8/19/82

BILL McANALLY
HYDRAULICS LAB
WATERWAYS EXP STA
P.O. BOX 631
VICKSBURG, MISS.
39180

Mr. William McAnally
Corps of Engineers
Hydraulics Laboratory, Waterways
Experiment Station
P.O. Box 631
Vicksburg, Mississippi 39180

Dear Mr. McAnally:

Pursuant to our telephone conversation of August 16, 1982, EPA, Region I may be interested in obtaining the services of the Corps of Engineers (C.O.E.) Hydraulics Lab to develop a model for the hydrodynamics of sediment transport in New Bedford Harbor and Buzzards Bay, Massachusetts. It is my understanding that the C.O.E. has the capabilities to perform the necessary field work, develop the mathematical model, and verify the model; and, that the time involved for such a project is approximately one year. The funding mechanism for this effort would probably be the existing Interagency Agreement between the C.O.E. and EPA under Superfund.

If EPA identifies the need for such a model, it is anticipated that its development should probably begin in the spring of 1983. I would appreciate assistance from you in determining the best course of action to implement this proposed project. Specifically, what information the C.O.E. would need from EPA, to initiate the project.

If you have any questions concerning this, I can be reached at FTS 223-5775.

Sincerely yours,

Gerard Sotolongo
New Bedford Project Officer
Compliance Section
Waste Response & Compliance Branch

DEPARTMENT OF THE ARMY
WATERWAYS EXPERIMENT STATION, CORPS OF ENGINEERS
PO BOX 631
VICKSBURG, MISSISSIPPI 39180

16 SEP 1982

REPLY TO
ATTENTION OF

WESHE

3 September 1982

Mr. Gerard Sotolongo
New Bedford Project Officer
Compliance Section
Waste Response & Compliance Branch
US Environmental Protection Agency
J. F. Kennedy Federal Building
Boston, MA 02203

Dear Mr. Sotolongo:

In response to your letter of 17 August 1982, I would like to confirm that the Waterways Experiment Station (WES) Hydraulics Laboratory has the capability to model hydrodynamics and sediment transport in riverine, estuarine, and coastal environments. At present, we employ two principal techniques--two-dimensional (2D) numerical modeling and hybrid modeling. We also possess three-dimensional (3D) numerical models and are beginning to apply them to practical problems.

In the hybrid modeling method, we employ scaled physical models, analytical techniques, field data, and numerical models to reproduce hydrodynamics, sediment transport, and salt transport more accurately and reliably than heretofore possible. Our 2D numerical model transports, deposits, and resuspends both cohesive and noncohesive sediments and accounts for layered structure in the sediment bed. We are now conducting or have conducted hybrid or numerical model studies of sediment transport in the Columbia River estuary, Cape Fear River, NC, Chesapeake Bay, Norfolk Harbor, VA, the Mississippi River, and Atchafalaya Bay, LA. We also collect the field data necessary to verify that the models properly reproduce behavior of the natural system.

Typical numerical model studies take 12 to 16 months and cost $200,000 to $300,000. Presently a hybrid model study takes 18 to 24 months and costs about $500,000. These are average figures and individual studies may differ significantly from them, depending on complexity of the problem and the number of conditions to be tested. If you wish, we can provide a detailed time and cost estimate after joint discussions of the system to be modeled.

We have previously performed studies for other government agencies, but we must obtain approval from the Office, Chief of Engineers prior to accepting

such studies. When you decide that you want us to perform a model study, please request approval through the Commander and Director, WES. Funding is usually handled by an interagency funding arrangement.

If you have any further questions, please call me at FTS 542-3822.

Sincerely,

W. H. MCANALLY, JR.
Engineer
Estuaries Division