

## **Appendix B. Proposed Project Milestones by Task for**

### **Scope of Work 8: Pilot a cost effective, real-time dissolved oxygen vertical monitoring system for characterizing mainstem Chesapeake Bay hypoxia**

Timeline shifted to accommodate later than proposed delivery of contract

#### **Task 1: (Timeline: 1st month **June 2019**)**

An initial meeting between contractor and project leads to:

- a) go over the winning proposal to align timelines and ensure mutual understanding regarding deliverable expectations;
- b) review current hypoxia monitoring efforts; and
- c) agree on one or more potential locations for the pilot study.

A minimum of two locations for long-term monitoring of bay hypoxia are recommended by Bever et al. (2018) "Estimating Hypoxic Volume in the Chesapeake Bay Using Two Continuously Sampled Oxygen Profiles." However, one test site location with at least two vertical data points will be sufficient if the contractor can produce a proof of concept for the system design.

MILESTONE 1 for payment: contractor provides written notes documenting any modifications to the project and action items within 1 week of this meeting for review by technical lead to ensure contractor and technical lead are in agreement.

#### **Task 2: (**July / August 2019** )**

Establish the details of the scope of work. Develop the written monitoring design, and operation protocol. Include data collection/management/delivery with a Quality Assurance Project Plan (QAPP) for the vertical profile station(s) (selected in task 1). In addition, task 2 will include:

#### **0) Based on initial meeting decision on deployment location, begin process of obtaining buoy permits from US Coast Guard, Army Corps of Engineers and MDE.**

- a) Identifying sensor type;
- b) Identifying existing or new monitoring platform required;
- c) Finalizing sampling protocol;
- d) Final review of comments on operation and maintenance protocol (protocols will also be reported on in QAPP); and
- e) Convening project leads and contractor to review overall project design.

MILESTONE 2 for payment: Provide all progress on task two in writing including the written design for review by technical lead before proceeding to Task 3.

#### **Task 3: (**August / September 2019**)**

Acquire sensors and prepare for test deployment. This task includes:

- a) Purchasing sensors;

- b) Building and/outfit pilot platform and profiler;
  - c) Testing sensors, pilot platform, and profiler
- MILESTONE 3 for payment: Provide written review of the sensor testing approaches and performance to technical lead before any field deployment.

#### **Task 4: Test Deployment by 15 October**

Short term test to Implement, maintain and operate; pilot monitoring design and protocol. This task includes:

- a) Deploying sensors, pilot platform, and profiler at one or more stations.
- b) Regular monitoring and maintenance of pilot sensors and platform(s) per protocol;
- c) Regular communication of performance by contractor with project leads;
- d) Establish sensor and platform removal date with project leads (less than 1 month); and
- e) Initial Test deployment performance report discuss project performance and adapt programming as necessary to address any significant issues in achieving success of the effort.
- f) Meeting with project leads to discuss Initial Performance Report and plan 2020 Spring Deployment

MILESTONE 4 for payment: Develop a google doc or another shared approach with open access to contractor and technical lead that is updated at least weekly.  
Submit written Initial Test deployment performance report

#### **Task 5: (December 2019 to March 2020)**

- a) Corrective measures as required to prepare for longer term Deployment; prepare instrumentation for longer Deployment.
- b) Deploying sensors, pilot platform, and profiler at one or more stations. (March 2020)
- c) Regular monitoring and maintenance of pilot sensors and platform(s) per protocol;
- c) Regular communication of performance by contractor with project leads;
- d) Establish sensor and platform removal date with project leads
- e) Biweekly or Monthly check-in calls for 30 to 60 minutes to discuss project performance and adapt programming as necessary to address any significant issues in achieving success of the effort.

Milestone 5 for payment

Deployment of sensor platform, monitoring and maintenance, biweekly calls;

#### **Task 6 (March -June 2020)**

Recovery of platform following 60 to 90 day test period, maintaining procedures in Task 5; Assemble dataset, analyze results, provide project leads with a draft midpoint report by June 15, 2020 for review/comment to brief project leads and stakeholders on pilot deployment performance. This task includes:

- a) Holding at least one meeting with project leads and stakeholders to review pilot deployment results and performance
  - b) Providing a presentation to the Chesapeake Bay Program's (CBP) STAR, Water Quality and Sustainable Fisheries GITs on draft performance, experience, and findings
- MILESTONE 6 for payment: Complete deployment; Identify specific meetings and dates to present final results in consultation with technical lead.

**Task 7: (August 2020)**

Complete and deliver final project report. This task includes:

- a) Meeting with project leads regarding review/comments to identify and agree on final report content;
- b) Drafting final report and deliver by August 1, 2020, with lessons learned about the equipment used in the study, the effort, the costs for infrastructure, its maintenance and data collection, management, and delivery. Including recommendations that address these areas of lessons learned applied to establishing a system of at least two vertical profiles for measuring vertical habitat conditions impacting living resources and involves the annual hypoxia cycle expressed in the deep waters of Chesapeake Bay; and
- c) Briefing report to project leads and other stakeholders identified by the project leads, including a final presentation to the CBP STAR.

MILESTONE 7 for payment: Provide a report outline to the technical lead for review by August 1, 2020. Provide a draft report to the technical lead by September 1, 2020.

\*Date of Final Report, products, and associated documentation submittal will be determined as the project progresses with input from the GIT Team.\*