

South Carolina Surface Water Quantity Models Monthly Summary

Invoice Date: August 31, 2016
For Services Between: July 30, 2016 and August 31, 2016
Invoice No.: 24

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

- Data collection most 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.
- A data request was submitted to Duke Energy and HDR Engineering for a record of flows coming out of Plants 7 through 11 for the period 6/2006 through 12/2010. The record of flows will be used to support the Catawba-Wateree model calibration and validation.

Data Analysis and Modeling

Saluda

- No work was performed. Remaining work includes finalizing the model report and submitting the final baseline model.

Edisto

- No work was performed. Remaining work includes finalizing the model report and submitting the final baseline model.

Broad

- No work was performed. Remaining work includes finalizing the model report and submitting the final baseline model.

Pee Dee

- No work was performed. Remaining work includes finalizing the model report and submitting the final baseline model.

Catawba-Wateree

- Development of the calibration model continued.
- Continued work on model enhancements to incorporate the Low Inflow Protocol (LIP) timeseries.

Santee

- Development of the calibration model continued.

Savannah

- Additional raw data used by GA EPD to develop mainstem UIFs was received and reviewed.
- Development of UIFs for the tributaries was initiated.

Salkehatchie

- Model calibration was completed and the development of the baseline model was initiated.
- Remaining work includes finalizing the model report and submitting the final baseline model.

Stakeholder Involvement

- Stakeholder meetings were held in the Salkehatchie and Savannah River basins, on August 9th and 10th, respectively.

Summary of Upcoming Work

Over the next month, the project team will:

- Submit the final (complete) Saluda Basin Model Report and baseline model, pending DNR acceptance of the previously submitted calibration summary (Section 7).
- Submit the final Edisto Basin and Salkehatchie Basin Model Reports.
- Submit the Draft Catawba-Wateree calibration model (pending receipt of requested reservoir outflows from Duke Energy/HDR Engineering, which will be used to assist with model calibration/validation).

Issues Impacting Scope, Schedule, or Project Cost

Schedule adjustments were made to reflect the project progress and more accurately account for future deliverables. Additional time has been spent (1) collecting water use and hydrologic information to support the UIFs and models; (2) performing model enhancements to provide increased user flexibility when modeling reservoirs and their operating rules; and (3) to allow for adequate review time of draft UIF datasets and models. In response, DNR has approved a time-only change order extending the project by five and one-half months, to the end of 2016. An updated schedule is attached.

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. The decision on whether to implement one or more of these enhancements will likely be made once additional models are completed.



Basin and Milestone	2016																					
	Aug					Sep				Oct			Nov		Dec							
	1-Aug	8-Aug	15-Aug	22-Aug	29-Aug	5-Sep	12-Sep	19-Sep	26-Sep	3-Oct	10-Oct	17-Oct	24-Oct	31-Oct	7-Nov	14-Nov	21-Nov	28-Nov	5-Dec	12-Dec	19-Dec	26-Dec
Broad																						
Model Framework																						
1st Meeting																						
UIF Dataset																						
Calibrated Model			F																			
2nd Meeting & Training																						
Pee Dee																						
Model Framework																						
1st Meeting																						
UIF Dataset																						
Calibrated Model		F																				
2nd Meeting & Training																						
Catawba-Wateree																						
Model Framework																						
1st Meeting																						
UIF Dataset																						
Calibrated Model				D																		
2nd Meeting & Training										2		F								T		
Santee																						
Model Framework																						
1st Meeting																						
UIF Dataset				D		F																
Calibrated Model							D					F										
2nd Meeting & Training										2											T	
Savannah																						
Model Framework																						
1st Meeting		1																				
UIF Dataset					D			F														
Calibrated Model														D							F	
2nd Meeting & Training															2						T	
Salkehatchie																						
Model Framework																						
1st Meeting			1																			
UIF Dataset		F																				
Calibrated Model		D			F																	
2nd Meeting & Training			2																			T

2016 Proposed Stakeholder Meeting Schedule

Basin	1st Meeting week of:	2nd Meeting week of:
Saluda	completed	completed
Edisto	completed	completed
Broad	completed	completed
Pee Dee	completed	completed
Catawba-Wateree	completed	3-Oct-16
Santee	completed	3-Oct-16
Savannah	completed	14-Nov-16
Salkehatchie	completed	completed

1 = First Meeting
2 = Second Meeting
D = Draft Completion Date
F = Final Completion Date
T = Training