



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

October 13, 2005

Reply to
Attn Of: ETPA-088

Ref: 05-001-FHW

Ms. Edrie Vinson
Federal Highway Administration
Alaska Division
709 West 9th St., Room 851
P.O. Box 21648
Juneau, AK 99802

Dear Ms. Vinson:

The Environmental Protection Agency would like to thank the Federal Highway Administration for conducting an extended interagency scoping process for the Knik Arm Crossing project. We welcome this opportunity for early involvement and believe that this type of collaboration will result in beneficial outcomes for both agencies. In this letter we offer additional written comments in order to document and augment our recent verbal comments. These comments pertain to the subjects addressed at the September 27, 2005 Interdisciplinary Team (IDT) meeting.

Purpose and need, range of alternatives. As stated, it is not clear whether or not the purpose and need statement narrows alternatives to slight variations of a bridge project. In recent discussions about the project, some alternatives that would seem to meet purpose and need are no longer being considered. It looks as if the range of alternatives has been narrowed to the No Action Alternative and essentially one action alternative, a roadway bridge, with one alignment crossing Knik Arm. The only remaining variables would be the specific alignment decisions at the east and west termini, and the design length of the bridge (pilings vs. fill). A purpose and need statement should be written in such a way that all reasonable and feasible alternatives will be considered and the statement should not unduly constrain the range of alternatives.

There are other seemingly reasonable and feasible alternatives that we think merit further consideration. One is a rail bridge alternative that provides for freight and commuter rail only, with potential for future additions such as roadway, pedestrian/bikeway, etc. This would meet the intent to develop the transportation system between the Mat-Su Borough and the Municipality of Anchorage (MOA) and the stated project needs, while having the potential to foster and facilitate more compact transit-oriented development. Such an alternative could substantially mitigate the secondary and cumulative effects of the project. We believe that a comparative analysis of the secondary and cumulative effects of a rail bridge vs. a roadway bridge alternative would be informative and worthwhile. Another alternative that seems reasonable and feasible is one recently suggested by non-governmental organizations proposing the use of more

ferries, commuter rail, transit, and additional augmentations to the existing infrastructure and public transportation systems.

All reasonable and feasible alternatives should be explored and evaluated. If alternatives are eliminated from detailed study, rationale should be given for their elimination and that information should be included in the draft EIS.

Key issues to be addressed in the EIS. We have additional comments regarding some key issues already listed for inclusion in the EIS (e.g., cumulative and secondary effects, aquatic resources), and we also recommend there be some additions to the list (e.g., ecological connectivity, farmlands, global climate change).

Cumulative and secondary effects. There has been much discussion about the direct impacts to beluga whales and fisheries from bridge construction. These issues are important and we look forward to seeing the analyses in the draft EIS. While we have not yet had the opportunity to collectively address the significant project impacts from secondary development and growth, we have been pleased with the proactive approach that FHWA has taken to engage in discussions about alternative future analysis. We continue to urge that this alternative futures work be done, and we highly commend FHWA for agreeing to do this. We understand that this work will be completed for inclusion in the Final EIS.

FHWA is not responsible for land use planning and decisions, but the agency is taking a leadership role for analyzing and disclosing the effects of its proposed projects. A potential means to mitigate for the proposed project's secondary and cumulative effects would be to analyze alternative future land use/build out scenarios using high, medium, and low or no Smart Growth and Low Impact Development controls. The environmental, economic (such as for infrastructure development of compact vs. dispersed development), and social costs of the modeled scenarios could be calculated and proactively conveyed via outreach to the public, local land use planners, and elected officials. With knowledge of the costs and consequences of these alternative future land use decisions, the public and decision makers could then select the type of future they wish to promote or create.

As recommended by Wheeler, et al., (2005), "More thorough consideration of highway impacts, and, ultimately, better land use decisions may be facilitated by conceptualizing highway development in three stages: initial highway construction, highway presence, and eventual landscape urbanization." The latter clearly presents "...the greatest threat to stream habitat and biota, as stream ecosystems are sensitive to even low levels (<10%) of watershed urban development."

These effects will carry into the marine environment of Knik Arm as well. It is therefore important to analyze for all the associated impacts of urbanization, such as, terrestrial and aquatic habitat loss, fragmentation, and alteration and the suite of physical, chemical, and biological impacts associated with these changes. For example, the quality, quantity, and timing of runoff from roadways; culvert blockages; the types and efficacy of mitigation measures that would or could be applied; and the ultimate effects

on key species and resources of concern, e.g. fisheries, beluga whales, drinking water supplies, and so on.

For the secondary and cumulative effects analysis, it will be important to disclose the assumptions used in the modeling efforts. For example, we understand that the growth forecasts used for the Plan Builder model, which were generated by the Institute for Social and Economic Research (ISER), assume the building of a Knik Arm Bridge. The assumption then used in Plan Builder is that the amount of future growth is the same with or without the bridge—the only difference is in how that growth is distributed.

However these assumptions do not seem reasonable in this case, because construction of a bridge would likely stimulate economic activity and growth that would not otherwise occur, and would also likely accelerate the pace of growth within the planning horizon. Thus, the amount of growth would not likely be the same with and without the bridge; we would expect to see significant differences in the amount of growth as well as in the location of growth. We recommend revising these assumptions for the modeling work.

Aquatic resources. Aquatic resources are already included in the list of key issues for the EIS. However, we wish to stress the importance of fully evaluating the aquatic resources that will be impacted directly, indirectly, and cumulatively as a result of the proposed project. The Knik Arm crossing, along with the expansion of the Port of Anchorage and Port MacKenzie in the Mat-Su Borough, are three major developments currently proposed and/or under development in Knik Arm. We continue to advocate that the three projects combine resources and share information to the maximum extent possible to provide a more comprehensive picture of the dynamics and environmental status, including aquatic resources, in that portion of the Knik Arm watershed that would be impacted by these projects.

We are especially concerned about two issues. First, trends in the math models that have been run on the proposed project suggest that velocities in the reach affected by the proposed intertidal fill will be reduced, resulting in a reduced tidal response in the upstream estuary, including the possible conversion of wetlands to open water. Also, the math models used so far do not adequately address many of the issues including potential changes in flows within the Arm in general, how the system maintains its energy balance between static head and velocity with the adjacent flow fields, and how the bridge and especially the causeways will interact with existing facilities including Port MacKenzie. We therefore recommend that an appropriate 3-D physical model be developed. Second, we feel it is important to evaluate the impacts within the entire reach of the sub-watersheds that feed Knik Arm, especially those that will be crossed by the proposed 14 mile road corridor, as opposed to just evaluating the area within the right-of-way of the proposed road corridor.

The upper Cook Inlet system, including the wetlands, streams and lakes that are a part of that system, is a very dynamic and important regional system. As we heard in the meeting, the 46,000 (or more) average daily traffic count that would be generated as a

consequence of the proposed project would come primarily as a result of the growth and development that would be stimulated by the project as proposed. The costs and environmental impacts that would occur as a result of the expected growth and development, especially if that development occurs in an unplanned manner, would far exceed the costs and impacts of just the project footprint. There is a need for long range planning tools so the area can be developed in a way that best meets the needs of the nation, the state, and the Mat-Su Borough. Identifying, mapping, and providing functional assessments for those aquatic resources within the areas that will be most affected by the proposed project will provide some of those important planning tools. We recommend that the DEIS for this project provide the information for the aquatic resources within the entire reach of those sub-watersheds of Knik Arm that will be crossed by the proposed project corridor. This information would be valuable for alternative futures analyses and for looking at mitigation opportunities.

We recognize the dilemma posed by pile driving and placements vs. fill. We believe that further study, information sharing, interagency discussions, and consultations with subject experts are needed to arrive at a prudent approach with respect to these bridge construction issues. Preliminary information indicates that pile driving and placements may be environmentally preferable to fill. We recommend that the short and long term impacts of both pile driving and intertidal fill be analyzed, including the full evaluation of the potential impacts on the upstream aquatic resources, system dynamics, and aquatic biota.

Ecological connectivity. The addition of the 14-mile Upper Pt. MacKenzie Road Corridor as part of the proposed project provides additional transportation benefits to the project, but also introduces additional project impacts. The impacts normally associated with new roadway projects would apply and should be addressed in the EIS. A particularly significant impact would be the barrier effect of the roadway, causing habitat fragmentation for terrestrial and aquatic species, as well as the effects on ecological processes, such as hydrology, movement of nutrients, sediment, and so on. As part of the proposal, we recommend (1) incorporating wildlife crossings to accommodate the movement needs of resident species and to increase safety by preventing vehicular-wildlife collisions, such as with moose; and (2) incorporating roadway design that provides for maintaining the integrity of natural ecological processes, particularly hydrological processes and connectivity.

Farmland. Because farmlands are located adjacent to the proposed 14-mile Upper Pt. MacKenzie Road corridor, and because these uplands would likely be deemed suitable for development, the threat to Mat-Su Borough farmlands from induced growth and development would be high. We recommend that the social and economic impacts of losing these farmlands be examined carefully, and the effects to overall regional sustainability be considered. The analysis of secondary impacts from growth and development should include a discussion of the consequences of losing farmlands in close proximity to a high population center and the increasing dependence upon long range transportation and distant sources of food to sustain the metropolitan community.

Global climate change. Climate change is occurring and well documented in Alaska, manifested by shrinking sea ice, melting glaciers, and the thawing trend in permafrost (Syun Akasofu, director of the Arctic Research Center, Anchorage Daily News, 8/14/05). These phenomena are relevant to this project in that hydrology in the area could change in ways that affect structure and design. We recommend exploring and taking into consideration the melting of the Knik Glacier and potential release of Inner and Upper Lake George behind the ice dam of Knik Glacier. The trend and rate of glacial melt for Anchorage-area glaciers could be noted and applied to the project timeframe/lifespan to determine if melt out and release could occur within this timeframe. If it appears possible or likely that the ice dam could be breached, there should be some assessment of what the potential consequences might be with respect to the proposed project.

At the recent IDT meeting you referenced an agreement between Headquarters FHWA and EPA, which states that FHWA will not examine project specific effects on global warming. We want to be clear that our suggestion is to consider the effects of global warming on the proposed project—not the project’s effect on global warming. We would be interested in looking at the agreement though and would appreciate your assistance in locating it. We have inquired at the FHWA and EPA Headquarters offices and searched the FHWA website for such an agreement, but have not found one.

We thank you for the opportunity to offer these additional comments, and sincerely appreciate the exemplary NEPA process you are conducting. Please contact Elaine Somers at 206/553-2966 or Steve Duncan at 907/271-1485 if you have questions or would like to discuss these comments.

Sincerely,

Christine B. Reichgott, Manager
NEPA Review Unit