

EXHIBIT A – MASTER AGREEMENT SCOPE OF WORK

SEMINOLE COUNTY WATER ATLAS MAINTENANCE

This scope of work describes the tasks that will be completed during each County fiscal year, October 1-September 30 under the terms of the Agreement between Seminole County and the University of South Florida for work on the Seminole County Watershed Atlas Project.

OBJECTIVE

The objective of this project is to maintain, modernize and enhance the Seminole County Water Atlas that currently serves as a primary facility for assisting citizens, scientists and government leaders in the management of Seminole County water resources.

PROJECT DESCRIPTION

The scientists of Seminole County (COUNTY), along with those from St. Johns River Water Management District, United States Geological Survey, Florida Department of Environmental Protection, Florida Wildlife Commission, local governments in Seminole County, and others collect hydrological, biological and water quality data for the County's many waterbodies. In addition, citizen groups such as Florida LAKEWATCH volunteers and neighborhood associations routinely collect water quality data and record water levels. Data from these many sources are gathered and stored by the University of South Florida Water Institute (UNIVERSITY) and presented on the Seminole County Water Atlas (ATLAS). The ATLAS presents Seminole County water and other natural resource data in ways that facilitate citizen appreciation of the County's water resources and of the work being done to protect those resources by Seminole County and other agencies.

Water Resources and water quality management challenges will continue to mount for Florida's county governments in the upcoming years, making it crucial that counties develop and maintain efficient data management systems that support public and private analysis and planning efforts and citizen outreach and education. The ATLAS provides essential services for Seminole County and seeks to maintain and enhance this work in light of present and increasing demands. Toward this end, five tasks are described below.

PROJECT WORK PLAN

This project work plan includes the maintenance and support efforts that will ensure the ATLAS is available and fully functioning (Task 1 and 2), as well as advanced services required to support COUNTY water related data management and future ATLAS application improvements and enhancements (Task 3).

TASK 1: BASIC LEVEL OF SERVICES

Data Updates

Whenever possible, the ATLAS application is designed to update water quality, hydrology, and other data using automated database tools. So long as each data provider continues to support the automated data update protocols developed for the ATLAS, the UNIVERSITY will ensure that these tools continue to provide updated data for the duration of this Agreement. The UNIVERSITY will work with data providers to periodically update/edit sample site locations of existing datasets, and to allow new data to be accessible via the web interface.

The Florida Dept. of Environmental Protection's Watershed Information Network (WIN) database is the preferred data source for parametric data. The UNIVERSITY will acquire data from WIN and update the Water Atlas database with those data at least quarterly. For other providers, data update frequency will be scheduled to match as closely as possible the update frequency of the data provider based on historical data. WIN is the

successor to the STORET database. There will be no more uploads to STORET and it is now a legacy dataset. It is important to note that these data updates are scheduled to provide the timeliest updates but at a reduced cost to the Project. Tables 1 and 2 list the primary datasets currently included as part of the Basic Level of Services ATLAS Project.

Not listed in Tables 1 and 2 are those “legacy” data providers who have provided information to the Water Atlas in the past, but which are not currently active. Those data will be retained in the Water Atlas for historical interest and use in trend analysis but will not be updated during the period of this agreement.

In addition to GIS and parametric data, the ATLAS is also designed to include numerous electronic documents and links to other websites. With limited assistance from the UNIVERSITY, the COUNTY or its designees will be responsible for maintaining the published documents and links on the ATLAS using the password-protected web-based ATLAS Content Management System (WRAD-CMS). Also, the COUNTY will be responsible for accepting and replying to most email received via the ATLAS relative to inquiries about the contents; however, the UNIVERSITY will respond to email comments related to the technology behind the ATLAS, such as reports of bugs or error. The COUNTY may, at its discretion, share these responsibilities with staff from partner government agencies.

Table 1. Seminole County Water ATLAS Data Update Datasets

Data Set	Data Type	Update Frequency
FNAI Managed Lands	GIS	When Available
Land Use / Land Cover	GIS	When Available
Boat Ramps – Seminole County	GIS	As Available
WBID Boundaries and Verified Impairments (EPA & DEP)	GIS	Annually
Sampling Locations	GIS	Monthly
Waterbodies	GIS	Monthly
NOAA_NWS	Parametric	Near Real-time
ORANGECO_DATA_LOGGERS	Parametric	Near Real-time
ORANGECO_STORM_RAINLEV	Parametric	Monthly
SJRWMD_HYDRO	Parametric	Near Real-time
USGS_NWIS	Parametric	Daily

Table 2. Seminole County Water ATLAS WIN Data Update Datasets

WIN_21FLALTA – City of Altamonte Springs*	Parametric	Quarterly
WIN_21FLCASS – City of Casselberry*	Parametric	Quarterly
WIN_21FLCEN – FDEP Central District	Parametric	Quarterly
WIN_21FLFSI – Florida Springs Institute	Parametric	Quarterly
WIN_21FLGW – FDEP Watershed Monitoring Section	Parametric	Quarterly
WIN_21FLKWAT – Florida LAKEWATCH	Parametric	Quarterly
WIN_21FLORAN – Orange County EPD	Parametric	Quarterly
WIN_21FLSJWM – St Johns River Water Management District	Parametric	Quarterly
WIN_21FLVEMD – Volusia County*	Parametric	Quarterly
WIN_21FLWQA – FDEP Watershed Assessment Section	Parametric	Quarterly

**These data sources are unique to the Seminole County Water Atlas.*

Quality assurance and control efforts will be performed by the UNIVERSITY as part of all data update tasks to ensure that data are made available on the ATLAS and that questionable data values are intercepted and prevented from display. No data update task will be considered accomplished without the completion of this QA/QC procedure. Quarterly project reports will include statistics and information about all data updates in order for the COUNTY to verify that updates were performed as described. Data from “legacy” data sources (Florida STORET, Watershed Action Volunteers-WAV, et al.) will continue to be made available via the ATLAS but will not be updated.

Site Maintenance and Shared Web Services

All of the ATLAS Projects hosted at the UNIVERSITY share in the hardware, software, and other associated costs, such as new technology or components. The advantage of this system is reduced costs of ATLAS web-hosting for all Water ATLAS partners. This component includes:

Shared Site Software Maintenance: The UNIVERSITY will maintain all software necessary to ensure that the web interface is online and accessible to the public. Software licenses to be maintained as part of this task include: Microsoft SQL 2008 or higher, Microsoft Web Services, and .NET, ESRI, ArcGIS and ArcSDE, a web statistics software package, and other miscellaneous software.

Shared Site Hardware Maintenance: The UNIVERSITY will also provide hardware necessary to complete this task. Hardware requirements necessary to ensure that the ATLAS will be available to all users with reasonable access times and minimal downtime have been planned according to projected demands. However, these demands may change due to increased or decreased user demand and will be evaluated on a yearly basis. Currently, this task is accomplished by serving the ATLAS Web Interface from servers located at the UNIVERSITY. However, if necessary, the UNIVERSITY reserves the right to serve the ATLAS from servers not located at the UNIVERSITY.

Water ATLAS Application Maintenance: The UNIVERSITY is constantly in the process of improving, upgrading, and actively managing ATLAS Projects throughout the State of Florida. All of the ATLAS Projects hosted at the UNIVERSITY share in the new component development and component upgrades, as well as upgrades to web technology. This sharing of components and web technology leads to a reduced costs of ATLAS updates and program improvements for all ATLAS Partners.

Web Management and Statistics: The UNIVERSITY will function as Web Manager for the ATLAS. The UNIVERSITY will provide web usage statistics on a quarterly basis or when requested by the COUNTY. The UNIVERSITY currently uses Google Analytics for all web usage statistics.

Software Fixes and Upgrades: During the annual contract period, the UNIVERSITY will likely make modifications to existing functionality as part of contractual agreements with other ATLAS Project Partners. Whenever feasible, the UNIVERSITY will implement these changes to all ATLAS Projects at no additional charge to the COUNTY. The UNIVERSITY will notify the COUNTY by email when a change to the ATLAS is implemented and include the purpose and extent of the change.

Project Management: The UNIVERSITY will provide one or more staff and faculty members listed in this Agreement who will provide planning, direction, coordination, and control necessary for the efficient and effective management of the ATLAS. Project Management services will include travel to project meetings, travel to maintain staff proficiency, and travel to present information or findings regarding the ATLAS Project at water resource-related conferences.

BASIC LEVEL OF SERVICE DELIVERABLES

- Data Management: Maintenance of all data sources listed in Tables 1 and 2 for a period of one year.
- Site Maintenance: One year of site maintenance and web hosting, component upgrades as necessary.

- Project Management: One year of faculty and senior staff management of the ATLAS Project and ATLAS components, and tools for the COUNTY.
- Final Report: The report will summarize work effort, site usage, and upgrades to the Water ATLAS.

BASIC LEVEL OF SERVICES COST = \$30,300

TASK 2: STANDARD LEVEL OF SERVICES

UNIQUE DATA UPDATES

Seminole County has unique water quality data that will be managed under this task. These data cannot be automatically added as is the case for WIN or USGS. The datasets found in Table 3 are also updated more frequently and normally require individual actions by senior staff and faculty. This task includes both GIS and Data Team and Faculty costs. The task also includes quality assurance checks for data and data sources, and the preparation and update of metadata.

Table 3. Unique Datasets and Update Frequency

Data Set	Data Type	Update Frequency
SCPW_WEATHER	Parametric	Near Real-time
SEMCO_ASSESSMENT	Parametric	Varies
SEMCO_MACROINV	Parametric	Varies
SEMCO_PWHYDRO	Parametric	Varies
SEMCO_PWWQ	Parametric	Varies
SEMCO_PWWQYSI	Parametric	Near Real-time
FEMA 100-Year Flood Zone	GIS	When Available
Municipality Boundaries	GIS	Annually
Parks and Facilities	GIS	Annually
Color Aerials	GIS	When Available

Quality assurance and control efforts will be performed by the UNIVERSITY as part of all data update tasks to ensure that data are made available on the ATLAS and that questionable data values are intercepted and prevented from display. No data update task will be considered accomplished without the completion of this QA/QC procedure. Quarterly project reports will include statistics and information about all data updates in order for the COUNTY to verify that updates were performed as described. Data from “legacy” data sources (Florida STORET, Watershed Action Volunteers/WAV, et al.) will continue to be made available via the ATLAS but will not be updated.

WATER QUALITY AND LEVELS DATA MANAGEMENT SYSTEM SUPPORT

Seminole County relies on the use of the Water Atlas online data management tools to upload and process water quality data and to enter water level (e.g., lake level) data collected by COUNTY staff. COUNTY staff use a combination of desktop computer and tablet/mobile data collection platforms. The UNIVERSITY faculty and staff will continue to work with the COUNTY to perform enhancements to the WQDMS and Water Levels applications, and in particular to the Field Data Upload component, in order to accommodate the different types of data collection technology. Examples of these enhancements include but are not limited to: modification of web pages to improve usage using small-screen devices and cellular data access. Over time, additional modifications are likely to be required to adapt to emerging technologies that the COUNTY adopts to improve efficiency of their data collection processes. This task also provides time and other resources to address problems with the system and enhancements to application software associated with the Field Data

Upload. Finally, UNIVERSITY faculty and staff will assist Seminole COUNTY Staff in the use of this system and with data uploads when problems or emergencies arise.

CONTENT MANAGEMENT

The Standard Level of Service includes the work effort of a dedicated Content Manager who responds on a daily basis to inquiries made through the ATLAS. The Content Manager also manages the Content Management System which includes the Digital Library services and the current news and social media system. The Content Manager will also update other website content as required with information supplied by the COUNTY as a Standard Level of Service.

PRODUCT IMPROVEMENTS AND UPGRADES

The UNIVERSITY will continue the process of improving individual ATLAS Project applications and data update processes as part of a consolidated ATLAS application and data set structure. This effort will help standardize the ATLAS, improve quality control, improve navigation between current ATLAS websites, and reduce the work effort required to maintain existing ATLAS Projects. Work efforts required to accomplish this goal will be supported by individual projects as part of specific application update tasks paid by other project sponsors. Following this same approach, several of the tasks outlined in this Scope of Services will also benefit other Project Partners, including WQDMS improvements, Content Management System upgrades, homepage upgrades, upgrades to improve access by mobile device users, and updates to the mapping components. These services are funded by various Partners and eventually added to Standard ATLAS Partner websites and, when feasible, to Basic ATLAS Partner websites.

UNIQUE PROJECT MANAGEMENT AND TRAVEL

A UNIVERSITY faculty member (Shawn Landry) is assigned as Principal Investigator and a staff member is assigned as Co-Principal Investigator to this Standard Level Water Atlas Project. Three quarterly reports, a final report, meetings as needed, and full availability of the Co-PI and PI are provided to ensure that the Seminole Water Atlas fully meets the needs of the COUNTY Staff and citizens.

STANDARD LEVEL OF SERVICE TASK DELIVERABLES:

- Data Management: Maintenance of established automated data update tools and manual updates for all additional data sources listed in Table 3.
- Product Improvements and Upgrades: One year of improvements for existing and new Atlas components.
- Project Management: Principal Investigator and Co-Principal Investigator services including three quarterly reports, final report and meetings/visits as needed.
- Water Quality and Levels Data Management System Support: Enhancements and improvements to the existing data upload/entry systems to ensure that they meet the needs of COUNTY staff.

COST FOR STANDARD LEVEL OF SERVICES = \$35,169

ADVANCED LEVEL OF SERVICES

TASK 3: WIN UPLOAD ASSISTANCE

The UNIVERSITY will upload all appropriate physicochemical, hydrological, meteorological and biological data to FDEP (thence USEPA) Watershed Information Network (WIN) and Impaired Waters Rule (IWR) databases monthly. This task typically involves a review of FDEP WIN criteria for changes in data upload protocols and formatting, and consequent revision to Water Atlas database upload procedures.

As part of this work order, UNIVERSITY faculty and staff will send confirmation email to Seminole County Water Atlas Project Manager when data are uploaded to WIN and when FDEP staff confirm receipt of those data.

COST FOR WIN UPLOAD ASSISTANCE = \$5,095

TASK 4: COUNTY PROGRAM ADDITIONAL SUPPORT

Technology applications such as the ATLAS require updates, enhancements and reprogramming occasionally in order to continue to meet the needs of users. Enhancements and updates sponsored by other ATLAS funding agencies will be incorporated into the Seminole County Water Atlas as described in Task 2 above. However, the updates made available as part of Task 2 are determined based on the needs of the specific project funding agency and may not necessarily include enhancements that support Seminole County specific programs. If the COUNTY identifies specific enhancements and updates to the ATLAS that will meet specific program needs of the COUNTY and budgets allow, the UNIVERSITY will look at costs associated to meet those enhancements.

- Update Water Quality Trend Analysis:

The Water Quality Trends Page requires manual statistical analysis and quality assurance processes which involve additional staff effort. The current WQ Trends page includes data through the year 2022. The UNIVERSITY will run the Analyses once during the project period to produce the results of the trends through the year 2023. Quality assurance will be conducted to ensure that the results represent the data being used, which included only data meeting the same FDEP QAQC standards used by the IWR.

- Update Custom Water Quality Graphs:

The University created python scripts to generate water quality graphs for reporting purposes by County staff. Each year, at the beginning of December, the University will compile the available water quality data, run the python scripts to generate the graphs, and provide the graph images to the County for use in their reports. County staff will send trend events for use in the graphs to the University no later than November 15th.

COST FOR COUNTY PROGRAM ADDITIONAL SUPPORT=\$2,650

TASK 5: OPTIONAL ADDITIONAL WEBPAGE ENHANCEMENT PROJECTS

The County may request the University provide additional website enhancement projects as mutually agreed upon through a written scope and cost estimate. Additional enhancements to existing features, or new features, may be requested by the Seminole County Watershed Management Division Manager as needs are identified.

Table 3. Annual Cost Summary

TASK	ANNUAL COST
Task 1: Basic Level of Services	\$30,300
Data Updates	
Site Maintenance, Web Services, Project Management & Reports	
Task 2: Standard Level of Services	\$35,169
Unique Data Updates	
Product Improvements & Upgrades	

Unique Project Management & Support	
Task 3: WIN Upload Assistance	\$5,095
FDEP WIN & IWR Databases Uploads and QA-QC	
Task 4: County Program Additional Support	
Update Water Quality Trend Analysis	\$2,650
Total Annual Cost for the Seminole Water Atlas	\$73,214

The key research faculty/staff members from the UNIVERSITY that will be involved in this project include: Shawn Landry, Keith Bornhorst, Claude Kershaw, Ruth Costley, David Eilers, Jayden Mohacsi, Jennifer Baker, and Jason Scolaro.