appendix A. Together they represent a comprehensive response to all comments filed with the USACE. This should allow the USACE

to move forward with issuance of a Section 404 Permit requested by KABATA. If you have any questions, we are available to discuss them at your convenience.

Sincerely,



Judy J. Dougherty, PE
Deputy Executive Director
Knik Arm Bridge and Toll Authority

APPENDIX A

Public Notice Comment Resolution Matrix