Coastal Inlets Research Program

Coastal Modeling System:

SMS/CMS GUI Development

Need The Coastal Modeling System (CMS) interface, Surface Water Modeling System (SMS) 12.3, was been released in 2018, and the next version, SMS 13.0, will be released at the end of the calendar year. These versions are very different from previous versions because it has a fully dynamic interface. As new features are implemented in the CMS numerical model, the interface must be modified to allow customers to use them. Also, the ability to create numerous simulation for varied sediment management alternatives that accurately manipulate volumes of material in placement and borrow areas is needed for multiple numerical models, including the CMS.
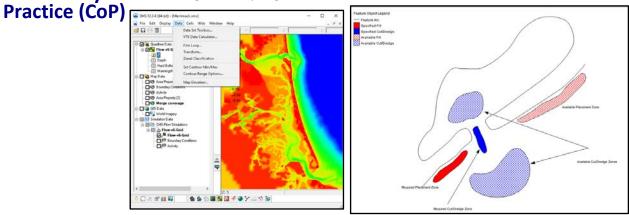
Approach
- Implement Sediment Mapping feature into SMS 12.3+ by adding menus for parameters and polygons for initial placement of material.
- Implement Cross Shore sediment transport feature into SMS by adding menus for parameters and option selection boxes.
- Implement Sea Level Change/Offset into SMS by adding additional options to boundary condition forcing dialogs.
- Implement Tidal Gates, Culverts, Weirs, and Rubble Mound Jetties into SMS by adding menu options for parameters and selection boxes for cell specification.
- Implement other new features as needed.
- Direct implementation of a sediment management coverage type within the SMS map module for handling polygons for borrow and placement zones and managing total volumes of material.

Technical Advancements This work aims to continue development of new features within the Coastal Modeling System and to provide a fast implementation of these capabilities from the SMS 12.3 and later user interfaces. Utilizing the dynamic model interface feature by an in-house developer, allows for more accurate menu options and definition of actions to be provided in a short amount of time. Additionally, a new sediment management feature will be created in SMS by Aquaveo to facilitate use of placement and borrow alternatives.

Leveraging Opportunities Developments within the SMS are coordinated and leveraged with other Direct R&D funded projects utilizing the SMS program, including the GenCade modeling tool.

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