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**Evaluating Physical, Chemical, and Biological Impacts from
the Savannah Harbor Expansion Project**

Cooperative Agreement Number W912HZ-13-2-0013

FY 2014 - Fourth Quarterly Report – September 30, 2014

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Dear Ms Richards –

The following paragraphs summarize the progress on the project for the period July 1, 2014 through September 30, 2014, according to the five objectives outlined in the Statement of Work and summarized below.

Progress by Objective

1. **Research and develop data analysis tools and standardized maps; Analyze and integrate multiple, complex datasets to provide detailed map**
 - a. **Bathymetric Data** – We have written scripts to convert these to ArcGIS shapefiles and we continue to work on integrating the bathymetry with existing LiDAR datasets of the surrounding terrain. These data sets are included in our local Geodatabase and may be migrated to the on-line map.
 - b. **Sturgeon Data:** We have received the second batch of data for the Sturgeon monitoring study in the Savannah River, extending the receiver locations and RFID transmitter data for the through May 29, 2014. We have been working on concepts for the display and analysis of these data and will discuss the most appropriate methods for analysis and display with Bill Post. We have included the receiver locations in the on-line map. We have received reports for sturgeon distribution for May, June, and July 2014 and posted them to the SHEP monitoring website.
 - c. **Vegetation/Marsh Monitoring Data** – We have incorporated the marsh monitoring site locations, as reported in Jamie Duberstein’s documents, into the Geodatabase and have plotted them on the on-line map, along with ground



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photos of each site. We have received reports from May, June, July, and August 2014 and quarterly reports from March and June of 2014. They have all posted been posted to the SHEP monitoring website.

- d. **Avian Tissue Monitoring** – We have received the second quarterly report and posted it to the website.
2. **Research, identify, and catalogue existing study documents for the major resource areas**
 - a. We collected Landsat imagery going back 20 years for the study area. Analysis has begun to determine land cover land use change for that time period.
 3. **GIS Data and Web Portal**
 - a. **Determine appropriate attributes for the GIS**
 - i. This is an on-going effort and depends on the data we receive from other researchers as described above in Objective 1. All mapping coordinates are standardized on the Georgia State Plane Coordinate System, East Zone, NAD83. Vertical coordinates are referenced to NAVD88, except for raw bathymetric data, which are referenced to local MLLW. Data sets with coordinates in other systems will be converted to State Plane as needed. The original coordinates will be preserved in the data sets as attributes.
 - b. **Develop a web portal to facilitate public access to the pertinent data**
 - i. During the Fourth Quarter of 2014, CGR worked closely with our point of contact at the U.S. Army Corps of Engineers (Ms Mary E. Richards) as well as Ms. Margaret McIntosh to implement, update and customize the website that will serve as data and information portal for the Savannah Harbor Expansion Project Monitoring Program. These efforts were documented in detail in the previous report. The web portal is now considered to be stable and is being maintained in a routine manner, although enhancements are being implemented as needed.
 - To guarantee site maintenance and to maximize uptime of the increasingly complex SHEP web portal we continue to train CGR personnel in the design and maintenance of the web site.
 - c. **Develop Standard Operating Procedures (SOP)**



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- i. These have not been established yet – since it is still early in the monitoring program, much of the data is not yet available. We are receiving some preliminary data but not enough to begin to set up formal SOPs. We have been developing visualization and display methods for the preliminary sturgeon monitoring data and the bathymetric surveys.
- 4. Update and maintain the GIS**
 - a. We have built geodatabases with base GIS data from Chatham and Effingham counties (Georgia) and Jasper County (South Carolina), including LiDAR, base GIS data layers (roads, hydrology, boundaries, etc.), multi-date aerial photography and satellite images, as available, in order to build a comprehensive geodatabase for the region.
 - b. Additional data will be incorporated into the base GIS as they become available or are provided to us by research partners.
 - 5. Prepare quarterly progress reports and annual reports**
 - a. This document represents the fourth quarterly report of FY 2014 for this project.

Please feel free to contact either Marguerite Madden or Tommy Jordan if you have questions or concerns regarding this report.

Respectfully submitted,

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