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Scope of Services

Indian River County Department of Utility Services

AWIA RRA and ERP Update Services

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Background

Arcadis U.S., Inc. (Arcadis) is pleased to present the Indian River County Department of Utility Services (Department) with this Scope of Services to support the Department in completing the America's Water Infrastructure Act of 2018 (AWIA) required 5-year review, update, and certification of their current Risk and Resilience Assessment (RRA) and Emergency Response Plan (ERP). Arcadis proposes to provide professional engineering and technical services related to the review and update of the Department's RRA and ERP in compliance with requirements of the AWIA (Safe Drinking Water Act [SDWA] Section 1433) 5-year update and certification. The Department must review and update, as needed, its RRA and certify compliance with SDWA Section 1433 by March 31, 2025, and its ERP by September 30, 2025, to the U.S. Environmental Protection Agency (USEPA).

The primary objectives of this project include 1) Update the Department's Water RRA and address any gaps that may have been present in the 2020 cycle or any aspect that may have changed internally or regulatory-wise since the 2020 cycle; and 2) Produce an ERP that incorporates the Department's existing plans and procedures and aligns with the Indian River County Emergency Operations Plan (EOP) and other applicable local documents. In addition, an objective of this project is to train and impart knowledge throughout the RRA and ERP update process for the County to undertake, maintain, and update these documents on a regular basis, including compliance with the 5-year review, update and certification requirements to the USEPA. This includes continuous identification, selection, implementation, and tracking of mitigation measures to demonstrate progress in the event of a regulatory audit by USEPA.

Section 1433(a) of the SDWA as amended by section 2013 of the AWIA outlines the requirements for RRAs and ERPs as provided below (84 FR 11536).

AWIA Requirements for Community Water System RRAs and ERPs

"*Each community water system serving a population greater than 3,300 persons must assess the risks to, and resilience of, its system. Such an assessment must include—*

(1) the risk to the system from malevolent acts and natural hazards;

(2) the resilience of the pipes and constructed conveyances, physical barriers, source water, water collection and intake, pretreatment, treatment, storage and distribution facilities, electronic, computer, or other automated systems (including the security of such systems) which are utilized by the system;

(3) the monitoring practices of the system;

(4) the financial infrastructure of the system;

(5) the use, storage, or handling of various chemicals by the system; and

(6) the operation and maintenance of the system.

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AWIA Requirements for Community Water System RRAs and ERPs

The assessment may also include an evaluation of capital and operational needs for risk and resilience management for the system.

To assist utilities, the AWIA directs the EPA to provide baseline information on malevolent acts of relevance to community water systems no later than August 1, 2019. This information must include consideration of acts that may—

(1) substantially disrupt the ability of the system to provide a safe and reliable supply of drinking water; or

(2) otherwise, present significant public health or economic concerns to the community served by the system."

No later than six months after certifying completion of its risk and resilience assessment, each system must prepare or revise, where necessary, an emergency response plan that incorporates the findings of the assessment. The plan shall include—

(1) strategies and resources to improve the resilience of the system, including the physical security and cybersecurity of the system;

(2) plans and procedures that can be implemented, and identification of equipment that can be utilized, in the event of a malevolent act or natural hazard that threatens the ability of the community water system to deliver safe drinking water;

(3) actions, procedures, and equipment which can obviate or significantly lessen the impact of a malevolent act or natural hazard on the public health and the safety and supply of drinking water provided to communities and individuals, including the development of alternative source water options, relocation of water intakes, and construction of flood protection barriers; and (4) strategies that can be used to aid in the detection of malevolent acts or natural hazards that threaten the security or resilience of the system.Community water systems must, to the extent possible, coordinate with local emergency planning committees established under the Emergency Planning and Community Right-To-Know Act of 1986 (42 U.S.C. 11001 et seq.) when preparing or revising a risk and resilience assessment or emergency response plan under the AWIA. Further, systems must maintain a copy of the assessment and emergency response plan (including any revised assessment or plan) for five years after certifying the plan to the EPA."

Per AWIA requirements, the Department is considered a large community water system (serves 100,000 people or more). As required for compliance with AWIA regulations, an all-hazards approach will be followed, and the RRA and ERP updates will build upon and expand work conducted by the Department for the inaugural cycle of AWIA in 2019-2020. For this cycle of compliance, Arcadis will validate existing risk model data and leverage our knowledge of current regulatory requirements to facilitate discussions and continue improving the Department resilience. This will include consideration of resilience and mitigation measures for the water system water treatment plants, pipes, and infrastructure, monitoring and cybersecurity, financial infrastructure, use and management of chemicals, operation and maintenance, hydrologic changes, organizational capital and finance elements, and relevant hazards and threats. The Department is also updating its ERP and key RRA information will be carried forward regarding water system risks, hazards, threats, mitigation measures, and cybersecurity in consideration of excluding secure information categorized based on a need-to-know basis.

As part of the update, Arcadis will follow revised and new versions of USEPA and American Water Works Association (AWWA) guidance including the J100-21 standard and associated operational guide, Baseline

Malevolent Threat Guidance, cybersecurity tool and guidance, and USEPA Large System ERP template. In recent months, the USEPA has prioritized enforcement of all aspects of a compliant RRA and ERP, including onsite inspections of documents and mitigation measure progress and tracking. As part of this project, Arcadis will ensure the Department's RRA and ERP incorporate new and existing elements in detail as part of a robust program to ensure USEPA compliance and inspection success. In addition, as the project progresses, Arcadis will note and convey recommended mitigation measures, including those that are inexpensive and can be completed by the Department prior to completion of RRA risk estimates, that can either reduce risks and/or increase resilience. Arcadis proposes to complete this project as outlined in the tasks below.

Scope of Work

Task 1 – Project Management and Kickoff Meeting

Project management effort includes Arcadis team staffing, health & safety plan, project management plan, invoicing, progress reports, budget control, and schedule management. The Arcadis team will issue monthly invoices with progress and schedule reports in accordance with the terms of the Agreement for the duration of the project. The Arcadis team will schedule and facilitate up to fourteen, one-hour virtual monthly project status meetings with the Department. Meeting summaries will be issued after each meeting, documenting progress, discussions and decisions, next steps, and action items.

Arcadis will conduct a one-hour kickoff meeting via Microsoft Teams within two weeks from notice to proceed (NTP) to review project scope, schedule, key coordination requirements with the Department and associated stakeholders, and next steps.

Arcadis understands and recognizes the importance of maintaining a strict level of confidentiality in these services for development of the RRA and ERP. We will implement the necessary project management controls, such as secure data/information storage/transfer protocols to staff acknowledgement of confidentiality requirements.

Deliverables:

- Monthly Invoices
- Monthly Progress and Schedule Reports
- Fourteen Project Status Meeting Summaries
- Detailed baseline project schedule Gnatt Chart
- Kickoff Meeting PowerPoint Slides

Task 2 – Risk and Resilience Assessment

Task 2.1 – J100 Steps, Gap Analysis, and Data Needs Workshop

Arcadis will facilitate an in-person/remote hybrid, three-hour RRA Gap Analysis and Data Needs Workshop in collaboration with Department staff and select stakeholders. A preliminary list of needs required to complete the review and update (including new elements, hazard types, and mitigation measures based on updated methodology and guidelines) of the RRA will be provided to the Department prior to this workshop.

The Gap Analysis and Data Needs Workshop will be designed to accomplish the following:

- Provide an overview of the revised AWWA RRA J100-21 methodology and operational guide, other new and updated related industry standard guidance, and updated USEPA requirements and guidance for the RRA.
- Identify and clarify roles and responsibilities of the Arcadis team, Department RRA team, and key stakeholders.
- Review previous RRA (2020) assumptions, details, and results for water system mission critical assets, threats, and hazards with associated likelihood, consequence analysis, vulnerability analysis, risk analysis, critical customers, and mitigation measures.
- Identify, verify, and obtain information regarding assessment components that require updating, addition, and/or enhancement, including consideration of updated standards and guidance discussed in the RRA overview.
- Review a data needs list including, but not limited to existing plans, policies, procedures, as-built design drawings, Geographical Information System (GIS) shapefiles and area maps, previous assessments, after-action/lessons learned exercise and incident reports, asset replacement costs, facility-specific retrofits and upgrades, monitoring capabilities, master plans, asset management programs, and coordinate hydraulic modeling needs with the Department's hydraulic modeling consultant (KMAC Consulting) to obtain specific baseline and risk scenario consequence information.
- Review existing and planned mitigation options and CIP aspects to be incorporated into the analysis.

Deliverables:

1. Workshop PowerPoint slides and materials
2. Preliminary and Refined Data Needs List
3. Review Workshop summary of key highlights and decisions

Task 2.2 – Cyber Workshop and Assessment

A two-hour in person/remote Cyber Workshop and up to two, two-hour virtual meetings will be conducted with applicable Department staff, stakeholders, and the Department's Industrial Controls Systems (ICS) subconsultant (Grey Matter Systems) to review and collaborate on completion of the Information Technology (IT) and Operational Technology (OT) cybersecurity assessment portion of the RRA. The IT cybersecurity assessment will include use of the updated AWWA cybersecurity tool and guidance and an Arcadis cybersecurity questionnaire in the two-hour Cyber Workshop with applicable County and Department IT staff . to evaluate IT capabilities, practices, vulnerabilities, potential security breach consequences, and potential IT cyber mitigation measures as required in the RRA.

The Cyber Workshop will focus on accomplishing the following:

- Review existing IT practices
- Discuss existing IT critical system vulnerabilities
- Complete the AWWA Cyber Security Tool with applicable County and Department staff
- Identify IT cybersecurity potential mitigation measures and enhancements.

An additional two-hour virtual meeting will be conducted to review and verify results of the IT cybersecurity assessment and potential mitigation measures proposed in the RRA.

The Department is currently completing a major ICS Network project that emphasizes cybersecurity enhancements to address cybersecurity identified OT system vulnerabilities with their subconsultant Grey Matter Solutions. This project is nearing completion of the design phase. Arcadis will review and evaluate ICS design

submittals for cybersecurity enhancements to validate proposed improvements adequately address OT system vulnerabilities. This review and assessment will be included in the RRA report as a technical memorandum. Review and evaluation results and any recommended cybersecurity design enhancements will be included in the memorandum and proposed mitigation measures associated with RRA overall cybersecurity assessment. This memorandum will be submitted to the Department for review and comment prior to conducting a two-hour virtual meeting with applicable County and Department staff to review results of the OT portion of the cybersecurity assessment. Adjustments to the memorandum will be included in a final memorandum for inclusion in an RRA report Appendix.

Deliverables:

1. IT Cyber Workshop PowerPoint slides and materials
2. Workshop summary of key highlights and decisions
3. AWWA Cyber Security Tool Results
4. ICS Network cybersecurity design review and validation technical memorandum
5. Two, two-hour virtual meetings and summaries

Task 2.3 – J100 Steps: Assets and Threats Workshop

Arcadis will provide subject matter expertise for updating the RRA and approach implementation, including internal and external stakeholder input by staff and leadership. Arcadis will update, enhance, and address any gaps in the existing 2020 RRA following updated J100-21 methodology and operational guidance based on required updates, elements, and overall approach identified in the Gap Analysis and Data Needs Workshop in Task 2.1. Once the Arcadis team has received and reviewed the documentation provided in the Data Needs List, an in-person, three-hour Asset and Threat Workshop will be scheduled with Department staff and appropriate stakeholders. This workshop will be designed to collaborate with Department staff to learn the J100 Steps 1 and 2, Asset and Threat Characterization, respectfully, and focus on accomplishing the following:

- Determine water system mission criteria to serve as an assessment baseline.
- Review, prioritize, and select mission-critical assets for quantitative analysis.
- Gather input related to critical asset dependencies, redundancies and workarounds, emergency connections, back-up resources, upgrades, capacities, critical customers served, service population served, existing and planned mitigation, and other pertinent details.
- Review historical threats and impacts, identify potential current and future threats and hazards
- Review and select applicable threats and hazards for malevolent acts, natural hazards, dependency hazards, accidental hazards, and proximity threats to assess in the quantitative analysis.
- Identify significant threats and hazards applicable to each critical asset to be carried on in the quantitative analysis [Threat-Asset Pairs (TAPs)].

Deliverables:

1. Workshop PowerPoint slides and materials
2. Workshop summary of key highlights and decisions
3. TAP matrix for quantitative analysis in the RRA; Arcadis will quantitatively assess up to 250 TAPs in the RRA for cost estimating purposes.

Task 2.4 – Site Visits

Three Arcadis Team will conduct a five-day consecutive onsite visit of selected mission-critical and representative assets, physical and cyber related security measures, assess new and emerging hazards, and conduct staff and

leadership interviews in coordination with the Department, as identified in Task 2.1. Site visit field notes and observations will be noted in addition to any updates to physical, operational, and/or cyber vulnerabilities associated with critical assets. A Facility Site Visit Summary for each location will be provided with the key findings, observations, site photographs, and other significant information in an Appendix of the RRA.

Deliverables:

1. Facility Site Visit Summaries

Task 2.5 – J100 Steps: Consequence and Vulnerability Workshop

An in person, three-hour Consequence and Vulnerability Workshop will be completed to discuss and collect consequence and vulnerability data relating to the TAPs selected for quantitative analysis in the RRA. The workshop will be designed to collaborate with Department staff to learn the J100 Steps 3 and 4, Consequence and Vulnerability Analysis, respectfully, and expand on information collected in Tasks 2.1, 2.2, 2.3, and 2.4. TAP worst case reasonable consequence scenarios and associated vulnerabilities will be discussed, including criteria, uncertainties, and assumptions associated with consequences and vulnerabilities for risk analysis calculations. Arcadis will also leverage data and information for the RRA with available local resource information, studies, plans, and Department projects supported by Arcadis and/or available online.

Deliverables:

1. Workshop PowerPoint slides and materials
2. Workshop summary of key worst case scenario highlights and decisions

Task 2.6 – J100 Steps: Risk Analysis Results and Mitigation Planning Workshop

Arcadis will complete J100 Steps 6 and 7, Threat Likelihood and Risk and Resilience Analysis, respectively of the RRA using data and calculations in alignment with the J100-21 standard. RRA calculations will be completed using the Arcadis Risk Model/PowerBI Tool. Arcadis will then facilitate an in-person, three-hour RRA Results and Mitigation Workshop in collaboration with Department staff and select stakeholders. The Results and Mitigation Workshop will be designed to collaborate with Department staff to learn the J100 Steps 6, 7, and 8 (Risk and Resilience Management) to accomplish the following:

- Review and adjust, as needed, RRA steps and assumptions.
- Review and adjust, as needed, Risk and Resilience Analysis results.
- Identify current and ongoing mitigation measures applicable to the RRA (CIP, O&M, Procedural and Standard Operating Procedures, Programmatic, and County mitigation planning).
- Identify additional and recommended mitigation measures that can reduce risk and/or increase resilience as applicable to the RRA.
- Gain consensus on prioritization, timeframes, ranking categories, and funding options identified for mitigation measure implementation and tracking section of the RRA to meet AWIA requirements and current USEPA expectations in the event of a compliance and inspection audit.

Deliverables:

1. Workshop PowerPoint slides and materials
2. Workshop summary of key highlights and decisions

Task 2.7 – Draft and Final RRA Report

A RRA report will be developed and include updates and enhancements to 2020 RRA work, assumptions, and details associated with each step of the J100 RRA methodology. The cybersecurity analysis will be included in detail in addition to results using the new AWWA Cybersecurity Tool and guidance for IT and review and verification of OT system cybersecurity designs. Updated and enhanced consequence scenarios for current, emerging, and new threats and hazards will be included with impact estimates for each threat-asset pair included in the RRA. Arcadis will include a certification page signed by the Project Manager and Technical Lead in the RRA regarding compliance with AWIA requirements.

As noted above, the RRA update will account for completed mitigation measures in updated estimates for consequence and vulnerability to account for mitigation benefits and to track and demonstrate mitigation progress as expected by USEPA. This includes completed mitigation measures noted and conveyed to the Department by Arcadis as the project progresses (these mitigation measures will be documented and tracked as complete in the RRA report). Current, ongoing, and new mitigation measures identified in coordination with the Department will be included in an implementation and tracking plan that includes prioritization categories and ranking, timeframes, and potential funding sources such as qualifying agency grant funding mechanisms and/or State Revolving Loan Funds (for CIP projects). Arcadis will include a high-level cost benefit analysis for up to 15 CIP mitigation measures to further assess risk reduction impact as related to potential implementation cost for selection, ranking, and prioritization purposes to optimize Department resources regarding implementation timeframes based on risk-based reduction criteria. Arcadis will provide a draft RRA, using the Arcadis RRA report template, for submittal to the Department for a three-week review and comment period. A final, updated, and enhanced RRA report addressing Department comments will be submitted for approval by the Department. The Department will be responsible for certification of completion of the updated RRA to USEPA. Following completion of the Final RRA, Arcadis will facilitate two, one and a half-hour virtual training sessions with key Department staff regarding use and update of the Risk Model/PowerBI Tool used for quantitative calculations and analyses in the RRA. Prior to these training sessions, Arcadis will provide Department staff with a Risk Model/PowerBI Tool user's guide and pre-recorded instructional video.

Deliverables:

1. Electronic Draft RRA report
2. Electronic Final RRA report
3. Risk Model (Excel File) and Power BI Tool files

Task 3 – Emergency Response Plan

The Arcadis team will integrate the National Incident Management System (NIMS), Incident Command System (ICS), and use tested and current water sector and emergency preparedness and response plan guidelines, tools, and resources to assure local, state, and federal laws and standards are followed. The plan will be consistent with the all-hazards approach and standards established by Federal Emergency Management Agency (FEMA) and Department of Homeland Security (DHS) including the National Response Framework (NRF). The Arcadis team will follow and reference industry standards and guidance, including but not limited to:

- USEPA Office of Water, Community Water System Emergency Response Plan Template and Instructions (2019)
- AWWA M19 Emergency Planning for Water and Wastewater Utilities (5th edition)
- AWWA G440-17 Emergency Preparedness Practices
- FEMA Comprehensive Preparedness Guide 101 (CPG-101)

The plan will be developed in alignment with other Department and Indian River County response plans to mirror other agency response action levels and ICS roles and responsibilities. The ERP will provide detailed information for planning purposes as well as emergency response actions in the form of a Rip and Run Guide for rapid response by managers and operators. Arcadis will develop an ERP that is effective and meets USEPA and AWIA expectations and requirements.

Task 3.1 – ERP Kickoff Meeting

Arcadis will conduct a document review to include a review of existing emergency response policies, plans, and procedures, as well as Indian River County documents that support an ERP. An ERP needs list will be provided for information not requested as part of the RRA. In addition, Arcadis will provide a proposed ERP Draft outline that includes key response information, core components in a base plan that details the ICS, incident management team (IMT) with roles and responsibilities, communication and notification, federal assistance information, as well as appendices to operationalize the ERP. Following our review and outline construction, an ERP kickoff meeting will be conducted to accomplish the following:

- Provide ERP process overview
- Discuss ERP review results
- Discussion and finalize an ERP outline per the Department's input at the meeting
- Establish and finalize interview topics and schedule with key Department representatives and stakeholders

Arcadis will develop a Microsoft PowerPoint presentation presented for discussion during the kickoff. It is anticipated that the kickoff meeting will require one and a half hours of key Department and stakeholder staff time and will be conducted virtually.

Deliverables:

1. List of ERP informational needs
2. Draft ERP outline
3. Meeting presentation and kickoff meeting summary
4. Revised ERP outline

Task 3.2 – ERP Site Visit

The Arcadis team will conduct data collection meetings onsite in the form of workshops and interviews to obtain information for the development of the ERP in collaboration with Department staff and external response agencies. Meetings and interviews will be conducted in person, over the course of three days with three Arcadis staff, based on the scheduling and availability of Department staff. Information and data will be discussed and collected based on the preliminary meeting schedule and interview topics outlined below. Seven meetings (duration provided in table below) are anticipated and include the topics and personnel identified in the table below. Meeting agendas, topics, and questions will be submitted prior to the site visit.

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Workshop or Interview Topic	Discussion Topics	Department Personnel and Stakeholders
1. Workshop: Response Organization Structure (Approximately two hours)	Discussion of ICS Department organizational structure and IMT Title, roles, and responsibilities of IMT members Verification of EALs, initial response actions, and sustained operations Discussion of response training and exercises to meet the demands of EALs Discussion of Lessons learned from exercises and real emergency events EOCs (Departmental and County)	Directors of Utility Departments Emergency manager(s) Plant and system operator(s) Environmental Compliance Manager
2. Interview: Communication (Internal and External) Protocol and Procedures Interview (Approximately forty-five minutes)	Emergency contact list Warning, notification, and reporting protocols Public information protocols and forms	Communication Affairs Manager
3. Interview: Emergency Procurement and Recovery Interview (Approximately forty-five minutes)	Procurement protocol during an emergency FEMA public assistance (recovery finances, information forms, and tracking) Discuss and obtain forms for emergency expenditures and budgets	Finance and Procurement staff
4. Operational Emergency Preparedness and Response Interview (Approximately one hour)	Water system emergency operations Equipment, supply, spare parts, and resources list Generator list and evaluation of power provisions (Review Power Plan)	Water Plant Manager Operator Representative Maintenance representative

Workshop or Interview Topic	Discussion Topics	Department Personnel and Stakeholders
5. Indian River Emergency Management Division Interview (Approximately forty-five minutes)	Coordination of emergency response activities and EALs Coordination of public warning, notification, and information Resources available for emergency response and recovery (debris management and damage assessment) and logistics management EOCs	Indian River County Emergency Management Division
6. Other Interviews as determined (Approximately thirty minutes)	Discuss how alerts are received Procedures for disseminating information to the IMT and first responders	Dispatch or control center points of contact
7. Close-out Meeting (Approximately one hour)	Present a summary of findings	Key Department personnel

EAL: Emergency Action Levels
EOC: Emergency Operations Centers
FEMA: Federal Emergency Management Agency
ICS: Incident Command System
IMT: Incident Management Team

Site visit workshop and meetings will be designed to collaborate with Department staff to learn AWIA requirements and essential elements associated with the ERP.

Deliverables:

- Workshop PowerPoint slides and materials
- Workshop summary of key highlights and decisions
- Seven interview meeting summaries

Task 3.3 - Draft and Revised Draft ERP

The structure of the ERP includes development of a base plan that describes the Department's all-hazards response structure and procedures for emergency events. Effective response to an emergency requires consistent protocols and response actions among organizational levels and areas affected. The base plan will be the cornerstone for planning and training that defines the Department's overall approach to emergencies including development of "Concept of Operations" that establishes functions, roles, and responsibilities of staff during emergencies including what should happen, when, and at whose command.

Base plan components include:

- Command and control and the IMT
- ERP activation, response actions, emergency action levels (EALs)

- Resources and equipment
- Crisis Communications
- Emergency Procurement
- Training and Exercises

Appendices include key information for emergency response including an internal and external contact list, system maps and assembly point diagrams, equipment and resources, incident specific response procedures (ISRPs), ICS Forms, references, and resources. A Draft ERP will be developed based on the plan outline determined in Task 3.1. The ERP will incorporate information collected in Tasks 3.1 and 3.2. The Draft ERP will include the following elements:

- Overview of the water system, facility information and maps
- Emergency contact list (internal and external)
- Department's organization structure: review existing response organizational chart and response protocols in place
- ICS roles and responsibilities, concept of operations: review and describe response related operations and procedures
- IMT: verify Department organization and titles of staff who would participate on the IMT
- EALs: verify initial response actions and continuing operations for the Department and align with County response levels
- Document lessons learned from emergency event occurrences to enhance response and recovery
- Communication procedures (internal and external) and notification and reporting protocol
- Emergency procurement
- ISRPs (up to 10 ISRPs): providing response action procedures based on threats and hazards identified in the RRA. These action plans will be structured in a "rip and run" format for ease of access in an emergency. The ISRPs can be used to train and guide staff in rapid response procedures for specific emergency scenarios.
- Equipment, spare parts, supply, and resources list (including generator list and review of power provisions)
- Recovery operations and planning
- Information regarding FEMA assistance and cost data tracking
- Detection strategies and detection technology in place
- Mitigation actions (integration of RRA mitigation measures)
- Training and exercises
- Procedures and forms
- References and resources

A Draft plan will be submitted within six weeks following the site visit. The Department will have a three-week review and comment period. Arcadis will facilitate a two-hour virtual ERP review meeting to obtain the ERP feedback, comments, and questions. A revised Draft ERP will be submitted that includes changes, comments, and recommendations from the Department.

Deliverables:

1. Electronic Draft ERP
2. Two-hour virtual comment review meeting
3. Electronic revised Draft ERP

Task 3.4 – Tabletop Exercise

To enhance the viability of the ERP, an onsite, in person four-hour discussion-based tabletop exercise (TTX) will be designed and facilitated by Arcadis in conjunction with Department staff and applicable stakeholders following Homeland Security Exercise and Evaluation Program (HSEEP) guidelines. Arcadis will collaborate with Department staff over the course of three, two-hour virtual planning meetings to design the TTX (planning meeting members will not be participating in the exercise). These planning meetings will develop specific exercise objectives, scenarios, capabilities, and critical tasks for the exercise based the revised draft ERP. TTX planning meeting discussions will be summarized in an Exercise Development Worksheet and provided to the Department following each meeting.

The TTX will be conducted in person and include an Arcadis facilitator, evaluators, and support staff, and Department observers, evaluators, and planners. The TTX will consist of multi-media modules that present scenario progression followed by targeted questions related to steps and actions to take based on the revised draft ERP. TTX materials and forms will be developed by Arcadis in coordination with the Department and customized through the TTX planning process. Each exercise participant will be provided a situation manual to follow along and use during TTX play and participant feedback forms to comment on the exercise and the ERP. Feedback forms will be collected at the end of the exercise and compiled with observations and evaluator ratings into a draft after-action report (AAR) of best practices, lessons learned, and improvement plan. The draft AAR will be submitted to the Department for review and comment.

Arcadis will facilitate a two-hour, virtual AAR review meeting with the Department to review the draft AAR. Arcadis will solicit input, identify, and obtain consensus for AAR improvement plan revisions and ERP enhancements. Arcadis will incorporate Department AAR review meeting comments and deliver a final AAR.

Deliverables:

1. Three, two-hour remote TTX planning meeting summaries
2. TTX presentation and materials: situation manuals, evaluator sheets, and participant feedback forms
3. Electronic Draft AAR
4. Two-hour AAR meeting summary
5. Electronic Final AAR

Task 3.5 – Final ERP

A final ERP addressing Department comments based on the TTX AAR and associated review meeting will be prepared and submitted to the Department. The ERP is designed to meet AWIA compliance requirements and current USEPA expectations in the event of a compliance and inspection audit. The Department will be responsible for certification of completion of the ERP to USEPA by the established regulatory deadline of September 30, 2025.

Deliverable:

1. Electronic Final ERP

Task 4 – Water Master Planning Project Integration Support

Arcadis will provide support to the Department with risk-based prioritization and integration of selected water system mitigation measures, initiatives, and projects in the Department's Water Master Plan efforts. The team will provide the Department with a a prioritized strategy for projects, programs, and short-and long-term efforts based on risk reduction and enhanced resilience benefits for inclusion in the Water Master Plan and long-term planning efforts. This support will include development and submittal of the draft memorandum for Department

review and comment. Following receipt of comments, Arcadis will address Department comments. A final memorandum will be submitted that includes a mitigation integration approach, specific mitigation measures and projects, and recommended approaches for inclusion in the resilience portion of the Department's Water Master Plan.

Deliverables:

1. Draft resilience integration technical memorandum
2. Final resilience integration technical memorandum

Optional Tasks – Not Included in Current Fee Estimate

As requested, optional tasks are listed below and can be part of this contract or a separate task order based on future scope discussions and development of cost estimates.

Optional Task 1 – 5-Year Multi-Year Training and Exercise Plan

Arcadis would develop a training and exercise (T&E) plan to include regulatory requirements and test the ERP planning assumptions and supports building staff capabilities that enhance response actions in an emergency. Our T&E Plans outline recommended trainings and exercises in a framework that includes a multi-year schedule and specific T&E resource information. We believe that following the Homeland Security Exercise and Evaluation Guide (HSEEP) Integrated Preparedness Plan (IPP) model is an effective approach. The following tasks to T&E Plan development are outlined using the IPP process but customized for the Department.

Optional Task 1.1 - T&E Workshop (T&EW)

In preparation for the T&EW, the Arcadis team would review existing training and exercise related documentation. In coordination with the Department, Arcadis would better understand the Department's T&E goals, priorities, and current capabilities. The Arcadis team would link the Departments current efforts to The National Preparedness Goal: 32 Core Capabilities and establish priorities as a starting point for T&EW discussions. Arcadis would then develop a T&EW PowerPoint presentation for workshop participants to outline and display an initial preparatory T&EW. At the T&EW, Arcadis would facilitate further discussion on goals, priorities, and capabilities that would lay the foundation for a written T&E Plan. Throughout the T&EW process, Arcadis would document each step with presentation materials and notes based on contributions by participants and final T&EW results. Our T&EW may be held virtually to allow flexibility and reduced travel costs.

Optional Task 1.2 - Training and Exercise Plan (T&EP)

Arcadis would identify and develop a T&E course list of current local, state, and federal T&E course offerings in each category. For the T&E Course List, Arcadis would include trainings at proficiency levels from awareness to advanced and viable delivery methods that include on-line and in-person.

The Arcadis team would provide an overview on HSEEP principles regarding the building block approach, exercise cycle, and exercise planning such as design and development, planning teams, and scenario development for exercise conduct, evaluation, and after-action and improvement plan reporting. The Plan would also include customized HSEEP templates for each phase of the T&EP.

The T&E Plan would include a multi-year schedule for drills, tabletops, and field exercises and the corresponding information for implementation. The Arcadis team would include additional elements to operationalize the plan. The plan would provide scenarios that include hazards most likely to impact the Department such as hurricanes,

flooding, and potential malevolent acts. The Arcadis Team would also include customized Exercise Evaluation Guides (EEGs), one set per scenario, which reflect the T&EP priorities and capabilities chosen at the T&EW. Also included in the T&EP would be after-action and improvement plan (AAR/IP) guidance and templates and a T&E Record for tracking and documented completed trainings and exercises.

Optional Task 2 – Wastewater System RRA

Arcadis would complete a wastewater system RRA following the AWWA J100 seven step standard methodology. Existing system knowledge would be leveraged, and an initial needs list provided to the Department prior to a brief Kickoff Meeting. Development of the RRA would include an Asset and Threat Workshop to identify mission-critical assets and relevant associated threats (malevolent, accidental, natural, dependency, and proximity). Following the workshop, a 5-day consecutive onsite visit of select critical and representative assets would be completed by three Arcadis staff. During the site visit, interviews would also be conducted with key staff.

A Consequence and Vulnerability Workshop would then be facilitated to identify and quantify potential impacts based on threat-asset scenarios (for up to 150 threat-asset pairs). Associated vulnerabilities to potential impacts would be discussed with input solicited by the Department. Arcadis would complete the Risk and Resilience Analysis using a Risk Model/Power BI Tool. Risks and threats would be prioritized for potential mitigation.

Arcadis would then facilitate a RRA Results and Mitigation Workshop to review and adjust results as needed; identify current, ongoing, and planned mitigation projects and initiatives; and select additional recommended mitigation measures designed to reduce system risks and increase resilience. A high-level cost benefit evaluation of mitigation measures would be completed for recommended timeline and potential funding mechanisms for strategic implementation. Arcadis would submit a Draft Wastewater System RRA for review by the Department, address comments, obtain approval for the final report, and submit the Final RRA to the Department.

Optional Task 3 – Incorporation of Wastewater System in the ERP

Arcadis would provide wastewater response considerations that include a revision of the Water ERP to incorporate the following:

- Update the contact list with wastewater personnel information.
- Update the Incident Management Team (IMT) organization chart to include wastewater response personnel.
- Develop up to five ISRPs for the following, as example: major line break, power loss, loss of SCADA, pandemic response, and malevolent acts. Conduct interviews to obtain information.
- Review threats to the wastewater collection and treatment system and identify mitigation actions and response actions.
- Incorporate existing sewer system overflow response plans, as determined.
- Update of appendices, including contact lists, forms, policies, equipment, and resources (including generator list and evaluation of power provisions).
- Develop a wastewater system overview.
- Concept of Operations: Review and describe wastewater response related operations. Include procedures in an appendix.
- Review and revise Emergency Action Levels and Initial Response Operations.
- Spare Parts and Equipment: Update to include Wastewater and Sanitation spare parts and equipment information.
- Recovery: Update to include recovery actions for wastewater.
- Detection Strategies: Address Detection Strategies specifically for wastewater.

- Mitigation Actions: Address Mitigation Actions specifically for wastewater.
- Develop a section to address other wastewater response considerations such as explosives in the collection system and access to utility systems underground.

Schedule

Arcadis will commence upon receipt of notice to proceed (NTP). Submittals will be made in accordance with the project schedule provided below. Arcadis estimates that the overall project through closeout will be completed on or before September 15, 2025, with NTP issued no later than Octobert 1, 2024.

	2024					2025								
	A	S	O	N	D	J	F	M	A	M	J	J	A	S
Task 1 – Project Management and KO Meeting	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪	▪
Task 2 – Risk and Resilience Assessment	▪	▪	▪	▪										
Task 2.1 – J100 Steps, Gap Analysis and Information/Data Needs Workshop	▪	▪	▪											
Task 2.2 – Cyber Workshop and Assessment			▪											
Task 2.3 – J100 Steps: Assets and Threats Workshop				▪										
Task 2.4 – Site Visits						▪								
Task 2.5 – J100 Steps: Consequence and Vulnerability Workshop						▪								
Task 2.6 – Risk Analysis Results and Mitigation Planning Workshop							▪							
Task 2.7 – Draft and Final RRA							▪	▪						
Task 3 – Emergency Response Plan						▪	▪	▪	▪	▪	▪	▪	▪	▪
Task 3.1 – ERP Kickoff Meeting						▪								
Task 3.2 – ERP Site Visit							▪							
Task 3.3 – Draft and Revised Draft ERP								▪	▪	▪				
Task 3.4 –Tabletop Exercise								▪	▪	▪	▪			
Task 3.5 – Final ERP													▪	▪
Task 4 - Water Master Planning Project Integration Support								▪	▪	▪	▪	▪	▪	▪

The RRA is required to be certified on or before March 31, 2025.
The ERP is required to be certified on or before September 30, 2025

Compensation

Arcadis will provide the services described herein for the not to exceed fee of **$456,330.10**. All work will be billed on a lump sum basis in accordance with the Exhibit B Fee Estimate.

Indian River County AWIA Project Exhibit B, Fee Proposal

Task #	Labor Category / Task Description	Tim Ware Project Manager	Corie Sapp Senior Engineer	Lisa D'Allessandris Project Engineer	Mary Jacques Project Engineer	Zahira Tieso Project Engineer	Giovana Batista Staff Engineer	Jissell Muir Staff Engineer	Sandra Demma Project Assistant	Zeeshan Amin Senior Engineer	Total Hours
1	Project Management and KO Meeting	53	26	1	33	29	20	6	80	2	250
	Meetings with City (14, 1-hour remote)	21	14		21	21	14				
	Project Management (14 months)	28	10		10				80		
	Kickoff Meeting	4	2	1	2	8	6	6		2	
2	Risk and Resilience Assessment	94	176	0	0	252	284	256	0	136	1198
	Task 2.1 - J100 Steps, Gap Analysis and Data Needs Workshop	6	16			24	24	36			
	Task 2.2 - Cyber Workshop and Assessment	24	8			24	24	24		88	
	Task 2.3 - Assets and Threats Workshop	8	32			32	32	24			
	Task 2.4 - Site Visits	24	16			60	60	60			
	Task 2.5 - Consequence and Vulnerability Workshop	8	32			32	32	24			
	Task 2.6 - Risk Analysis and Mitigation Planning Workshop	8	32			32	32	40		16	
	Task 2.7 - Draft and Final ERP Report	16	40			48	80	48		32	
3	Emergency Response Plan	76	32	260	104	0	216	288	0	0	976
	Task 3.1 - Planning Kickoff Meeting	8		16	16		8	16			
	Task 3.2 - Meetings and Interviews	24		80	32		80	80			
	Task 3.3 - Draft and Revised Draft ERP	16		60	40		80	96			
	Task 3.4 - Tabletop Exercise	24	32	96	8		32	64			
	Task 3.5 - Final ERP	4		8	8		16	32			
4	Water Master Planning Integration Support	10	36	0	14	40	40	0	0	0	140
	Department Coordination and Recommendation Selection	4	16		4	8	8				
	Draft Memorandum	4	16		8	24	24				
	Final memorandum	2	4		2	8	8				

	Tim Ware	Corie Sapp	Lisa D'Allessandris	Mary Jacques	Zahira Tieso	Giovana Batista	Jissell Muir	Sandra Demma	Zeeshan Amin		
Total Hours	233	270	261	151	321	560	550	80	138		
Hourly Rate	$263.88	$225.57	$186.87	$205.60	$190.40	$124.18	$114.22	$81.48	$223.23	Expenses	Total Cost
Total Cost	$61,484.04	$60,903.90	$48,773.07	$31,045.60	$61,118.40	$69,540.80	$62,821.00	$6,518.40	$30,805.74	$23,319.15	$456,330.10