Charter for SJRWMD – SRWMD Cooperative Groundwater Model Development Project

(Next Generation North Florida Groundwater Model Project)
Revision 5, 12/9/2011

Project Participants

Owner -	St. Johns River Water Management District (SJRWMD)
Owner -	Suwannee River Water Management District (SRWMD)
Stakeholder -	North Florida Utility Coordination Group (NFUCG)
Stakeholder -	Florida Farm Bureau Federation (FFBF)
Stakeholder -	PCS Phosphate
Stakeholder -	Save Our Lakes
Stakeholder -	Office of Representative Charles Van Zant
Stakeholder -	Santa Fe Lake Dwellers Association
Stakeholder -	Lake Area Water Alliance
Stakeholder -	City of Keystone Heights
Stakeholder -	Florida Department of Agriculture and Consumer Services
Stakeholder -	Florida Department of Environmental Protection
Stakeholder -	Georgia Environmental Protection Division
Stakeholder-	Howard T. Odum Florida Springs Institute and Santa Fe Springs Working Group
Stakeholder -	Alachua County
Stakeholder -	Bradford Soil and Water Conservation District

Purpose of the Project

Work collaboratively to develop the next generation regional-scale groundwater flow model for North Florida and consider development of other tools within associated constraints. Ensure that the most appropriate science is applied to the modeling and data analysis to support decision-making and that the work completed is defensible, understood by the team, and collaboratively developed.

Critical Success Factors for the Project

1) Clearly defined set of goals, objectives, and definitions for the project
2) Effective communication among all project team members
3) Meet schedule deadlines within the allocated budget
4) High degree of cooperation and participation among all the entities involved with the project
5) Educate external parties/stakeholders on this effort and regularly report on project progress, resource constraints and model limitations to owner/stakeholder groups and owner/stakeholder group executives
6) Technical team will develop a decision-making process, document key discussions and decisions, and make documentation readily available.

Objectives and Measures of Success

Objectives/Goals	***Measure of Success***
1) Provide the framework for developing a Project Work Plan that addresses the purpose, goals and objectives described in this charter.	A Project Work Plan is developed by the technical team that implements the goals and objectives described in this charter.
2) The model output helps to answer all regional-scale model questions listed in Appendix A.	A reasonable groundwater modeling technical expert would judge the model output useful in answering the questions.
3) Facilitate the development of subregional models, where appropriate, to answer crucial subregional scale questions listed in Appendix A	In the early stages of the project, determine the feasibility of developing nested subregional models. For subregional models determined feasible in the near-term, develop timely charters for subregional model development.
4) The model provides necessary input to other hydrologic analysis tools required to answer crucial subregional scale questions listed in Appendix A.	In the early stages of the project, determine the feasibility of developing other hydrologic tools. For other hydrologic tools determined feasible in the near-term, develop timely charters for tool development.
5) The model calibrates to industry standards.	The model calibration statistics meet industry standards provided in the following ASTM standard: (ASTM, 2008, Standard Guide for Calibrating a Ground-Water Flow Model Application, Designation D 5981-96 (2008), ASTM International, West Conshohocken PA, USA, 6 pages.)
6) The model is accepted as a useful tool.	Parties recognize that there is no perfect unique solution when developing a groundwater model, and by the very fact that it is a model of a complex natural system, there will <u>always</u> be uncertainty in the results. Success would be 1) a reasonable, independent groundwater modeling technical expert judging the model developed by this project to be acceptable, by the standards of the profession, for helping to answer the modeling questions that have been asked, and 2) a clear understanding by all involved parties of the uncertainty and limitations of the model for answering the modeling questions in Appendix A.
7) Examine data needs and data availability for modeling tools under	Documented findings regarding data needs and data availability for modeling

consideration. (Summarize data gaps and identify mechanisms for resolving.)	tools under consideration. Estimate of resources and timeframes for gathering the information that would reduce uncertainty in modeling, specifically in critical areas of water resource constraints.
8) Project implementation decisions will be made by consensus of the Technical Team to the extent possible and all project implementation decisions must be documented in a form that is easily retrievable. When consensus is not reached, the issue is forwarded to the Steering Team for consideration.	The vast majority of project decisions were reached by consensus of the Technical Team and all project decisions are documented and easily retrievable. Project will be considered extremely successful if the Technical Team reaches complete consensus on model approach and methodology. A framework is developed early in the process to communicate and resolve conflicts in approach that can be incorporated into the ongoing change management portion of the charter.
9) Comply with Paragraph C of the SJRWMD – SRWMD – Florida Department of Environmental Protection Interagency Agreement (2011).	SJRWMD and SRWMD work cooperatively in designing and implementing this model development project.

Boundary Conditions

1. This project will not:
   - Directly modify the existing processes for permit-related coordination between the consumptive use permit and groundwater programs at either District or between the Districts;
   - Serve as a venue for negotiating changes to existing models; or
   - Replace, substitute for, or otherwise interfere with the District's regulatory responsibilities.

2. In the unlikely event that stakeholders have an unresolvable disagreement with the project owners on a technical issue, the decision of the owners will prevail.

Change Management

- This Charter will be revisited and modified as necessary to accommodate changes to the purpose, goals, objectives, and/or scope due to unanticipated events.

Definitions

Regional – For the purposes of this charter, regional refers to the entire model domain selected by the project team for the next generation north Florida groundwater model.

Sub-regional – For the purposes of this charter, sub-regional refers to a model or tool designed to address a modeling question at a scale less than regional. The domain of the model or tool is fully enclosed by the domain of the regional model.

Local – For the purposes of this charter, local refers to a model or tool designed to address a modeling question at a scale less than regional or sub-regional, typically on the order of a few square miles.

Project Team – The entire group of owners and stakeholders interested in the chartering and execution of this project.

Steering Team – A subset of the Project Team comprised of interested and qualified stakeholders who will provide high-level direction to the Technical Team. Direction expected to address project progress, objectives of the modeling work to be done, questions that the model ultimately will help to answer, adaptive management alternatives that present themselves as the work progresses and other high-level issues. Any interested stakeholder vested in the issue of North Florida groundwater modeling and able to provide leadership may request to be on the Steering Team. Owners may limit membership on the steering team to ensure a manageable work team and proportional representation of each stakeholder group.

Technical Team – A subset of the project team having technical expertise in groundwater modeling, hydrogeology, hydrology or related fields who have been selected by an owner or stakeholder group to represent that group. Owners may limit membership on the technical team to ensure a manageable work team and proportional representation of each stakeholder group.

Georgia Area of Interest – This charter makes reference to areas of interest in Georgia. An early responsibility of the Technical Team will be to define the areal extent of the model (model domain). Until that determination is made, the area of interest in Georgia is generally considered to be the counties of Colquitt, Brooks, Berrian, Cook, Lowndes, Atkinson, Lanier, Echois, Clinch, Ware, Brantley, Charlton, Glynn and Camden.

Roles and Responsibilities

SJRWMD (Owner) Roles and Responsibilities

- Provide project resources
- Provide input to the goals, objectives, and project definitions
- Develop assigned deliverables
- Review deliverables and other outputs of the project
- Provide input throughout the project
- Be the central point of communication
- Overall project management

- Select members to serve on Technical Team and Steering Team from pool of interested parties (to ensure manageable team size and proportionate representation of all stakeholder groups)

SRWMD (Owner) Roles and Responsibilities

- Provide project resources
- Provide input to the goals, objectives, and project definitions
- Develop assigned deliverables
- Review deliverables and other outputs of the project
- Provide input throughout the project
- Select members to serve on Technical Team and Steering Team from pool of interested parties (to ensure manageable team size and proportionate representation of all stakeholder groups)

Stakeholder Roles and Responsibilities

- Provide project resources on a voluntary basis
- Provide input to the goals, objectives, and project definitions
- Develop deliverables they have volunteered to prepare
- Review deliverables and other outputs of the project
- Provide input throughout the project

Steering Team Roles and Responsibilities

- Complete the project charter
- Review and approve the project plan
- Receive periodic briefings from the technical team on work progress and issues identified
- Weigh in on charter change management issues if they arise
- Document Steering Team project decisions

Technical Team Roles and Responsibilities

- Using the Project Charter as a guide, develop a project plan for the work including scope, resources and schedule. Present project plan to the Steering Team for review and approval
- Implement the approved project plan
- Periodically brief the Steering Team and Project Team on work progress and issues identified

Technical Team Members

Doug Munch, SJRWMD, Team Leader
Doug Durden, SJRWMD
Patrick Tara, Intera (for SRWMD)
Dale Jenkins, SRWMD
Fatih Gordu, Jones Edmunds (for NFUCG)
Rick Hutton, GRU (NFUCG)
George Porter, JEA (NFUCG)

Del Bottcher, Soil & Water Engineering Technology, Inc., (for Southeast Milk, Inc. FFBF)
Drew Jackson, Royal Consulting Services, Inc. (for FFBF, Florida Cattlemen's)
Douglas Dufresne, Ardaman & Associates, Inc. (for PCS Phosphate)
Patrick T. Welsh (for Save Our Lakes)
Peter Schreuder, Schreuder, Inc. (for City of Keystone Heights)
Jim Kennedy/Cliff Lewis, GA Environmental Protection Division
Camilo Gaitan, Florida Department of Agriculture and Consumer Services
Patrick Burger, SJRWMD
Robert Knight, Howard T. Odum Florida Springs Institute and Santa Fe Springs Working Group
Jeff Lehnen, CH2M Hill (for Office of Representative Van Zant)

Steering Team Members

Al Canepa, SJRWMD, Team Leader
Carlos Herd, SRWMD
Tony Cunningham/David Richardson, GRU (NFUCG)
Paul Steinbrecher, JEA (NFUCG)
Ty Edwards, Jacksonville Beach (NFUCG)
Staci Braswell, FFBF
Stan Posey, PCS Phosphate – White Springs
Katherine Van Zant, Office of Representative Charles Van Zant
Vivian Katz, Save Our Lakes
Mary Lou Hildreth, City of Keystone Heights
Jill McGuire, Santa Fe Lake Dwellers Association
John Sloane, Lake Area Water Alliance
Dana Bryan, FDEP, Division of Parks and Recreation
Paul Still, Bradford Soil and Water Conservation District

Charter Development Signatures

The signatures below from the designated representatives of owner and participating stakeholder groups indicate endorsement of this charter:

Name	**Organization**	**Signature**
1 Al Canepa	SJRWMD	_____
2 Carlos Herd	SRWMD	_____
3 Paul Steinbrecher	NFUCG	_____
4 Tony Cunningham	NFUCG	_____
5 Staci Braswell	Florida Farm Bureau	_____
6 Stan Posey	PCS Phosphate	_____
7 Vivian Katz	Save Our Lakes	_____
8 Katherine Van Zant	Office of Rep. Van Zant	_____
9 Mary Lou Hildreth	City of Keystone Heights	_____
10 Jill McGuire	Santa Fe Lake Dwellers	_____
11 Jackie Host	Lake Area Water Alliance	_____

Stakeholder signatures were obtained on the original version of charter and stakeholders have been provided and not objected to revisions shown through the change management process.

Appendix A – Questions To Be Answered By The Next Generation Model

The questions below were developed by owners and stakeholders participating in project charter development. Parentheses at the beginning of each question indicate to what level of detail (regional, subregional, local) a question could be answered if sufficient data were available.

North and Northeast Florida Resource questions:

1. (Regional/Subregional/Local) What are the changes in surface water flows in Suwannee River and Santa Fe River, and associated springs, as a result of groundwater pumpage in both water management districts and in Georgia?
2. (Regional/Subregional/Local) What are affects of groundwater pumpage on SJRWMD minimum flows and levels (particularly Keystone Heights area lakes)?
3. (Regional/Subregional/Local) What are the impacts of withdrawals on wetlands and non MFL water bodies?
4. (Regional/Subregional/Local) What are the impacts of pumping from the surficial, intermediate, or lower Floridan aquifer?
5. (Regional/Subregional/Local) What are the effects of land use changes on the water budget in the aquifer system?
6. (Regional/Subregional/Local) What are impacts of withdrawals on the sandhill lakes region of Alachua, Bradford, Clay and Putnam counties?
7. (Regional) What is the extent to which withdrawals in SJRWMD, SRWMD and southeast Georgia influence each other? (i.e., have withdrawals in these 3 separate areas caused overlapping “cones of depression” in the Floridan aquifer’s potentiometric surface and, consequently, caused capture of recharge from surface water bodies or capture of discharge from springs located within the adjacent areas?)

8. (Regional/Subregional/Local) How can White Springs be recovered?
9. (Regional/Subregional) Can the distribution of withdawal be changed to make more groundwater available?
10. (Regional/Subregional/Local) How does natural or man-made point source recharge at locations in the model affect sandhill lakes, Suwannee River, Santa Fe River and Ichetucknee flows or other natural resources?
11. (Regional/Subregional/Local) What are the potential effects of aquifer recharge projects?
12. (Regional/Subregional/Local) What are the impacts of withdrawals on groundwater quality within the Floridan aquifer system that may affect potential future groundwater resources?
13. (Regional/Subregional/Local) What are impacts of domestic self-supply (DSS) on groundwater levels?
14. (Regional/Subregional/Local) What are impacts of unmetered uses below the Consumptive Use Permitting (CUP) threshold?
15. (Super–Regional?, Regional) What are pre-development conditions?
16. (Regional/Subregional/Local) What is the sustainable limit to current and future groundwater withdrawals in the area based upon given water resource constraints and proposed future spatial distribution of groundwater withdrawals?
17. (N/A) What are the data gaps for regional transient model, subregional or local models?
18. (N/A) What can be done to ensure the model has the ability to evaluate projects on multiple scales?
19. (Regional/Subregional/Local) What is the best way to model karst?

20. (Regional/Subregional/Local) What are the most appropriate MFL prevention and recovery strategies?
21. (Regional/Subregional) Are water resources west of the Cody scarp more sensitive to potentiometric level changes than water resources to the east of the scarp? If so, quantify the increased sensitivity.