

## South Carolina Surface Water Quantity Models Monthly Summary

Invoice Date: September 30, 2015  
For Services Between: August 29, 2015 and September 30, 2015  
Invoice No.: 13

### 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
- Coordinated with ICC Global Hosting to conduct a one-month test of the Saluda basin model in a virtual desktop environment.

#### **Data Collection**

- Data collection in the Broad, Pee Dee, Catawba, Santee, and Salkehatchie River basins is substantially complete; however, additional follow-up calls are being made as the data is analyzed and incorporated and used for unimpaired flow (UIF) development and model development.
- Data collection in the Saluda basin is complete.

#### **Data Analysis and Modeling**

##### Saluda

- CDM Smith submitted a revised draft UIF dataset, based on additional comments from DNR, and incorporated the UIF dataset into the Saluda SWAM model during calibration. Coding was completed to automate the UIF extension process, facilitating reference gage selection and extension method selection. The UIF Results Memorandum was also updated.
- SWAM model calibration/verification at both the monthly and daily time step was completed.
- A draft report documenting the objectives, framework, model inputs, calibration results, and usage guidelines for the Saluda River Basin Model was prepared and submitted to DNR, DHEC, and the Technical Advisory Committee (TAC).

##### Edisto

- A draft set of UIFs were developed for the basin using the new, automated procedure. Internal (CDM Smith) review was initiated on the draft UIF dataset.

##### Broad

- CDM Smith continued hindcasting and gap filling withdrawal and discharge data, as part of the UIF dataset development.

### Pee Dee

- Withdrawal and discharge data was organized, and hindcasting of operational records was initiated.
- Based on comments received from DNR, CDM Smith revised and submitted the model framework.
- Presentation slides were developed for the first stakeholder meeting, scheduled for October 14.

### Catawba

- Continued contacting permitted and registered water users to confirm current and collect historical operations and water withdrawal data.
- Began preparing the draft model framework for the basin.

### Santee

- Withdrawal and discharge data was organized, and hindcasting of operational records was initiated.

### Savannah

- No work performed.

### Salkehatchie

- Withdrawal data (golf course are the only permitted water withdrawals in this basin) were organized, and hindcasting was initiated.

## **Stakeholder Involvement**

- The first stakeholder meeting for the Pee Dee River basin has been scheduled for October 14.
- The second stakeholder meeting for the Saluda River basin has been scheduled for October 15.

## **Summary of Upcoming Work**

Over the next month, the project team will:

- Initiate data collection in the Savannah basin.
- Finalize and submit the draft Edisto UIF dataset and Results Memorandum.
- Receive and incorporate comments on the draft Saluda model.
- Update and submit the SWAM User's Manual.
- Conduct a training session for DNR and DHEC staff on the Saluda model.
- Pilot test the model in a hosted, virtual-desktop environment.
- Continue development of the Broad UIF dataset. Once the Broad dataset is complete, the Saluda UIF dataset will be completed to the confluence of the Wateree River.
- Incorporate DNR, DHEC, and TAC comments on the draft Pee Dee River basin model framework and submit a revised draft for posting on the DNR website, in preparation of the first Pee Dee basin stakeholder meeting in October.
- Submit the draft Catawba River basin model framework, receive comments, and submit a final model framework, in preparation for the first Catawba stakeholder meeting in November.

### **Issues Impacting Scope, Schedule, or Project Cost**

Development of the UIF dataset in the Saluda Basin has taken longer than anticipated, and has pushed back the schedule for delivery of the Draft Saluda Basin Pilot Model. Issues regarding the methodology used to develop the UIF dataset, and the resulting precision of the UIFs, have been resolved following discussions between CDM Smith and DNR. As a result, a mutually agreed-to and repeatable process has been established and all of the tools and information necessary to efficiently develop the subsequent UIF datasets are in place.

Schedule adjustments were 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 prior to completion of the pilot (Saluda) model. The decision on whether to implement one or more of these enhancements will likely be made once the pilot model is completed.