KABATA KNIK ARM CROSSING DOT&PF

MEETING RECORD

DATE: 02-11-05 TIME: 10:00am JOB NO.:

RECORDED BY: Jim Glaspell CLIENT:

MET WITH: Ken Eisses – COE
Dennis Hardy – COE
Skip Joy – COE OF

MEETING LOCATION: KABATA conference room

ROUTE TO:	INFORMATION	ACTIONS
		Ken E. to contact Ebersoll
		Jack C. to provide Orson data to Ken E.

SUBJECT OF MEETING: COE concerns and modeling

ITEMS DISCUSSED:

Others in attendance: Dale Paulson, KABATA; Jack Colonell, URS; Doug Jones, Coastline Engineering; Robin Reich, HDR; Jim Glaspell, URS; Henry Springer (as observer),KABATA

Jack Colonell, URS, gave an overview of the purpose of the meeting. He said that they had heard COE interests and concerns. He said that he had met with the COE And heard about the plans for physical hydrologic model of Knik Arm.

Skip Joy, COE, said that he would be handling COE permitting. He said that he had been with COE since 1976 following the construction of the pipeline. He said that he had hydrographic survey experience.

Dennis Hardy, COE, said that he is the chief of civil works branch. He has been with the COE since 1971.

Ken Eisses, COE, said that he was the chief of hydrology and had been with the COE since 1981.

Dale Paulson, KABATA, said that he was the new environmental and regulatory affairs person.

Doug Jones, Coastline Engineering, said that he was an oceanographer and coastal engineer. He said that about 15 years ago did first computer modeling of Knik Arm. He has been helping guide computer model for hydraulics and water quality throughout Alaska.

Jack mentioned Orson Smith had been helping with this project and gave a summary of the 2004 hydrological work.

Robin Reich, HDR, described ongoing beluga whale and fisheries studies. She said that beluga whale observers (LGL) have seen up to 100-150 whales. No whales have been sighted seen since December 2004, but may not be easily visible because of ice. She said that typically, when the whales are in the Arm, they move from Eagle Bay to Eklutna with tides, following the shoreline. Robin said that the fisheries studies (Pentec) have included fish and

benthic (sediment) sampling. She said that polychaete worms were seen close to shore. Offshore sampling found only 1 invertebrate in 45 subtidal samples taken.

Jim explained that KABATA has bridge concepts including a pile only bridge and 7,000 -8,000 ft bridge connected to the shoreline with solid fill embankments.

Jack said that they are developing a numerical hydrologic model to look at possible effects of options on Knik Arm.

Skip asked whether there is there a preference for beluga to use one side or other of Knik. He asked how much space there would be between individual spans. He asked whether the beluga were following salmon.

Jack said that the minimum bridge would be 7,000 feet. He said that the span distance would be between 180-210 ft. He said that they would possibly use 4-6 ft diameter piles.

Jack said that they plan to use the "Mike" (Mike 21) family of models that has been developed by Danish laboratory. He said that URS used Mike 21 models for San Francisco Bay airport runway extension.

Ken said that the work in Knik Arm started 2 years ago with Vicksburg Lab (Bruce Ebersoll). He said that they used the model to get currents from Kodiak to Anchorage. He said that the NOAA/COE looked at 10 fixed stations for current data. He said that NOAA was hired to do 10-12 transects across inlet at all tidal cycles. He said that they were variable through water column and time. The COE tried to match numerical model with measurements. Ken said that they did tabletop modeling from Fire Island to Eagle Bay. It showed the 3-D effects that gyres at Woronzof and Cairn Point/

Ken said that they feel that the physical model is needed to look at data already in hand. He said that the approximation of the causeway would be placed on tabletop to show significant effects on system, gyres, etc. The work the COE is doing now is focus on POA dredging. He said that Cairn Point is critical to system. If the area is necked down more than Cairn Point, it will affect the system.

Jack said that the minimum of a 7,000 ft opening mimics width at Cairn Point. Jack aske how to access NOAA data.

Ken said that Bruce at Vicksburg should be contacted. The data should be available to KABATA.

Dennis said that the COE has some writeups. They gathered cross-sections data (bathymetry) over last 4-5 years from Fire Island to start of Eagle Bay.

Jack asked how far back is data available.

Ken said that the COE has only done work at POA dock face and 1970s data from near Nikiski.

Jack said that the project modeling is only in preliminary stages

Ken said that they were concerned most about boundary data. He said that they are using the ADSER model. He said that the COE wants to get hydro-dynamics right first, then move to water quality.

Jack said that URS did calibration and looked into source codes at San Franciso.

Skip said that he was not sure how the COE's concerns will affect regulatory functions and COE permitting. He said that Ken Eisses will not review KABATA numerical modeling. He said that trying to make a 2-D model reflect gyres is difficult.

Doug said that they should have model that predicts sedimentation rates. He said that the KABATA model planned in 2005. Meanwhile, the COE physical model results would be available in 3 years. He said that the project team thought about setting up a project perimeter to look at sediment flux through the entire boundary.

Ken asked how the model would this handle a gyre with higher velocities at top, slower currents at depth, and back eddies that slow down to drop sediment. He asked whether the source of sediments (glacial or tideflats) had been determined.

Doug said a good 2-D model should be able to handle gyres that show up with tides. He said that it still needs to see a good description of gyres to incorporate them into 2-D model

Dennis said that the gyres match up in NOAA data. He said that URS needs to look at it. He said that the flood tide runs 70% of time at POA. He said that NOAA used bottom-mounted acoustic equipment and tried to gather data to define outer boundaries. He said that Bruce Ebersoll (Vicksburg) will be contacted in advance by Ken Eisses.

Jack asked whether there is a good way to best to collaborate.

(It was determined that regular meetings and reviews would work.)

Dennis offered use of COE models and data. He said they need to fund use of models. He said that they would look for source of funds to allow COE staff to work directly with project.

Skip said that he was concerned with only one year of data to base model on.

Robin said that they have been meeting with regulatory agencies who have asked for one year of environmental data.

Ken said he feels that looking at suspended sediments throughout a year is a real missing link in data and one of toughest engineering challenges. He said the COE doesn't have money to look at this presently.

Doug said that more sediment data will be collected in 2005. He said rivers input sedimentation seasonally. There is some data collected in 2004 by Orson Smith on this.

Doug said whether scouring occurs every winter at POA.

Ken said that based on surveying monthly, the POA is filled in through November 2004. It has since stabilized and some scour occurred in January 2005. Ken said Jack should contact Allen Churchill for table that shows dredging quantity at POA.

Doug asked whether dredging occurs in same areas and depths.

Ken said that currently surveys are completed every 3 days by COE to monitor accretion and scour at POA.