

ATTACHMENT A — STATEMENT OF WORK

INDEPENDENT TECHNICAL PEER REVIEW SERVICES WEKIVA BASIN HSPF AND HEC-RAS MODELS DEVELOPMENT AND DOCUMENTATION REVIEW

I. INTRODUCTION/BACKGROUND

The minimum flows and levels (MFLs) Program of the St. Johns River Water Management District (District), mandated by state water policy, is a District-wide effort to establish MFLs for priority lakes, streams and rivers, wetlands, springs, and groundwater aquifers. MFLs designate the minimum hydrologic conditions that must be maintained in these water resources to prevent significant harm resulting from permitted water withdrawals. The MFLs approach addresses short and long-time scales (i.e., seasonal, annual, and decadal cycles) and incorporates an adaptive management approach to resource protection.

MFLs are scheduled for adoption by 2019 for four priority water bodies within the Wekiva River Basin. This includes an MFLs reevaluation for the Wekiva River at State Road (SR) 46 (Seminole/Lake Counties), Wekiwa Springs (Seminole/Orange Counties) and Rock Springs (Orange County) and an MFLs determination for the Little Wekiva River (Seminole/Orange Counties). Systems within the Wekiva River Basin are regionally important water bodies and have been designated Outstanding Florida Waters. The Wekiva River is a Florida Scenic and Wild River, a State Canoe Trail and a National Wild and Scenic River.

The District developed HSPF and HEC-RAS models for evaluation of the Wekiva basin MFLs. Review of these models will occur as part of the comprehensive Central Florida Water Initiative (CFWI) peer review process.

II. OBJECTIVES

_____ (Consultant) shall provide the District with the services of an independent technical peer reviewer of scientific and technical data, methodologies, and assumptions related to the development of the surface water models (HSPF and HEC-RAS) to be used to support development of MFLs for water bodies within the Wekiva basin. Consultant shall participate in one or more public workshops aimed at involving interested stakeholders in the CFWI peer review process.

In the event of civil or administrative litigation in which the subject matter of the model and report are relevant, Consultant agrees that he/she will make himself/herself available during the period of such litigation as an expert witness under the direction of the District's Office of General Counsel or such other counsel as the District may employ. The District may designate Consultant as a testifying or non-testifying expert and may assert the attorney work product privilege as to the research and report during the period of such litigation. This task, if required, will be completed under a separate work order or contract and shall include coordination and cooperation with the District's Office of General Counsel.

III. SCOPE

Consultant shall review and assess the appropriateness of all scientific and technical data, specific model or relationships applied, model methodologies and analyses, and model assumptions associated with the development and calibration of the Wekiva basin surface water (HSPF and HEC-RAS) models. Consultant shall conduct a thorough review of the models and the associated documentation report, to assess the following:

- Adequacy and appropriateness of the data used in model development and calibration;
- Validity, defensibility and appropriateness of the development and calibration of the models;

- Deficiencies, errors, or areas for improvements in model development and calibration.

Consultant shall share and discuss findings in one or more public workshops as part of the CFWI peer review process.

IV. TASK IDENTIFICATION

Consultant shall perform the following tasks to accomplish the Scope of Work described above.

Task A. Project Kick-off Meeting and Site Visit

Consultant shall participate in a project kick-off meeting and site visit to ensure Consultant has the opportunity to observe the hydrologic features being modeled to help with their review and understands the work assignment, the peer review process, and timeframes. This meeting will be public and part of the CFWI peer review process.

Deliverable: Consultant shall provide the District Project Manager with a brief summary email of the meeting, including specific action items for model review and documentation.

Task B. Peer Review Wekiva Basin Models (HSPF and HEC-RAS) and Documentation Report

B.1 Review Models and Documentation: Consultant shall review all scientific and technical data, methodologies, assumptions, and recommendations related to development and calibration of the Wekiva Basin surface water models (HSPF and HEC-RAS) and the following model report and appendices:

- Seong, C.H. and A.E. Wester. 2018. Wekiva River MFL hydrology and hydraulic modeling support. SJRWMD draft report.

Performing model simulations (other than one model run to produce the output files for review) are excluded from the scope of services.

Deliverable: Consultant shall provide the District Project Manager with an email confirming receipt of model and documentation report.

B.2 Peer Review Public Workshop: Consultant shall attend a half-day public workshop to share their initial comments, listen to comments from stakeholders and collaborate with other peer reviewer(s). In addition, the Consultant shall read all comments provided by stakeholders and other peer reviewer(s) and will consider all comments in the Consultant's draft technical memorandum (subtask B.3).

Deliverable: Consultant shall prepare a summary of the public workshop, comments received, discussion items and key action items and submit to the District's Project Manager.

B.3 Peer Review Technical Memorandum (TM): Consultant shall prepare a draft and final TM summarizing their findings and recommendations related the Wekiva Basin surface water models and report and submit to the District's Project Manager. Consultant shall consider and respond to stakeholder comments from the public workshop in the draft TM. The draft TM will be reviewed by the District and stakeholders. The Consultant shall consider and respond to all comments to the draft TM in the final TM.

Consultant shall include the following items in the review process and provide answers to the following questions in the TM.

- 1) Assess the adequacy and appropriateness of the data used in model development and calibration.
 - a) Was "best information available" utilized to develop and calibrate the models?
 - b) Are there any deficiencies regarding data availability?
 - c) Was relevant information available that was discarded without appropriate justification? Would use of discarded information significantly affect results?

- 2) Assess the validity, defensibility and appropriateness of the model development, and calibration.
 - a) Determine if the model is appropriate, defensible, and valid, given the District's MFLs approach.
 - b) Evaluate the validity and appropriateness of all assumptions used in the model development and calibration.
 - Are the assumptions reasonable and consistent given the "best information available"?
 - Is there information available that could have been used to eliminate any of the assumptions? Could the use of this additional information substantially change the models results?
 - c) Review model input and output data including but not limited to:
 - Model elevations vs collected data to verify same datum used consistently;
 - Flow/stage plots to look for model instabilities;
 - Output file for model warnings (full flow channels, flooded nodes, etc.);
 - Continuity error and convergence data;
 - Water budget to check for reasonableness;
 - Values assigned to model parameters to check for reasonableness;
 - Appropriateness of boundary conditions including spring flows and river stages used in model inputs; and
 - Review of the methodologies used to:
 - Develop boundary conditions including spring flows; and
 - Incorporate HSPF output in HEC-RAS models.
 - d) Development of an independent water budget will be included in this subtask.

Deliverable: Contractor shall prepare a draft TM summarizing their findings and recommendations Wekiva Basin surface water models and report, and report and submit to the District's Project Manager.

V. TIME FRAMES AND DELIVERABLES

The expiration date of this Work Order is , 2018. Specific timeframes as they apply to tasks, milestones, deliverables, and teleconferences are included in Table 1.

Table 1. Schedule

Task	Completion Date
Task A. Project Kick-off Meeting and Site Visit	September , 2018

Task B.1 Peer Review Wekiva Basin Model and Documentation Report	September , 2018
Task B.2 Public Workshop	October , 2018
Task B.3 Peer Review TMs	
Draft TM	November , 2018
Final TM	December , 2018

Consultant shall employ an internal quality review process to ensure only high quality, complete, and correct products are provided to the District. Deliverables prepared by Consultant shall be clear, concise, thorough, and grammatically correct. Consultant shall present data for technical products in a well-organized format. Findings should be based on a logical derivation from the facts and data. Consultant shall provide written confirmation by a principal of the firm that quality assurance procedures were followed prior to release of a given deliverable upon request by the District’s Project Manager. References shall be appropriately cited.

Consultant shall assure that all spelling and grammar errors disclosed by the Microsoft Word spelling and grammar check functions and all tracked edits have been addressed so none are showing in the document when the tracking features and the spelling errors and grammar check are set to show on the computer screen or in the printed document.

Consultant shall submit the complete report in editable digital format, including all graphics and tables integrated with the text of the report. The District’s Project Manager, at his/her discretion, also may require up to three paper copies of the final deliverables. Consultant shall provide the following digital files:

1. A Microsoft Word file of all text and any graphics that may feasibly be incorporated into the document without creating an unwieldy large file or causing printing difficulties. Adobe Acrobat files that are not convertible to Microsoft Word are not acceptable as the sole form of submission for any part of the report except appendices.
2. Separate large files of data, graphics, Geographic Information Systems (GIS) shape files and coverages and any other graphics or other report materials that are not feasible to incorporate into a Microsoft Word document. All files must be in manipulatable formats acceptable to the District.

The District’s Project Manager may require non-Word files to be in their native formats. Adobe Acrobat files are not acceptable as the sole form of submission for any graphics, GIS products, data or other materials unless such material cannot be converted into another format.

Electronic submissions must meet the following specifications:

1. Deliverables may be submitted on Compact Disc (CD), Digital Versatile Disc (DVD), ftp site or by e-mail.
2. E-mail submissions may not consist of more than five (5) files unless otherwise approved by the District’s Project Manager.
3. Each CD or DVD must have a label including contract name, number, Consultant, submittal date, version, and file names.
4. Each CD, DVD, or ftp folder must have an obvious directory structure.

5. A read-me file listing and describing the contents by file name must be included if a CD or DVD contains too many files to put on a label or if the materials are submitted on an ftp site or by e-mail.
6. The digital files for the final document (including all graphics, appendixes, tables, peer reviews, etc.) must be in their own CD, DVD, ftp folder or e-mail separate from any draft or preliminary versions or data.

All report materials produced for the District under this contract shall become property of the District and may be edited by the District in consultation with Consultant for style, writing quality, and format.

VI. BUDGET/COST SCHEDULE

This Work Order is for a lump sum amount of \$.00. Consultant shall invoice the District monthly based on a percent complete per task (Table 2). Invoices shall include documentation (progress report) listing work completed and work planned. The cost includes all expenses associated with the Work, with the exception of travel required by the District. Travel expenses, if required and approved by the District’s Project Manager, shall be reimbursed by the District in accordance with the District Administrative Directive 2000-02.

Table 2. Budget

Task	Total Dollars by Task
Task A. Project Kick-off Meeting and Site visit	
Task B.1. Peer Review Wekiva Basin Models and Documentation Report	
Task B.2. Public Workshop	
Task B.3 Peer Review TMs	
Total Budget	