

BUILDING A WORLD OF DIFFERENCE

SUSTAINABLE WATER MANAGEMENT PLAN PROJECT UPDATE

UNIMPAIRED INFLOW EVALUATION



12 DECEMBER 2012



BLACK & VEATCH
Building a world of difference.®

Where are we now?

OVERALL SUSTAINABLE WATER MANAGEMENT PLAN TASKS

1. Work Plan

2. Problem Definition/Performance Indicators

3. Tailoring of Models to Indicators (ACF-DSS and ResSim)

4. Data and Information

5. Development of Water Management Alternatives

6. Conduct Iterative Basin Assessments

7. Seek Consensus

8. Report and Study Dissemination

Completed

- *UIF evaluation*
- *Water demands*
- *Caucus workshops (Nov)*

In Progress

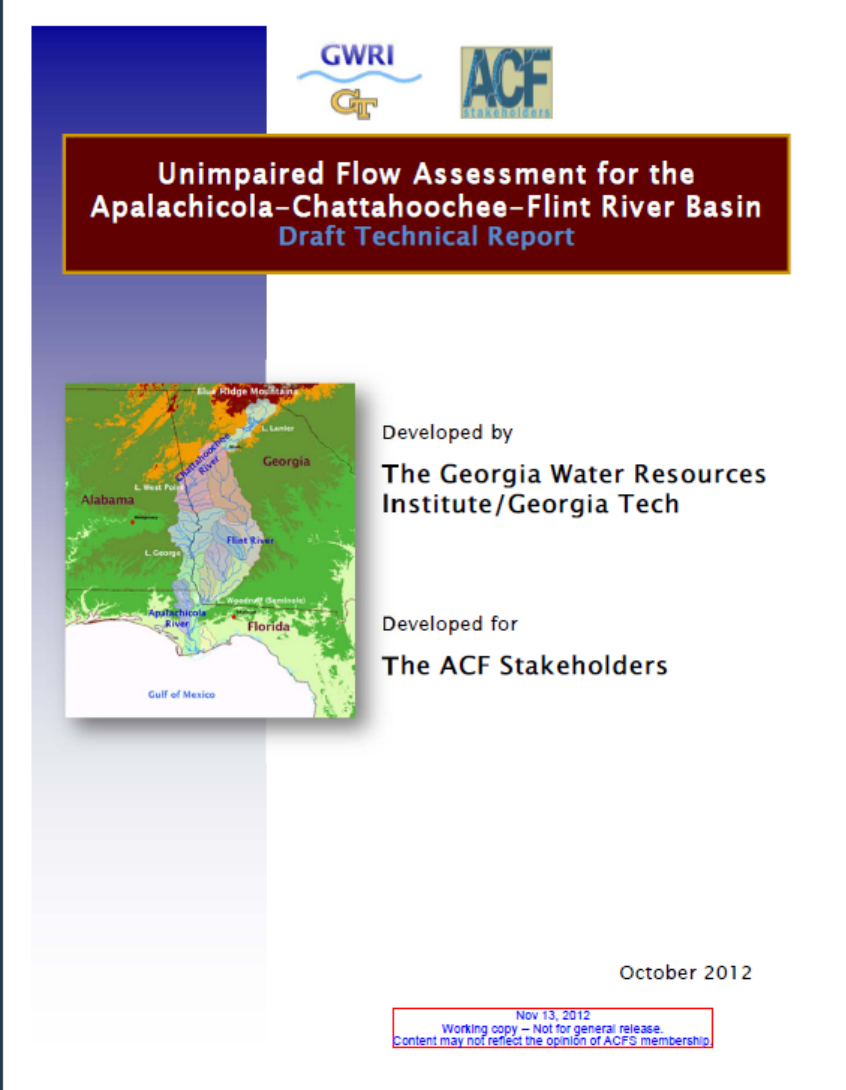
- *Performance metrics*
- *Water management alternatives*
- *Baseline model runs*
- *Bay evaluation determination*

PART OF TASK 4 : UNIMPAIRED INFLOWS EVALUATION

- ACF Unimpaired Inflow Workshop held on September 10
- UIF Report delivered October 31
- Revised UIF Report delivered November 10
- Discussed during multiple TOCWG calls
- Sensitivity runs performed
- UIF report distributed to agencies for review
- Alternative approaches to moving forward developed and discussed

UIF EVALUATION COMPONENTS

- Derivation process reviewed (Chapter 2)
- Assessments of individual reaches were performed (Chapter 3)
- Cumulative assessments were performed (Chapter 4)
- Alternative net evaporation estimation procedure outlined (Appendix A)
- Order of magnitude estimate of evaporation from additional impoundments (Appendix B)
- Findings and recommendations summarized (Chapter 5)



The image shows the cover of a technical report. At the top right are the logos for GWRI (Georgia Water Resources Institute) and ACF (Apalachicola-Chattoahoochee-Flint River Basin). Below the logos is a dark red banner with white text that reads: "Unimpaired Flow Assessment for the Apalachicola-Chattoahoochee-Flint River Basin Draft Technical Report". In the center is a map of the river basin, showing the Apalachicola, Chattoahoochee, and Flint rivers flowing through Georgia, Alabama, and Florida towards the Gulf of Mexico. The map includes labels for "Blue Ridge Mountains", "L. Lanier", "L. West Point", "L. George", "L. Westcott (Spartan)", and "Apalachicola River". To the right of the map, the text reads: "Developed by The Georgia Water Resources Institute/Georgia Tech" and "Developed for The ACF Stakeholders". At the bottom right, the date "October 2012" is printed. A small red-bordered box at the very bottom contains the text: "Nov 13, 2012 Working copy - Not for general release. Content may not reflect the opinion of ACF membership."

UIF REPORT FINDINGS

Errors are either Random or Systematic (more significant)

Dataset/Adjustment	Additive (Systematic) Uncertainties/Errors	Non-additive Uncertainties/Errors
Observed Flow	Biased streamflow measurements or estimation procedures	Random measurement and estimation errors
Streamflow Routing	Models with biases at high or low flows	Random routing model errors
Municipal, Industrial, and Thermal Demands	Persistent under- or over-estimation	Use of average monthly, annual, or interannual data
Agricultural Demands	Persistent under-or over-estimation	Use of average monthly, annual, or interannual data
Net Evaporation	Persistent under- or over-estimation	Use of average monthly, annual, or interannual data
Adjustments	Seasonal, annual, or out-of-record removal of negative values	Smoothing over neighboring days



UIF RECOMMENDATIONS

- Existing USACE UIF 1939-2008 series should continue to be improved
- Uncertainties in the UIF series exist, but management plan decisions can be informed by modeling using the existing series
- Higher emphasis on weekly/monthly flows and performance criteria due to the greater uncertainties associated with shorter time periods; desire of stakeholders for finer resolution is recognized
- Evaluation of modeling results should focus on comparisons between conditions

TOCWG CONSENSUS

TOCWG Members:

- Attended USFWS meeting with presentations by multiple agencies who have used models of the ACF system
- Discussed significance of findings with multiple agencies
- Evaluated time and effort involved with editing existing UIF dataset
- Agreed to move forward with existing USACE 1939-2008 series and in parallel encouraging stakeholders (states and USACE) to collaboratively improve the dataset

Building a **world** of difference.®

Together



BLACK & VEATCH