South Carolina Surface Water Quantity Models
Monthly Summary

Invoice Date:	May 29, 2015
For Services Between:	April 19, 2015 and May 16, 2015
Invoice No.:	9

Summary of Work Completed During Invoice Period

Project Management and Related Tasks

- Continued internal project coordination and management tasks, including:
  - Weekly project team meetings
  - Monthly project meeting by teleconference

Data Collection

- CDM Smith finished contacting registered and permitted water users in the Saluda basin and continued contacting water users in the Broad and Edisto basins to confirm reported withdrawal amounts, sources, and discharge amounts; collect pre-reporting withdrawal amounts (or estimates); and confirm operational parameters.
- Began contacting water users in the Pee Dee and Catawba basins, and began organizing existing data in the remaining basins.
- Received additional detailed climate and withdrawal data collected by Greenville Water.

Data Analysis and Modeling

Saluda

- Continued development of the unimpaired flow (UIF) dataset to the confluence of the Broad River, with focus on UIFs at reservoirs. Addressed comments on UIF methodology received from DNR and reviewed UIF reservoir methodology with Greenville Water.
- Updated the statewide agriculture irrigation model based on DNR review and comment.
- Began inputting water withdrawal, discharge, and operating data into the Saluda basin baseline and calibration models. The baseline model reflects current operations in the basin, whereas the calibration model includes time-series histories of water withdrawal and discharge data.

Edisto

- Continued collecting, organizing, reviewing, and analyzing DHEC data and data collected from users. Submitted draft of model framework for DNR and DHEC review.
- Began preparing the UIF methodology report and organizing the collected withdrawal and discharge data to facilitate development of the UIF dataset.

Broad

- Continued organizing, reviewing, and analyzing DHEC data and data collected from users. Began contacting permitted water users below Lake Wateree.
- As part of the UIF development in the Saluda, prepared UIF worksheets that will be used in the Broad and other basins.

Pee Dee

- Updated the statewide agriculture irrigation model based on DNR review and comment. Began organizing and reviewing golf course permitted withdrawals to determine significance and need for additional data.
- As part of the UIF development in the Saluda, prepared UIF worksheets that will be used in the Pee Dee and other basins.

Catawba

- As part of the UIF development in the Saluda, prepared UIF worksheets that will be used in the Catawba and other basins.
- Began researching the existing CHEOPS model and UIF dataset.

Santee

- As part of the UIF development in the Saluda, prepared UIF worksheets that will be used in the Santee and other basins.

Savannah

- As part of the UIF development in the Saluda, prepared UIF worksheets that will be used in the Savannah and other basins.

Salkehatchie

- As part of the UIF development in the Saluda, prepared UIF worksheets that will be used in the Salkehatchie and other basins.

Stakeholder Involvement

- Assisted with planning for the first stakeholder meeting in the Edisto basin.

Summary of Upcoming Work

Over the next month, the project team will:

- Substantially complete data collection from permitted users in the Edisto, Pee Dee, and Broad basins; continue data collection in the Catawba; and initiate data collection in the Santee, Salkehatchie, and Savannah basins.
- Finalize development of the UIF dataset for the Saluda Basin to the confluence of the Broad River.
- Complete development of the Saluda model to the confluence of the Broad River and begin calibration. Completion of the Saluda model to the terminus of the basin will depend on completion of the Broad River basin UIF dataset, and approval of associated amendment.
- Begin development of the Edisto and Broad UIF datasets. Once the Broad dataset is complete, the Saluda UIF dataset will be completed to the terminus of the basin at Lake Marion.
- Finalize development of the Edisto basin model framework, and submit a draft of the Broad basin model framework.
- Begin development of the Edisto basin model.
- Hold the first Stakeholder Meeting in the Edisto basin on June 18.

Issues Impacting Scope, Schedule, or Project Cost

Data collection from permitted users in each basin has taken longer than expected, which may delay development of the UIF datasets. Additionally, the decision was made to develop a Broad River basin UIF dataset, rather than attempt to use the existing, incomplete dataset. An amendment has been submitted for approval, but as of May 28, CDM Smith has not been notified that the S.C. Budget and Control Board has approved the amendment. Minor schedule adjustments have been made to reflect the project progress and more accurately account for future deliverables.

During the project kickoff meeting, and based on DNR and DHEC review of the draft Modeling Plan, several potential out-of-scope model enhancements were identified. These include:

- A "Current Situation Analysis" for quasi-real time operational support. This functionality would provide a probabilistic analysis of current conditions at any future point in time and how conditions are likely to change within 6 or 12 months based on projected use and management patterns.
- The ability to use near-term hydrologic flow forecasts (for example, 60-day streamflow forecasts from NOAA) for month-to-month operational planning.
- Use of HEC DSSVue and DSS files for results display and analysis.

CDM Smith has presented a scope for implementing these enhancements to DNR and DHEC, and will prepare cost. The decision on whether to implement one or more of these enhancements will likely be made once the pilot (Saluda) model is completed.