

D-13

GORDON

EMAIL RE: MAY 10 MEETING

Gaines, Roger A MVM

From: Gordon, David MVS
Sent: Thursday, June 06, 2002 10:06 AM
To: Gaines, Roger A MVM
Subject: RE: May 10 meeting

Here it is:

Limitations - Obvious (its better to focus on the capabilities)

1. Water Surface Profile Analysis (in channel and floodplain)
2. Floodplain Sedimentation
3. Velocity Magnitudes
4. Quantitative & Near Field Scour and Deposition Analysis

Capabilities - Base upon experimentation and experience with past model studies, the following are the general capabilities of micro modeling. As with all sediment transport models, these capabilities are limited to qualitative analyses.

General

1. Three-dimensional scour and deposition trends in rivers and streams.
2. Changes in thalweg location from imposed training structures.
3. Qualitative velocity trends and patterns: Examination of main flow concentrations and general flow direction. Flow pattern determination in response to bathymetric changes imposed to the streambed.
4. General navigation studies to bathymetric and flow pattern response.
5. Main channel and side channel bathymetric analysis and study. Rearrangement of the bed forms to decrease dredging and to improve or diversify aquatic conditions.
6. Qualitative analysis of the three degrees of translation freedom as described by Ettema in "A Framework for Evaluating Micro-Models."

Specific

1. Flow and sediment response trend studies at multiple entrances (tributaries) and outlets (distributaries). (Mouth of the White River, Memphis Harbor, Morgan City)
2. Analysis and resolution of outdraft at lock approaches and bridge crossings. (LD24, LD25, Mouth of the White River, Morgan City, Vicksburg Front)
3. Implementation of Bendway Weirs; flow and bathymetric response. (LD24, SEMO Port, Mouth of the White River, Morgan City, Vicksburg Front)
4. Innovative design of environmental river engineering structures, i.e. notched dikes, chevrons, hard points, etc. (Copeland Bend, Bolters Bar, JB Bridge, Cottonwood)
5. Channel contraction measures to reduce dredging. (White River, Clarendon and Augusta; Savanna Bay, Copeland Bend, Bolters Bar, JB Bridge, New Madrid, Morgan City)
6. Dike and closure structure modification to increase scour or flow within side channels and off channel areas. (Sante Fe Chute, Marquette Chute, Schenimann Chute, Savanna Bay, Wolf Island, Salt Lake Chute, JB Bridge)
7. Sedimentation patterns within slack water harbors. (SEMO Port, Memphis Harbor)
8. Stream realignment at bridge crossings. (Big Creek)

- 9. Analysis and study of inflow sedimentation of lakes. (Slagle Creek)
- 10. Deposition patterns at water intakes. (Highbanks)

-----Original Message-----

From: Gaines, Roger A MVM
Sent: Tuesday, May 14, 2002 6:52 AM
To: Gordon, David MVS; Maynard, Stephen T ERDC-CHL-MS
Subject: May 10 meeting
Importance: High

Dave/Steve,

This is a reminder for the May 10 meeting in Memphis to review evaluation data and to outline/discuss report requirements and status.

Remember to work on your list of micromodel limitations (with minimal justification based on your view point from available information you have) between now and then. I'd also like to look at a list of capabilities in conjunction with the limitations. The justification I'm thinking of may only be a one liner like: "Based on observations of model response ..." or "Based on observations of flume response... ." You can be as elaborate as you wish.

Any feedback on these two areas before the May 10 meeting would be good. I still haven't gotten anything down on paper yet, but have a number of things stored in "memory" for now.

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