

EXHIBIT A
Scope of Professional Services for
Water, Wastewater and Reclaimed Water Facilities Program Management

SECTION I: OBJECTIVES AND DESCRIPTION OF PROJECT

1.1 General

The Consultant shall provide continuing services for water, wastewater, and reclaimed water facilities program management to include projects of a specified nature listed herein. The work of a specified nature is described in “**Section III – Project List for Work of a Specified Nature.**” Final design services **will not be performed** under this contract. Furthermore, the Consultant **will not be eligible to compete for final design services** under a separate contract if the County determines that the Consultant’s program management services create a potential conflict of interest.

The selected Consultant shall be responsible for providing a variety of planning, engineering, and management services necessary to implement the County’s Capital Improvement Program (CIP) for water, wastewater, and reclaimed water facility improvements, as well as various projects necessary for facility management or utility operation, compliance, and optimization. The engineering services to be performed under this contract will generally be limited to program management services involving water and wastewater treatment facilities; reclaimed water storage and pumping facilities; and utility buildings for operations, laboratory, and equipment storage.

The Consultant shall have assembled a highly qualified technical team to provide project vision and direction based on their knowledge of industry trends and successful water, wastewater, and reclaimed water facility management, and their expertise regarding critical technical issues. The task of the team will be to provide a high-level understanding of facility planning and management and to quickly direct the County’s program toward long-term success. Skills and experience of the Consultant’s team members should include design (all disciplines) and operation of water, wastewater, and reclaimed water facilities; project delivery methods; regulatory compliance; green energy; energy conservation; biosolids; planning studies; value engineering; environmental management system implementation; capital improvement program management; utility management; utility operations and maintenance optimization; hydraulic modeling; automation; SCADA; HMI (programming and integration); water conservation; utility security; and expertise related to projects described in “Section III – Project List for Work of a Specified Nature”.

1.2 Background

Orange County Utilities currently operates three regional and multiple sub-regional water supply facilities; three regional wastewater facilities with a future fourth facility expected to be completed in 2023; and a number of other facilities. The Consultant will support ongoing operations and improvements at these existing facilities and will assist in the planning and implementation of new facilities.

Major projects that may require program management and technical support services with the next five years are listed below:

Avalon – Reclaimed Water Storage and Pumping Facility
Database System Integration
Eastern Operations Building
EWRF – Aerator Automation & Chemsan Installation
EWRF – FDEP DMR Management System
EWRF – Leachate Pretreatment or Flow Equalization
EWRF – Phase 6A Reclaimed Water Storage and Pumping Improvements
EWRF – Phase 6B Expansion and Improvements
ESA – Blending Facility Improvements
ESA – Phase II and Phase III Reclaimed Water Storage and Pumping Improvements
Hamlin Water Reclamation Facility Phase I (fka Southwest)
Hamlin Water Reclamation Facility Phase II (fka Southwest)
Lake Pickett – Reclaimed Water Storage and Pumping Facility
Miscellaneous Wastewater Plant Improvements
Miscellaneous Water Plant Improvements
NWRF – Phase 3B Expansion
Plan Reviews of Facilities
SWRF – Biogas Energy Improvements
SWRF – North Plant (WCII) Improvements
SWRF – Influent Pump Station Improvements
SWRF – Odor Control Improvements
SWRF – Phase 6A Improvements
SWRF – Phase 6B Improvements
SWRF – Pretreatment Structure Project
SWRF – South Plant (SSA) Improvements
Southwest Service Area Facility Improvements
Water Conserv II Transmission Main Booster Pump Station
Water Conserv II Land Acquisition at RIB Sites 1 & 10
Water Conserv II Reservoir
Water Conserv II Reclaimed Water Storage and Pumping Improvements
Water Reclamation Biosolids Improvements
Water Reclamation Electrical Improvements
Water Reclamation Hypochlorite Improvements
Water Reclamation Meter Improvements
Water Reclamation Operational Assistance
Water Reclamation SCADA/HMI Improvements
Western Regional Water Supply Facility Improvements
Western Service Area Facility Improvements
Western Service Area Facility Plans

1.3 Project Description

The project provides general consulting, planning, and program management services to assist the County in planning, managing, and operating existing and future water, wastewater, and reclaimed water facilities. Elements of these program management services may interact with other consulting efforts involved with the design of new or expanded facilities or other consulting efforts involved with program management for water resources; biosolids; automation; collection, distribution and transmission infrastructure; other system-wide programs; and specific projects. Consequently, services for this program will be delivered in a coordinated and holistic manner by understanding the entire utility and the impact of growth, costs, organizational culture, operational needs, on-going projects, public interest, legalities, energy conservation, environmental impacts, and industry trends.

1.4 Description of Professional Services

The primary goals of the program are to assist in the development of long-term plans for water, wastewater, and reclaimed water infrastructure improvements as well as the implementation of specific projects and/or programs to meet the needs of the utility. The program will include the following major elements.

- A. Planning Studies
- B. Capital Improvement Program Management
- C. Utility Management Services
- D. Operational Assistance
- E. Hydraulic Modeling
- F. Other Program Management Services

Each of these program elements will be delivered either through professional services generally defined below or through the implementation of specific projects in support of those identified as “projects of a specified nature”. The engineering services will consist of multiple task authorizations for the period of the contract.

SECTION II: SCOPE OF PROFESSIONAL SERVICES

To deliver the services and projects elements identified in Section I, the Consultant may be required to provide the professional services as outlined below.

A. Planning Studies

These services consist of various planning studies and activities necessary to evaluate and plan water, wastewater (including biosolids), and reclaimed water infrastructure to meet existing and future demands, while promoting the most effective, beneficial and sustainable use and conservation of the County’s resources. Services may include:

- Population and service area growth projections and performance of miscellaneous demographic related studies.
- Studies related to the expansion and improvement of the existing utilities infrastructure.
- Legislative and regulatory impact evaluations.
- Environmental studies and/or evaluations.

- Standards development.
- Wastewater disposal studies, wastewater reuse studies, and raw and finished water pumping, storage and blending studies.
- Studies related to the conversion of areas with septic tank sewage disposal and private well water supply to the County's centralized utility system.
- Develop site layout plans and perform site analysis for treatment and storage facilities.
- Evaluation of sites for new or expanded water, wastewater, and reclaimed water facilities including assistance with land acquisition.
- Evaluation of water, wastewater, effluent disposal and reclaimed water facilities, pump stations, and miscellaneous other utility system components.
- Comprehensive Performance Evaluations (CPE) of water and wastewater treatment facilities to establish hydraulic and treatment capacity and identify factors that lead to poor performance.
- Composite Correction Program (CCP) development to improve the performance of the treatment facilities and determine whether improvements will require operational changes, minor facility modifications, major facility modifications, or a combination of these.
- Piping corrosion analysis and alternate pipe material and coating system evaluations.
- Water and wastewater treatment plant capacity evaluation studies.
- Water and wastewater treatability, pilot plant design criteria, and small-scale treatment simulation programs.
- Pilot tests, operational tests, laboratory tests, and full-scale tests.
- Programs for evaluation of alternative methods of existing infrastructure rehabilitation.
- Engineering reports in support of financial studies and requirements.
- Attendance and facilitation of coordination workshops with the County, regulatory agencies, other local governments, and public and private entities.
- Data modeling and interpretation, hydraulic analysis, hydrogeological investigations, treatment process analysis, and other investigations necessary to identify water, wastewater and reclaimed water system improvements.
- Preparation of reports, presentations, and other documents and maps.
- Preparation of conceptual or preliminary design documents consisting of design criteria, drawings, outline specifications, or written descriptions of the project.
- Preparation of probable total project costs and project schedules.
- Energy audits, energy efficiency and recovery efficiency evaluations.
- Automation and process control evaluations and development of plans.
- Studies related to biosolids, solid waste, and leachate management.
- Water conservation studies, evaluations and technical support.

B. Capital Improvement Program Management Services

These services will consist of Capital Improvement Project (CIP) management services on an as-needed basis to retrofit and expand the County's water, wastewater, and reclaimed water systems.

The consultant shall assist and provide technical support to County staff in managing projects in order to assure efficient and effective project delivery through development of design criteria packages for design/build services or through coordination and oversight of design firms, contractors, and other consultants engaged by Orange County, including bidding, construction administration, and construction management assistance. Services will include assisting in the development of conceptual designs, project budgets, schedules, scopes, cost estimates and public presentations; review of plans, specifications and proposals; assist with contract negotiations; attend and conduct project meetings; provide assessments of claims and technical advice; prepare project documents including purchase requests, real estate work requests and change orders; monitor progress of design consultants and construction activities; assist County staff in assuring project schedules and budgets are met; and provide value engineering services and constructability reviews of designs prepared by other firms. Program management encompasses a board range of services. Specific services may include:

Program Management Services during the Planning and Design Phases:

- Assistance in the day-to-day coordination of programs, individual projects or portions of projects from planning and design through construction to assure efficient and effective project delivery.
- Coordination and oversight of design firms and other consultants engaged by the County. Services may include assisting in the development of project budgets, schedules, scopes of service for design, requests for proposals, cost estimates, public presentations, and quality assurance/quality control.
- Assist staff in project management including construction project scheduling assistance during progress meetings establishing baseline project schedules and monthly schedule updates. May also include plan review and QA/QC for compliance with OCU Standards. Includes preparation of procurement documents, BCC items, and Power Point presentations.
- Development of performance requirements for request for proposals (RFPs) to obtain the services of consultants and contractors to design and install system modifications and improvements.
- Performance tracking systems for task completion and progress schedules including resources expenditures, resource allocation, and staffing.
- Monitor progress of design consultants and construction activities and assist Utilities staff in assuring project schedules and budgets are met.
- Technical advice, negotiation assistance, and claims assessment.
- Review of plans and specifications, reports, and engineering proposals.
- Conduct workshops with the County as needed to further define project requirements.
- Preparation of right-of-way maps, easements, and legal descriptions for land acquisitions.
- Development of design criteria packages for constructing facilities under the design-build delivery method, including preparation of automation and control system documents, process control instrumentation, and computer based electronic on-line operations and maintenance manuals.
- Prepare conceptual design documents consisting of final design criteria, 10% preliminary drawings, outline specifications, and written descriptions of the project.

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- Assistance during contract negotiations and attend, conduct, and facilitate project meetings.
- Preparation of project documents including purchase requests, real estate work requests, and change orders.

Program Management Services during the Bidding Phase:

- Coordinate the issuance of the projects; assist in preparing the advertisement, attend and assist at pre-bid conferences, conduct pre-bid site visits, prepare minutes, respond to questions from bidders, and assist in preparing addenda to bidders as needed for clarification.
- After bids are received, attend bid openings, assist with evaluation of bids, check the Contractor's references, prepare certified bid tabulations, and make recommendations of award for the construction contracts to the County's representative. If necessary, provide services associated with assisting the County in the review and evaluation of any bid protests received.

Program Management Services during the Construction Phase:

- After award of each construction contract for the projects, the Consultant may provide general engineering services during construction including: site visits, attendance at construction conferences, preparation of conformed documents, review of shop drawings, review of test results, issuance of clarifications, review of pay requests, review of project schedules, review of change orders, claims assessments, start-up advice, performance testing, substantial and final construction inspections, and preparation of record drawings.
- Conduct pre-construction meetings with the Contractors, County and other affected parties prior to beginning construction. Provide minutes of meetings and agendas. Prepare and distribute conformed contract documents to all parties at least 48 hours prior to pre-construction meetings.
- Provide full time resident project representatives (RPR) as needed to perform site inspections, certify work, inspect deliveries, conduct monthly progress meetings and prepare meeting minutes. A full time clerk may also be required to assist the RPR(s) and the County inspection staff to file and manage field offices.
- At the option of the County, the County may elect to provide its own full time resident project representative services. In this case the Consultant will visit the work site periodically to observe the compliance with the Contract Documents and inform the County of observed deficiencies. Exact number of site visits will be determined by the County before the construction work begins.
- Review shop drawings, submittals, material samples, and laboratory, shop and test reports submitted by the Contractor for compliance with the design requirements and recommend acceptance/denial to the County's representative.
- Review and report to the County claims submitted by the Contractor. Review, prepare, and submit proposed contract change orders as required. Provide assistance in claims negotiations and dispute resolution.
- Determine the acceptability of substitute materials and equipment proposed by the Contractor.

- Issue necessary clarifications and interpretations of the contract documents; act as initial interpreter of the requirements of the contract documents and judge of the acceptability of the work there under, and assist the County in making decisions on all claims of the County and the Contractor relating to the acceptability of the work or the interpretation of the requirements of the contract documents pertaining to the execution and progress of the work.
- Provide sketches and drawings to resolve actual field conflicts encountered and provide consultation and advice during the construction process, as requested by the County.
 - Hold monthly progress meetings with the Contractor and the County and provide minutes of the meetings. Review and monitor Contractor's construction schedule and advise County as to progress and problems affecting such progress.
 - Observe/review results of performance and other tests and inspections executed, as required by the contract, for all work done by the Contractor and provide written opinions to the County representative.
 - Collect and verify all as-built information from the County inspector and Contractor as needed to prepare record drawings. Provide sealed hard copies, one reproducible copy, and one electronic copy of the record drawings to the County's representative (in electronic format acceptable to the County).
 - Conduct substantial and final inspections of completed facilities. Provide the County's representative with punch lists of items checked and whether they were addressed during a second inspection. After the Contractor has fulfilled his obligations, the Consultant shall recommend to the County final acceptance of the projects. Following the County's final acceptance, the Consultant shall review the final pay requests and recommend the amount of the final payments.
 - Provide project certifications to all regulatory agencies certifying that the work was completed in accordance with all regulatory permits and/or other requirements and obtain all partial and/or complete clearances to place the constructed facilities in service.

C. Utility Management Services

Services under this element may encompass process benchmarking, competitive assessments, core business function analysis, business planning and documentation, and development of management procedures, as well as other critical issues such as security and safety. Specific services may include:

- Benchmarking and development of performance measure.
- Development of standard procedures and standards.
- Identification of optimal workflow processes.
- Development of optimization studies and competitive utility assessments.
- Assessments of facilities and development of plans to improve security and assess vulnerability, including security systems, site access monitoring and control, management practices, surveillance requirements, physical security, communication of security information, responsibilities for monitoring the security system.
- Development of performance requirements for request for proposals (RFPs) to obtain the services of contractors to design and install security system modifications intended to improve County's response to security issues.
- Assistance in coordinating with governmental agencies and securing federal and state grants.

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- Data analysis, recommendations for improvements to resolve utility system deficiencies, and reporting. This task would also include updates for previous studies, reports, and master plans.
- Technical assistance in the development review process.

D. Operational Assistance

Operational assistance services encompass a broad range of services, including permitting, preparation of operation and maintenance manuals, and regulatory monitoring/reporting services for utility projects. In addition, services may include evaluation and advice on the operation, maintenance, optimization, and management of treatment, storage, and pumping facilities. Specific services may include:

- Development of programs for predictive/preventative maintenance, quality control, and operational safety.
- Development of inventories of physical assets, assessments of the condition of existing facilities, and prioritization of rehabilitation and replacement.
- Energy audits, activity based accounting, optimization of operations, and develop and document standard operational procedures.
- Preparation of Capacity Analysis Reports.
- Development of Operation and Maintenance (O&M) manuals for water and wastewater facilities, including web-based manuals.
- Technical advice and consulting regarding facilities operational issues.
- Sampling, laboratory analysis, and data interpretation for water, wastewater, and reclaimed water.
- Water and wastewater quality monitoring program development.
- Start-up assistance and training.
- Provide Operations and Maintenance (O&M) support including operational training, system start-up and testing, and electronic and on-line operation and maintenance manuals.
- Prepare or provide technical assistance in the preparation of O&M Performance Reports
- Staffing evaluations and recommendations on matters relating to regulatory compliance issues and O&M efficiency initiatives.
- Conduct efficiency evaluations.
- Strategic planning and plan implementation services.

E. Hydraulic Modeling

Assistance for this task will consist of technical services as needed to support the County's hydraulic modeling system. A wide range of support activities may be needed including data collection, entry, and analysis; growth projections; mapping; system optimization; database/data model design and maintenance; and training. Specific services that may be required include:

- Assistance in the collection of data for utility systems including field data collection to support hydraulic modeling.
- Technical assistance for hydraulic modeling.
- Data calibration for model simulations to reflect field conditions.
- Optimization analysis for hydraulic systems.
- Technical assistance for water quality modeling.

F. Other Program Management Services

Program management encompasses a broad range of services. Specific services may include:

- Assist County staff in obtaining permits and complying with local, State and
- Federal regulatory requirements. This includes assistance for environmental permitting, compliance monitoring, Florida Department of Environmental Protection (FDEP) permitting, Total Maximum Daily Loads (TMDL) compliance, National Pollutant Discharge Elimination System (NPDES) permitting, Environmental Resource Permits (ERP), and other applicable regulatory permits and requirements needed in association with water, wastewater, and reclaimed water facilities.
- Construction permitting for buildings, rights-of-way, American Disability Act (ADA), Federal Aviation Administration (FAA), Florida Department of Transportation (FDOT), and other local, state, and federal regulatory agencies.
- Preparation of reports, presentations, and other documents and maps.
- Mapping product services for presentations and other purposes of graphical data display.
- Public meeting and public notification assistance for planning, organizing, and attending public meetings including flyer and door hanger preparation, and distribution/mailing. Also provide public information officer (PIO) services.
- Identify and analyze requirements of governmental authorities having jurisdiction to approve designs and participate in consultation with such authorities.
- Prepare reports presenting alternative solutions available to the County with the Consultant's findings and recommendations, schematic layouts, conceptual design criteria, permitting requirements, schedules, and conceptual opinions of probable costs.
- Preparation of supplemental data and services as needed in support of the projects including modeling, geotechnical, surveying, environmental assessment and testing services, and other specialty engineering services.
- Participate in workshops with the County or the County's consultants in order to define project requirements and collect data.
- Review the layout of the existing facilities, operational data, studies, reports, agreements, and drawings pertaining to the projects.
- Building infrastructure services including building site selection, space planning, architectural design advice, cost estimates, scheduling, and oversight of architectural design and construction.
- Sampling, laboratory analysis, and data interpretation for water, wastewater and reclaimed water.
- Assisting County staff in developing inter-local agreements, reviewing and drafting ordinances, and participating in public meetings and hearings.
- Assistance with development of an institutional framework for addressing regional issues.
- Assist County staff in developing, coordinating, and tracking of grant funding.
- Preparation of supplemental data and services as needed in support of the projects including geotechnical, surveying, three-dimensional laser scanning, environmental assessment and testing services, and other specialty engineering services as needed.

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- Other related services needed to properly manage a CIP project from planning through construction.
- Assistance with establishing standards, procedures and processes.
- Surveying assistance for determining GPS coordinates for locating existing utility infrastructure, including survey, aerial photogrammetry, survey methodology, and assistance with CAD standards.
 - Trending analysis and growth projections through analyzing existing water demands, reclaimed water demands, wastewater flows, solid waste collection, and population projections to establish existing trends and project future growth.
 - Services relative to biosolids planning, and plan implementation.
 - Services relative to Automation implementation, SCADA, HMI programming and integration.
 - Environmental studies, assessments, evaluations and surveys.

SECTION III: PROJECT LIST FOR WORK OF A SPECIFIED NATURE

Work of specified nature and specific assignments that may be performed by the consultant under this solicitation are described below. These assignments may involve projects at any of the County's existing and planned water, wastewater, and reuse facilities. A detailed scope of work for each project will be prepared by the County and the consultant on a project-by-project basis. Although a project may be listed in this scope of services, the County reserves the right to solicit proposals for any project and award a contract for consulting services for such project separate and apart from the contract entered into pursuant to this RFP.

3.1 Master Plan Update

The plan will consider the facilities and capital improvement projects outlined in OCU's Water, Wastewater, and Reclaimed Water Master Plan and identify and recommend future system improvements. The report will include water, wastewater and reclaimed water elements for short- and long-term planning, development of operating protocols, evaluation of future capacity requirements, evaluation of potable and reclaimed water quality requirements, and evaluation of infrastructure needs including treatment, storage, pumping, transmission, distribution, disposal, interconnections, wellfields, and automation and controls.

3.2 Facility Plans

Facility plans will focus on major treatment and pumping facilities to define necessary improvements for the next 10-20 years. The planning will address existing conditions, including an evaluation of processes and equipment and a determination of performance limiting factors. Future conditions will consider growth, regulatory considerations, and integration of water resources. Innovative and alternate treatment processes will be identified and used in an evaluation of viable expansion and improvement alternatives. Capital and operating costs of viable alternative will be determined and used with non-cost considerations to rank the various alternatives. Based on workshops with County staff, the most viable alternatives will be selected and a phased implementation plan will be developed for each facility. Included in facility planning are comprehensive performance evaluations (CPE), and composite correction programs (CCP).

3.3 Capital Improvement Program Management

Capital Improvement Project (CIP) management services to retrofit and expand the County's water, wastewater, and reclaimed water facilities. Services will be provided for specific CIP projects in order to assure efficient and effective project delivery. Services may include planning; conceptual design; development of design criteria packages for design/build services or construction manager at risk; coordination and oversight of design firms, contractors, and other consultants engaged by Orange County; bidding, construction administration, and construction management assistance.

3.4 Environmental Management System

Develop and implement an Environmental Management System (EMS) to manage environmental impacts of the utility operations and provide a structured framework to support continual improvement in environmental management of the utility in conformance with U.S. Environmental Protection Agency and other regulatory guidelines.

3.5 Utility Security

Assessments of facilities and development of plans to improve security and assess vulnerability relating to destruction of utility assets by natural causes or man-made causes including vandalism, terrorism, chemical agent attacks, biological agent attacks and radiological agent attacks. The consultant will assess security system effectiveness including site access monitoring and control requirements and methodology, security management practices, delivery of supplies and chemicals to the selected existing facilities, surveillance requirements, physical security, communication of security information, and responsibilities for monitoring the security system. Recommend physical security improvements with conceptual pricing, and performance standards and provide operational procedure recommendations to manage or reduce risks. Prepare or revise emergency response plans to incorporate the vulnerability assessment results. Prepare maintenance and support information, and operator training for facilities and assistance in preparing operating procedures to respond to threats and intrusions. The consultant will develop performance requirements for request for proposals (RFPs) to obtain the services of contractors to design and install security system modifications intended to improve County response to security issues. Physical improvements, which may be part of contractor installation, include barriers, lighting, access control, intrusion detection, and surveillance and communications systems. The consultant may prepare design criteria for security improvements and provide oversight or management services during installation of security equipment by the contractors.

3.6 Building Infrastructure Projects

OCU is in need of a number of building projects including new laboratory space at the Eastern Regional Water Supply Facility (ERWSF) and additional space for other utility operations at other operations and maintenance facilities. Services may include physical space planning, cost estimates, green building, defining building project objectives, architectural design advice, assistance in procuring architectural design and construction services, monitoring project deliverables, and oversight of building construction.

3.7 Operational Assistance

Evaluate and advise on the operation, maintenance, optimization and management of the wastewater treatment facilities, reclaimed water and water supply facilities

. Such services may include development of inventories of physical assets, assessments of the condition of existing facilities, and prioritization of rehabilitation and replacement. The consultant will develop programs for predictive/preventative maintenance, quality control, and operational safety. Perform energy audits, activity based accounting, optimization of operations, develop and document standard operational procedures, and provide start-up assistance. The consultant may assist in the development of a system for management of record drawings and operation and maintenance manuals using computerized and/or web-based systems. The consultant will provide construction inspection and oversight assistance.

3.8 Hydraulic Model Update

Prepare an engineering report and subsequent calibrated hydraulic model addressing the reclaimed water operating protocols, system operational deficiencies and evaluation of reclaimed water infrastructure needs such as storage, pumping, transmission, distribution, interconnections, and controls for the Southern Reclaimed Water Service Area. Scenarios shall be developed to address varying demand conditions during residential peak irrigation periods and storage pond filling periods. The report and model shall address the existing and projected reclaimed water demands for a 20-year planning period. The hydraulic model shall be used to determine the location, type, and operating mode of flow control and pressure sustaining facilities. Similar efforts for other service areas may also be required. Perform other hydraulic modeling tasks as needed.

3.9 Confirmation Testing

Develop, procure, conduct and/or construct confirmation tests, as needed, to evaluate existing facilities, evaluate alternatives, or determine feasibility of proposed improvements. Confirmation tests include computer models and/or pilot tests, operational tests, laboratory tests, and full-scale tests. If construction is required as part of confirmation testing then a minimum of three (3) quotations will be submitted for any construction with a value in excess of the County's minimum threshold for receipt of quotations.

3.10 Three-Dimensional Surveys

Conduct three-dimensional (3-D) laser scanning of existing water and wastewater treatment facilities to facilitate the creation of accurate facility drawings and document existing site conditions.

3.11 Value Engineering and Constructability Reviews

Value engineering services and constructability reviews of water and wastewater facility designs prepared by other firms. Conduct workshops with Utility staff, technical advisors, and construction experts to review construction documents and make recommendations for more effective and economical design alternatives and construction techniques and sequences.

3.12 Construction Management Tools

Development of tools to assist the utility construction management process such as correspondence tools for electronic daily logs, memorandums and letters, field order, change order, shop drawing or pay request tracking; and photograph capture and attribution.

3.13 Field-based GPS Applications

Development of field data collection tools and protocols to be used for the gathering of information pertaining to new and existing utility assets. The tools include coordinate acquisition, correction and verification using GPS. Applications typically include customized search tools; customized attribute collection forms; industry standard symbology; and an attribute reporting tool for the identification of assets.

3.14 Construction Administration and Technical Support

Provide construction management and technical support services such as scheduling, field support and administration, construction inspection, change order review and cost controls.