

South Carolina Surface Water Quantity Models Monthly Summary

Invoice Date: June 3, 2016
For Services Between: May 1, 2016 and May 27, 2016
Invoice No.: 21

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
- The recent SWAM enhancements meant to increase user flexibility in specifying reservoir operating rules were further modified and minor algorithm improvements were made within the code.

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.

Data Analysis and Modeling

Saluda

- Updates to the Model Report were completed and a revised Section 7 was provided to DNR and DHEC for review.
- The baseline model was updated to incorporate the latest SWAM code, which included minor revisions to the reservoir enhancements.

Edisto

- The final Edisto Basin UIF Dataset and Results Memorandum was submitted to DNR and DHEC.
- The calibration model and model report were being finalized based on the final UIF dataset selected by DNR. The baseline model was updated to incorporate the latest SWAM code.

Broad

- The draft calibration model and the baseline modeling report were completed and provided to DNR and DHEC for review. The baseline modeling report was also provided to the TAC.
- The calibration model was updated to incorporate the latest SWAM code, which included minor revisions to the reservoir enhancements

Pee Dee

- The baseline and calibration models were updated to incorporate the latest SWAM code, which included minor revisions to the reservoir enhancements

Catawba-Wateree

- Draft UIFs for the Catawba and Wateree tributaries, and Wateree River below Lake Wateree, were substantially completed, and the combined UIF results and methodology memorandum was initiated.
- Development of the calibration model was initiated.

Santee

- The working calibration model was updated to incorporate the latest SWAM code, which included minor revisions to the reservoir enhancements.

Savannah

- No work was performed.

Salkehatchie

- The draft model framework and memorandum was finalized.

Stakeholder Involvement

- The second stakeholder meeting in the Pee Dee Basin was held on May 3, at the Doctors Bruce and Lee Foundation Library in Florence.
- The second stakeholder meeting in the Broad Basin was held on May 18, at the Spartanburg Community College, Tyger River Center, in Duncan

Summary of Upcoming Work

Over the next month, the project team will:

- Submit the final (complete) Saluda Basin Model Report and baseline model
- Submit the final Edisto Basin Model Report and baseline model
- Submit the Draft Catawba-Wateree UIF Dataset, support files, and memo
- Submit the Salkehatchie Basin Framework Memo
- Continue work on developing the Catawba-Wateree and Salkehatchie calibration models
- Work towards finalizing the Broad calibration and baseline models

Issues Impacting Scope, Schedule, or Project Cost

In late 2015, discussions were held between CDM Smith and DNR regarding how reservoir operating rules are incorporated in SWAM. DNR indicated the preference for additional flexibility in SWAM to allow the user to evaluate more complex alternative management rules. It was noted that when more complex rules (such as the Lake Murray Striped Basin release rules) were included in SWAM as “prescribed rules”, user-initiated adjustments to test variations of the rule were not easily performed. CDM Smith prepared, submitted, and recently received approval for a change order to implement model enhancements that will allow for increased flexibility with regard to reservoir operating rules.

Schedule adjustments were made to reflect the project progress and more accurately account for future deliverables. It is currently anticipated that due to delays in completion of the pilot model, the project schedule will need to be extended approximately six 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 Jan				Feb				Mar				Apr				May				June				Jul				Aug				Sep				Oct				Nov				Dec										
	4-Jan	11-Jan	18-Jan	25-Jan	1-Feb	8-Feb	15-Feb	22-Feb	29-Feb	7-Mar	14-Mar	21-Mar	28-Mar	4-Apr	11-Apr	18-Apr	25-Apr	2-May	9-May	16-May	23-May	30-May	6-Jun	13-Jun	20-Jun	27-Jun	4-Jul	11-Jul	18-Jul	25-Jul	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																																																							
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UIF Dataset																																																							
Calibrated Model																																																							
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1 = First Meeting
 2 = 2nd Meeting
 D = Draft Completion Date
 F = Final Completion Date
 T = Training

2016 Proposed Stakeholder Meeting Schedule

Basin	1st Meeting Week of:	2nd Meeting Week of:
Saluda	<i>completed</i>	<i>completed</i>
Edisto	<i>completed</i>	<i>completed</i>
Broad	<i>completed</i>	<i>completed</i>
Pee Dee	<i>completed</i>	<i>completed</i>
Catawba-Water.	<i>completed</i>	29-Aug-16
Santee	<i>completed</i>	29-Aug-16
Savannah	25-Jul-16	14-Nov-16
Salkehatchie	25-Jul-16	14-Nov-16