Scope of Work

# Background

The New England Cyanobacteria Workgroup has undertaken a regional approach to cyanobacteria monitoring and bloom detection in New England. Collaborating entities have initiated a monitoring program and bloom watch to assess the occurrence and influence of cyanobacteria on the environment. Historically, monitoring data have been collected using paper forms. In 2014, EPA’s Region 1 began developing a mobile app for collaborating entities to collect monitoring data on the distribution and frequency of cyanobacteria in New England’s waters. The test mobile app was developed in Titanium, an open source cross platform IDE that allows a single code source to work on Android and iOS operating systems. Based on this initial app development and monitoring experience of field crews, the group plans to finish development and deploy the app for use in the field in 2015.

# Requirements

In conjunction with the Cyanobacteria Workgroup the contractor will modify the 2014 app with suggested enhancements. The modified app will be called Cyanobacteria Monitoring App (CMA). Key enhancements will include:

* + - Updated field names, formats, choice fields as referenced in (TEST Cappaert-Phone App Layout & suggestions.docx)
    - Capacity to detect and capture GPS location from mobile device, or enter manually.
    - Will include data entry QA to minimize illegal/illogical/out-of-bounds entries on suggested fields.
      * Required completion for some fields
    - Functionality to save draft submissions, view a certain number of past submissions (“My Reports” section?), and completions on identified field
    - Capture camera photo images as part of the form submitted (optional)
    - Log in / account creation (and storing account information for future automatic login)
      * For repeat submissions (same site but different week), pulling location information from past submission

The design of the CMA will be similar to the 2014 app with the following structure:

* + - Individual forms will be viewed by selecting from an animated list.
    - Data on each form will be saved in an internal \*.json file.
    - Data submission will be via the email client on the device and attached \*.json files.
    - Any necessary lists (site\_id’s, species names, lat/lon information etc.) will be supplied by the workgroup.
    - Distribution of the CMA will be limited to a designated group of users (either ad hoc, or via Test Flight) that meet the requirements of a single developers license for iOS devices. Android users are unlimited.

Potential for a second app, Bloom Watch! (BW!) exists. The BW app will be designed for widespread use, and will capture user images and additional information in a simple submission form. The goal of the app is to allow lay citizens to report potential blooms and provide pictures and basic background information to inform regional collection of data and to compare to known cyanobacteria (Dirty Dozen). Reports will be submitted to the Cyanobacteria Workgroup. Information to be collected may include:

* Full Name
* Contact Email
* Date
* Bloom Photos – along shore, macro photo up the coast, and room for others (max of 4 photos)
* GPS location of photo
* Weather information
* Additional notes?
  + Describe the location of the bloom in the water body (e.g. center of lake, at the boat dock, at the beach)
  + Is the bloom at a lake with public access for boating, fishing, and bathing?
  + Is the bloom near a publicly or privately owned beach? If yes, what is the name or the owner of the beach?
  + Estimate the size or the extent of the bloom
    - Use common terms in dropdown options: larger than a football field, between a football field and a tennis court, between a tennis bigger than a sedan, smaller than a sedan

# Timeline

|  |  |
| --- | --- |
| Project begins |  |
|  |  |
| Present first draft of CMA to Cyanobacteria WG via webinar | April 22 |
| Complete second draft | May 19 |
| Complete final version | June 1 |
| Sampling begins |  |

# Deliverables and Cost Estimate

**CMA**

This work will be done by contractors with specific expertise in app development using Titanium software. The production and distribution of the CMA app will be completed in accordance with the timeline above. Prompt delivery of the app will require timely review and feedback from the workgroup. The 2015 app as described above can be delivered for $3000.00. The contractors will be available for weekly meetings if necessary, for review. The contractors will also provide a users manual and training for users(if requested). Change orders outside of scope will be billed at $75.00 per hour. No work to be billed over the agreed $3000.00 will be conducted without prior written consent by NEIWPCC.

The BW! app will require a separate estimate.