

## Scott Boettcher

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**From:** Scott Boettcher  
**Sent:** Thursday, February 28, 2019 6:07 AM  
**To:** Scott Boettcher  
**Subject:** Phase II Sediment study

### **Task 1. Data Preparation**

Data preparation consists of collecting the existing ERDC models and reviewing the model and calibration reports. A review of the collected literature will also be done. Additional data will also be collected including any updated bathymetry for the area and significant changes which should be reflected in other model parameters. Data processing may be required including converting available datasets to required units and coordinate systems for the modeling, trimming datasets to the project area, merging datasets, and/or transforming datasets to a common vertical datum. It does not include time for additional data collection in the field or digitizing of new datasets from topographic maps or nautical charts. This also assume that the model will not need to be recalibrated (if needed, recalibration would be an additional task.)

### **Task 2. Model Assembly and Review**

This task involves the work necessary to get the existing models loaded onto our computers, reviewed and get the models running for the current conditions as modeled.

### **Task 3. Update models for Current Bathymetry**

This task consists interpolating the model elevations to the current bathymetry conditions. The models will be rerun and the results compared to the previously run models. These model runs will then be considered the baseline condition model for this study.

### **Task 4. CMS Flow/CMS Wave Coupled Run for Baseline Model**

The CMS Flow and CMS Wave models will be run together for the baseline condition. Two wave scenarios will be modeled to represent different wave conditions (directions).

### **Task 5. PTM Model Run for the Baseline Model**

PTM (Particle Tracking Model) will be used to assess transport of sediment due to dredging operations and other coastal processes based on the baseline model flow fields generated using CMS Flow/CMS Wave for both wave scenarios. Results will be compared to observed sedimentation patterns.

### **Task 6. CMS Flow/CMS Wave Coupled Run for Alternatives Models**

The CMS Flow and CMS Wave models will be run together for the alternatives condition. This model will be run using the same two wave conditions used in the baseline model.

### **Task 7. PTM Model Run for the Alternatives Models**

PTM (Particle Tracking Model) will be used to assess transport of sediment due to dredging operations and other coastal processes based on the model flow field generated using CMS Flow/CMS Wave for the alternatives models. Results will be evaluated to determine the benefits and effectiveness of the alternatives.

### **Task 8. Remote sensing of tidelands to aid research and monitoring of aquaculture sites**

Drones equipped with hyperspectral sensors and field measurements will be used to map beds of eelgrass, oysters, and burrowing shrimp in intertidal zones. We will compile a library of spectral signatures of these objects of interest, after which large areas can be rapidly surveyed and mapped.

### **Task 9. Reporting**

This task consists of summarizing the modeling process documenting model results, comparing the various mitigation alternatives and summarizing conclusions and recommendations in a report. The report will be provided in digital format as a Microsoft Word document and as a Portable Document Format (PDF). Digital model files, including any relevant animations or other graphical output will be include in a digital appendix.

**Task 10. Communication**

Communication with the project team, the client, the Army Corps and other stakeholders will be critical to the success of this study. This task include time for email and phone communication, frequent status meetings, emails, progress reporting, web meetings for model updates and presentation, and a minimum of two trips by our team for face-to-face meetings related to this project.

**Task 11. Contingencies**

Since the scope of this study is not well defined it is likely unanticipated task or issues may arise. This task provides for a 10% contingency on the total amount of the estimate to account for these unknowns.

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