

RESEARCH AGREEMENT FOR THE SEPTIC TANK VULNERABILITY ASSESSMENT PROJECT

THIS RESEARCH AGREEMENT FOR THE SEPTIC TANK VULNERABILITY ASSESSMENT PROJECT (“Agreement”), entered into as of the date of the last signature on this Agreement (“Effective Date”) by and between CITY OF JACKSONVILLE, a consolidated municipal corporation and political subdivision of the State of Florida, with an office located at 214 North Hogan Street, Suite 300, Jacksonville, FL 32202 (“City”) and THE UNIVERSITY OF FLORIDA BOARD OF TRUSTEES, a public body corporate of the state of Florida with offices at UF Research | Sponsored Programs, 207 Grinter Hall, Gainesville, FL 32611-5500 (“University”), collectively referred to as the “Parties.” Parties agree to the following:

BACKGROUND

University’s research capabilities reflect a substantial public investment as a part of its research and higher education mission as a public land-grant university. The research contemplated by this Agreement aims to produce results of mutual interest to University and City.

SECTION 1 - INTRODUCTION

- 1.1 Research Efforts. University shall use diligent efforts to perform the work described in Appendix A attached and incorporated as a part of this Agreement hereto (“Project”) according to the standards of a United States institution of higher education.
- 1.2 Period of Performance. The period of performance for the Project will begin on June 1, 2024, and end on November 30, 2025
- 1.3 Principal Investigator. TRICIA KYZAR (“Principal Investigator”) is responsible for performance of the Project on behalf of University. If TRICIA KYZAR ceases to serve as Principal Investigator, University shall immediately notify City, in writing, and the Parties shall agree on a successor Principal Investigator within forty-five days (45) of University’s written notice of the termination of the Principal Investigator. In the event that Parties cannot find a mutually acceptable successor Principal Investigator, then either Party may terminate this Agreement in accordance with Section 9 of this Agreement.
- 1.4 City Technical Representative. JAMES RICHARDSON (“City Technical Representative”) is the City’s principal representative regarding technical matters. City may change its City Technical Representative upon reasonable written notice to University.
- 1.5 Consultation. The City Technical Representative may consult with the Principal Investigator regarding the Project. University shall have sole discretion on access to work in University facilities but shall make such access to work available to City on a reasonable

basis at a time and manner determined by the Principal Investigator.

SECTION 2 – BUDGET & PAYMENTS

2.1 Total Funding. City shall fund a maximum amount of Two Hundred Thousand U.S. Dollars (\$200,000.00) for the FIXED PRICE Project, paid in accordance with Section 2.2 of this Agreement.

2.2 Payments.

Unless terminated prior to completion of the work, and in accordance with Provision 9.4 of this Agreement, City shall pay University no later than thirty (30) days after receipt of an invoice. University shall invoice according to the following schedule:

Amount	Date
\$50,000	Upon execution of the Agreement
\$50,000	12/01/2024
\$50,000	06/01/2025
\$50,000	10/10/2025

Payments are due within thirty (30) days from receipt of invoice. City shall pay interest to University on balances unpaid longer than thirty (30) days at a rate of twelve percent (12%) per annum. City shall pay University for all costs of collecting unpaid balances, including any third-party collection fees, attorney’s fees, and court costs the University may incur to collect outstanding balances.

2.3 Billing Addresses.

University shall send invoices to: jrichard@coj.net
Attn: James A. Richardson, II
Jacksonville Environmental Protection Board
214 N Hogan Street – Suite 500
Jacksonville, FL 32202

City shall remit payments to: Attn: Tiffany Schmidt
University of Florida
P.O. Box 931297
Atlanta, GA 31193-1297-
e-mail: cgrevenue@admin.ufl.edu
phone: 352-392-1235

City shall include University Agreement number (AGR00030486) on each payment.

SECTION 3 –CONFIDENTIAL INFORMATION and PROPRIETARY MATERIALS

3.1 Confidential Information.

(a) Definition. “Confidential Information” means any and all non-public information owned or controlled by City or University (“Disclosing Party”) disclosed to the other (“Receiving Party”) in connection with the Project that is specifically marked as confidential at the time of disclosure or if not able to be marked, identified as confidential and followed up in writing to document its confidentiality as soon as possible but no more than fifteen (15) days after disclosure.

(b) Obligations. The Receiving Party shall use the Confidential Information solely for the performance of the Project and may disclose Confidential Information only to its directors, officers, employees, and agents who need to know the Confidential Information for the performance of the Project. The Confidential obligations of the Receiving Party under this Agreement will survive for three (3) years after the termination or expiration of this Agreement. University may refuse to accept any Confidential Information offered by City.

(c) Exceptions. The obligations of Subsection 3.1(b) of this Agreement do not apply to information disclosed by City or University that is (i) publicly available; (ii) independently known, developed, or discovered without use of Confidential Information; (iii) made available by a third party without a known obligation of confidentiality to the Disclosing Party; or (iv) required to be disclosed to comply with a law, regulation, or court or administrative order provided that the Receiving Party uses reasonable efforts to provide prior written notice to the Disclosing Party.

(d) Return. At the request of the Disclosing Party, the Receiving Party shall return or destroy all originals and copies of Confidential Information in its possession except for one (1) copy of the Confidential Information for the purpose of monitoring its obligations under this Agreement, and any copies of Confidential Information created solely by the Receiving Party’s standard archiving and backup procedures in accordance with the State of Florida retention schedules.

3.2 Proprietary Materials.

(a) Definition. “Proprietary Materials” means the original material(s) listed in Appendix A provided by City or University (“Provider”) to the other Party (“Recipient”) for use in the Project, any associated know-how and data provided by the Provider, and any progeny and substances created by the Recipient that constitute an unmodified functional subunit or product expressed by the original material.

(b) Limited Use and Transfer. Provider grants Recipient the limited right to use the Proprietary Materials only for the Project. Recipient agrees to: (i) use the Proprietary Materials only in compliance with applicable federal, state, and local laws and regulations; (ii) not use the Proprietary Materials in any in vivo experiments on human subjects; (iii) not transfer any of the Proprietary Materials to any third party without the prior written consent of the Provider; and (iv) not reverse engineer, analyze, test, or make derivatives of the Proprietary Materials except to the extent expressly permitted in Appendix A or unless Provider otherwise provides authorization in writing. Each Party reserves the right to refuse to accept any Proprietary Materials offered by the other Party.

(c) No Rights. The Provider retains all rights in its Proprietary Materials. Other than the limited right granted to the Recipient to use the Proprietary Materials for the Project, neither Party conveys or is obligated to convey by this Agreement any right, title or interest in or to the tangible or intangible property rights therein.

(d) Return. Upon expiration or termination of this Agreement or at the request of Provider, Recipient shall either return or destroy any unused Proprietary Materials and destroy any unused Work Product incorporating Proprietary Materials.

SECTION 4 -- PROJECT INTELLECTUAL PROPERTY

4.1 Definitions.

(a) “Inventions” means any inventions, materials, products or discoveries conceived under this Agreement; the term “conceived” shall be construed in accordance with its meaning under U.S. patent law.

(b) “Work Product” means tangible materials and any associated know-how that are generated by the University under this Agreement.

4.2 Background Intellectual Property. Neither Party transfers to the other Party by operation of this Agreement any patent right, copyright, or other tangible or intangible proprietary right existing as of the Effective Date or developed outside the scope of this Agreement.

Nothing in this Agreement shall be construed by implication, estoppel, or otherwise as a license to such rights.

- 4.3 Ownership. Inventions conceived by the City shall be owned by the City. Inventions conceived by the University shall be owned by University. Inventions conceived jointly by the City and University shall be jointly owned by the City and University. Work Product shall be owned by University.
- 4.4 Disclosure. City shall provide University with a written disclosure of any Inventions created under the Project and disclosed to the City by City's employee(s). University shall provide the City with written disclosure of any Invention or Work Product promptly after it is disclosed to UF Innovate. Each Party shall retain all disclosures submitted by the other Party as Confidential Information of the Disclosing Party, subject to any rights as owner of the Receiving Party.
- 4.5 Rights in Inventions and Work Product. University grants City a first right to negotiate a worldwide, royalty-bearing, exclusive license to University's rights in Inventions and a right to negotiate a worldwide, nonexclusive license to University's rights in Work Product (the "Negotiation Right"). City's Negotiation Right commences when University submits a disclosure pursuant to Section 4.4 and expires ninety (90) days after such disclosure ("Evaluation Period"). City may exercise the Negotiation Right by written notice to UF Innovate during the Evaluation Period. If City exercises the Negotiation Right, UF Innovate and City shall negotiate a license agreement in good faith for a period not to exceed six (6) months after City's exercise of the Negotiation Right ("Negotiation Period"). The terms of the license agreement will be based on fair market value, and among other customary terms, will obligate City to diligently develop the Invention for practical application. Unless an extension has been mutually agreed to in writing, at the end of the Evaluation Period or, if the Negotiation Right is exercised, Negotiation Period, University shall have no further obligation to City with regard to that Invention or Work Product and is free to license its rights therein to any third party.
- 4.6 Patent Rights. At the request of the City during the Evaluation Period, University will prepare and file a patent application for an Invention using patent counsel selected by University and reasonably acceptable to City. City shall reimburse University within thirty (30) days of invoice for all reasonable patent-related expenses incurred during the Evaluation Period and, if the Negotiation Right is exercised, the Negotiation Period. University shall provide City with reasonable opportunity to review and comment on the draft patent application, which shall be University Confidential Information. If City declines to support a patent application, fails to respond within the Evaluation Period, or decides to discontinue the financial support of the patent application(s), University may file or continue prosecution at University's sole expense with no further obligation to City for that Invention, including but not limited to any obligations related to the Negotiation Right.

- 4.7 Copyrightable Works. University or its employees own any copyrighted or copyrightable works created by University employees in the performance of the Project.
- 4.8 If any Invention has also been funded by the federal government, a non-profit organization, or a state or local agency, this Agreement and the grant of any rights in that Invention is are subject to the terms that attach to such funding, including, in the case of the federal government, as set forth in 35 U.S.C. §§ 201, 37 C.F.R. Part 401. If any term of this Agreement fails to conform to applicable law, regulations, or agreements, the relevant term of this Agreement is invalid, and the Parties shall modify the term in accordance with Section 11.4 of this Agreement to comply therewith.

SECTION 5 –DELIVERABLES

The Principal Investigator shall deliver the following to the City Technical Representative:

<u>Deliverable</u>	<u>Due Date</u>
Scope of Work Task 1	August 1, 2025
Scope of Work Task 2	October 10, 2025

Subject to the provisions of Sections 3, 4, 6, and 7 and any ownership rights granted to the Parties therein, University grants City an irrevocable, non-exclusive license to use, disclose, reproduce, distribute, and prepare derivative works from Deliverables.

SECTION 6 – PUBLICATION AND ACKNOWLEDGEMENT OF CITY’S FUNDING SUPPORT

University reserves the right to make or allow to be made scholarly disclosures of the findings of the Project, including but not limited to, publication in scholarly journals, presentations conferences, disclosures to University and non-University scholars, and disclosures in grant and funding applications. University will not disclose City’s Confidential Information and will provide a written acknowledgement of City’s funding support and role in the Project.

SECTION 7 - PUBLICITY

Neither Party shall use the other’s name, crest, logo, trademark, or registered image without the express written permission of that Party. In the case of University, consent must be provided by its Office of Strategic Communications and Marketing. Notwithstanding the foregoing, either Party may make factual statements about the

existence of this Agreement without prior approval, including the amount of the funding and a description of the Project, including in order to comply with (i) governmental disclosure obligations or (ii) City's reporting policies.

SECTION 8 – WARRANTY DISCLAIMER; LIABILITY; INSURANCE

- 8.1 UNIVERSITY MAKES NO EXPRESS WARRANTIES AND DISCLAIMS ANY IMPLIED WARRANTIES, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AS TO ANY MATTER RELATING TO THIS AGREEMENT, INCLUDING BUT NOT LIMITED TO, THE PERFORMANCE OR RESULTS OF THE PROJECT; THE AVAILABILITY OF LEGAL PROTECTION FOR REPORTS, RESEARCH DATA, INVENTIONS, MATERIALS, DELIVERABLES, OR ANY OTHER WORK PRODUCT OF THE PROJECT; OR THE VALIDITY OR ENFORCEABILITY OF ANY INTELLECTUAL PROPERTY PROTECTION THAT MAY BE OBTAINED PURSUANT TO THIS AGREEMENT. UNIVERSITY MAKES NO ASSURANCES THAT THE USE OF, INCLUDING BUT NOT LIMITED TO, REPORTS, DATA, DELIVERABLES, MATERIALS, OR INVENTIONS WILL NOT INFRINGE ANY PATENT RIGHTS OR OTHER PROPRIETARY RIGHTS OF A THIRD PARTY.
- 8.2 Each Party will bear its respective risks and liabilities incurred by it as a result of its obligations and efforts under this Agreement and shall not be liable for the acts of third parties or the consequences of the acts of third parties. Notwithstanding anything herein to the contrary, nothing in this Agreement constitutes consent by the State of Florida or its agents and agencies to be sued or a waiver of sovereign immunity of the State of Florida beyond the limited waiver provided in Section 768.28, Florida Statutes.
- 8.3 Insurance. University, as a public body corporate entity, warrants and represents that it is self-funded for liability insurance, with said protection being applicable to officers, employees, servants and agents while acting within the scope of their employment by University, and will provide its Certificate of Insurance upon request.

SECTION 9 - TERMINATION

- 9.1 Termination. Either Party may terminate this Agreement without cause upon sixty (60) days' prior written notice to the other.
- 9.2 Termination for Breach. If either Party commits a material breach of this Agreement and fails to remedy that breach within sixty (60) days after receipt of written notice from the other Party, the Party giving notice may terminate this Agreement by written notice to the other Party, effective upon receipt. Material breach includes but is not limited to failure to provide any resources such as payment, and deliverables as outlined in Appendix A due under this Agreement.
- 9.3 Surviving Terms. Expiration or termination of this Agreement by either Party without cause under Section 9.1 does not affect the rights and obligations of the Parties that accrued prior to the effective date of termination. City's rights in Section 4 do not survive

termination for material breach by City and any licenses or options granted in Section 4 shall be null and void.

- 9.4 Payments on Termination. Subject to Provisions 2.2 and 9.2 of this Agreement, upon termination of this Agreement by either Party for any reason, University will cease further obligation of funds and will take all reasonable steps to cancel or otherwise reduce outstanding obligations. The City will pay University for costs incurred up to the date of termination subject to University providing the City a written report of the deliverables completed up to the date of termination. Such written report of deliverables completed shall be provided to the City within 30 days of the termination.

SECTION 10 - NOTICES

All notices shall be provided in writing by email, recognized national overnight courier, or registered or certified mail, postage prepaid, return receipt requested, to the following addresses:

<p>If to City:</p> <p>Administrative and Technical Matters: James Richardson EPB Program Administrator Environmental Protection Board Ed Ball Building – 5th Floor 214 N. Hogan Street Jacksonville, Florida 32202 (904) 255-7213 jrichard@coj.net</p> <p>With a copy to: Office of General Counsel Attn: Government Operations Department 117 West Duval Street, Suite 480 Jacksonville, FL 32202</p>	<p>If to University:</p> <p>Administrative Matters: Attn: Stephanie Gray Division of Sponsored Programs University of Florida 207 Grinter Hall Gainesville, FL 32611-5500 (352) 392-9267 ufawards@ufl.edu</p> <p>Technical Matters:</p> <p><u>Tricia Kyzar</u> c/o Center for Coastal Solutions PO Box 116580, Weil Hall 365 Gainesville, Florida 32611 352-294-7185 tkyzar@ufl.edu</p> <p>Intellectual Property Disclosure/Notices: techlicensing@research.ufl.edu</p> <p>Office of Strategic Communications and Marketing: news@ufl.edu</p>
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Section 11 - Retention of Records/Audit:

11.1 The University must establish and maintain books, records, contracts, subcontracts, papers, financial records, supporting documents, statistical records, goods, services and all other documents, in whatsoever form or format including, but not limited to electronic storage media, (for purposes of this Article 19, hereinafter referred to as the "Records") sufficient to reflect all receipt and expenditures of funds provided by the City under this Agreement.

11.2 The University must retain all Project Records pertinent to this Agreement for a period of three (3) years after completion of the Project. If an audit has been initiated and audit findings have not been resolved at the end of six years, the Records shall be retained until resolution of the audit findings or any litigation which may be based on the terms of this Agreement, at no additional cost to the City. Records shall be retained for longer periods when the retention period exceeds the time frames required by law or ordinance.

11.3 Upon demand, at no additional cost to the City, the University must facilitate the duplication and transfer of any Records during the required retention period in Section 19.2 hereof.

11.4 The University must provide these Records at all reasonable times for inspection, review, copying or audit by the City, including but not limited to the Council Auditor's Office.

11.5 At all reasonable times for as long as the Records are maintained, the University must allow persons duly authorized by the City, including but not limited to the Council Auditor's Office, to have full access to and the right to examine any of the provider's Records, relative to the Project, regardless of the form in which kept.

11.6 The University, at its sole and exclusive cost and expense, must provide audits or reports as requested by the City, and must insure that all related party transactions are disclosed to the auditor.

11.7 The University must comply and cooperate immediately with any inspections, reviews, investigations, deemed necessary by the City.

11.8 The University must permit the City, including but not limited to the Council Auditor's Office, to interview any employees, subcontractors and subcontractor employees of the University to assure the City of the satisfactory performance of the terms and conditions of this Agreement. Following such review, if performance of the University is, in the opinion of the CITY, deficient, the City will deliver to the University a written report of the deficiencies and request for development by the University of a corrective action plan. The University hereby agrees to prepare and submit, to the City, said corrective plan within ten (10) days of receiving the City's written report. Thereafter, the University must correct all deficiencies in the corrective action plan, within ten (10) days from the City's receipt of the corrective action plan. The Parties agree that University shall comply with Section 215.97, Fla. Stat.

11.9 All reports, audits, and other information provided by the University pursuant to this Section shall contain the following statement: "The information provided to the City of Jacksonville in this submittal is submitted under penalties of perjury, under Section 837.06, Florida Statutes."

11.10 To the extent that the University uses subcontractors in the performance of the Services under this Agreement, or assigns this Agreement with prior City consent, the University must include the aforementioned audit, inspections, investigations and record keeping requirements in all subcontracts and assignments.

SECTION 12 -- MISCELLANEOUS

12.1 Independent Contractor. University and City are independent contractors. Neither Party may act as agent for the other or enter into any contract, warranty, or representation on behalf of the other. Neither Party is bound by the acts or conduct of the other.

12.2 Governing Law. This Agreement is governed and construed in accordance with the laws of the State of Florida.

12.3 Assignment. Neither Party may assign this Agreement voluntarily, by operation of law, or through change of control without the prior written consent of the other, which the Party may not unreasonably withhold or delay. This Agreement is binding upon and inures to the benefit of the Parties and their permitted successors and assigns.

12.4 Agreement Modification or Amendment. The Parties may only modify or amend this Agreement by a written instrument signed by both Parties. Any waiver of rights or failure to act in a specific instance relates only to that instance and is not an agreement to waive any rights or fail to act in any other instance. A purchase order may only be used for billing purposes. No other terms of this Agreement may be modified by terms included in a purchase order. The terms and conditions of such a purchase order do not apply, and such terms or conditions in a purchase order are null and void.

12.5 Force Majeure. Neither Party is responsible for delays in fulfilling or performing any term of this Agreement (except for any obligations to make payments to the other Party hereunder) resulting from causes reasonably beyond its control, including fire, explosion, flood, tropical storm, hurricane, war, strike, pandemic, or riot, provided that the nonperforming Party uses reasonable efforts to avoid or remove causes of nonperformance and continues performance under this Agreement with reasonable dispatch after the causes are removed.

12.6 Export Controls. Both Parties acknowledge that this Agreement and the performance thereof are subject to compliance with applicable United States laws, regulations, and orders, including but not limited to the International Traffic in Arms Regulations (ITAR),

22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799, and all embargoes and/or other restrictions imposed by the Treasury Department's Office of Foreign Asset Controls (OFAC), as amended. Both Parties further agree that if the export laws are applicable, the Parties will not disclose or re-export any technical data/materials received under this Agreement to any countries for which the United States government requires an export license or other supporting documentation at the time of export or transfer, unless the Parties have obtained prior written authorization from the appropriate U.S. government agency. Should City intend to disclose export-controlled technology or items to University, City will disclose the United States Munitions List (USML) Category or Export Control Classification Number (ECCN), as appropriate, to University Administrative contact (identified in Section 10) prior to disclosure. University reserves the right to decline receipt of export-controlled technology or items.

- 12.7 Dispute Resolution. The Parties shall attempt to cooperatively resolve any and all disputes and/or claims that arise under this Agreement by first engaging appropriate administrative officials of each Party who shall negotiate in good faith to seek a cooperative resolution. For any dispute related to this Agreement that the Parties cannot resolve by mutual agreement, the Parties must submit to formal mediation or other mutually agreed upon dispute resolution options. Upon dispute resolution failure, either Party may pursue any available legal remedy.
- 12.8 Severability. If any provision of this Agreement is held invalid or unenforceable for any reason, the invalidity or unenforceability does not affect any other provision of this Agreement, and the Parties shall negotiate in good faith to modify the Agreement to preserve, to the extent possible, their original intent.
- 12.9 Entire Agreement. This Agreement constitutes the entire agreement between the Parties with respect to its subject matter and supersedes all prior agreements or understandings between the Parties relating to its subject matter.
- 12.10 Counterparts and Execution. The Parties may execute this Agreement in one or more counterparts, each of which is an original, and all of which together are the same instrument. Delivery of a signed Agreement by reliable electronic means, including email, shall be an effective method of delivering the executed Agreement. This Agreement may be stored by electronic means and either an original or an electronically stored copy of this Agreement can be used for all purposes, including in any proceeding to enforce the rights and/or obligations of the Parties to this Agreement.
- 12.11 Headings. Headings are for convenience and do not affect the meaning of any provision of this Agreement.

12.12 Order of Precedence. In the event of any inconsistencies between the provisions set forth by this Agreement, the inconsistency shall be resolved by giving precedence in the following order (1) this Agreement, (2) Appendix A.

ARTICLE 13: Non-Discrimination Provisions:

In conformity with the requirements of Section 126.404, *Ordinance Code*:
The University represents that it has adopted and will maintain a policy of non- discrimination against employees or applicants for employment on account of race, religion, sex, color, national origin, age or handicap, in all areas of employment relations, throughout the term of this Agreement. The University agrees that, on written request, it will permit reasonable access to its records of employment, employment advertisement, application forms and other pertinent data and records, by the Executive Director of the Human Rights Commission, or successor agency or commission, for the purpose of investigation to ascertain compliance with the nondiscrimination provisions of this Agreement; *provided however*, that the University shall not be required to produce, for inspection, records covering periods of time more than one (1) year prior to the day and year first above written. The University agrees that, if any of the Services to be provided pursuant to this Agreement are to be performed by a subcontractor, the provisions of this Article 14 shall be incorporated into and become a part of the subcontract.

[Signatures to follow on next page]

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their duly authorized representatives.

ATTEST:

CITY OF JACKSONVILLE

By _____
James R. McCain, Jr.
Corporation Secretary
Date: _____

By _____
Donna Deegan, Mayor
Date: _____

ATTEST:

UNIVERSITY OF FLORIDA BOARD OF TRUSTEES

By _____
Signature

Type/Print Name

Title

By: _____
Elizabeth Keeter
Associate Director UF Research
Date: _____

Date: _____

In accordance with the *Ordinance Code*, of the City of Jacksonville, I do hereby certify that there is an unexpended, unencumbered, and unimpounded balance in the appropriation sufficient to cover the foregoing agreement; and that provision has been made for the payment provided therein to be paid.

Director of Finance and Administration
CITY Contract Number: _____

Form Approved:

Office of General Counsel

I acknowledge the Agreement and agree to be bound by its terms.

TRICIA KYZAR
Principal Investigator

APPENDIX A – Project Scope

Proposal to the City of Jacksonville, Jacksonville Environmental Protection Board (JEPB)

Title: Septic System Vulnerability Assessment and Septic to Sewer Project Optimization

Statement of Work (SOW)

Start Date: June 1, 2024

End Date: December 1, 2025

Total Budget: \$200,000 (USD)

Project Team:

- Dr. Ron Fick (rfick@ufl.edu)
- Dr. Tricia Kyzar (tkyzar@ufl.edu)

Project Rationale:

The City of Jacksonville ('the City', or CoJ) is a thriving and growing municipality in northeast Florida with a current population of almost 1 million residents. In 1968, the Jacksonville, consolidated with Duval County, with the exception of the Cities of Atlantic Beach, Neptune Beach, Jacksonville Beach, and Baldwin, in an effort to increase tax revenue and to improve delivery of infrastructure services both within and outside of the city limits such as sewer, electric, and other services. To this day, delivering on the 'Promises Made' during the Consolidation has been a challenge for many reasons but is still a promise that Jacksonville seeks to fulfill. As part of fulfilling these promises, the City seeks to find ways to prioritize and complete septic to sewer conversion projects to improve public services and environmental conditions for all residents.

In addition to the City of Jacksonville, Duval County is also home to the cities of Baldwin, Atlantic Beach, Neptune Beach, and Jacksonville Beach. While Jacksonville encompasses close to 98% of the whole of Duval County, these four cities are closely linked to Jacksonville for their operations, economy and culture. Because of this, Jacksonville has asked to include them in this project.

In an effort to assist Jacksonville and the other municipalities in Duval County with this initiative, the University of Florida's Center for Coastal Solutions (UF CCS or CCS) (<http://ccs.eng.ufl.edu>) has prepared the following Statement of Work for consideration by the Jacksonville Environmental Protection Board (the Board) to provide the Board and regional stakeholders with a multi-criteria vulnerability assessment of all single family residential septic systems and a prioritization of single family residential septic to sewer conversion projects. These two tasks will empower Jacksonville, Baldwin, Atlantic Beach, Neptune Beach, and Jacksonville Beach to identify in a data-driven and geographically standardized way the level of risk septic systems may be facing in their jurisdictions, and to create septic-to-sewer conversion project groupings that are financially and spatially efficient and are most likely to reduce septic system risk failure.

According to the Florida Department of Health (DOH), Florida Water Management Inventory Data (FLWMI), there are 75,394 'Known Septic' or 'Likely Septic' systems within Duval County at this time. Intersecting Duval County are waterbody impairments in the following categories: 2 Basin Management Action Plans (BMAPs), 45 Total Maximum Daily Loads (TMDLs), 92 Verified Impairments, and 133 Waters Not Achieving Standards (WNAS). Many of these waterbody impairments are associated with elevated nitrogen or bacterial levels, water

quality challenges that are known to be associated with septic systems, and which require action to meet State of Florida Department of Environmental Protection (DEP) guidelines. In addition to contributing to meeting state standards for water quality, identifying septic systems that are vulnerable to hydraulic failure from environmental impacts such as rising groundwater or storm related inundation, will be specifically identified through the vulnerability assessment, enabling prioritization of septic to sewer activities that can remove these highly vulnerable systems before they fail, potentially leading to their contents backing up into properties, rising to the land surface, or entering nearby surface or ground waters, posing risks to both public and environmental health.

Below we summarize potential tasks to be completed by the University of Florida Center for Coastal Solutions as part of this Statement of Work for the City of Jacksonville.

Septic System Vulnerability Assessment

As a part of comprehensively evaluating the County's vulnerability to environmental hazards and climate change-related hazards, it is necessary to assess the vulnerability of septic systems in the region. Septic systems are often overlooked when conducting Vulnerability Assessments because they are not publicly owned infrastructure, yet they can pose significant human health and environmental risks should they experience a hydraulic failure. Such a failure could cause raw effluent or sewage to rise to the land surface, back up into homes, or move quickly through saturated soils to nearby waterbodies. Untreated waste discharge contains many harmful elements including elevated nutrient levels, harmful bacteria, and pathogens. To help the County's municipalities understand the risk of failure for each of its septic systems, CCS will work with the Cities to identify the location of all septic systems, define the parameters, ranks and weights to be used in the vulnerability assessment methodology, and then perform the work necessary to gather and prepare the data to be used in the vulnerability assessment, and calculate the potential vulnerability of each septic system.

Task 1a: Enhanced Septic System Location Dataset

Description: [Florida Statutes 403.067\(7\)\(a\)9.b.\(1\)\(A\)](#) requires as part of the wastewater treatment plans adopted in Basin Management Action Plans (BMAPs), an inventory of septic system locations be completed based on the best information available by July 1, 2025.

Wastewater service data (septic or sewer) is contained in the Florida Department of Health (DOH) Florida Water Management Inventory Data (FLWMI) and is a key input for this project. There are two BMAPs in the Jacksonville/Duval County area - the St. Johns River Mainstem BMAP (aka Mainstem) and the St. Johns River Tributaries BMAP (aka Tribs) - which leads to the requirement to update septic system location data. To assist the municipalities in meeting this requirement and to ensure the most up to date septic systems locations for this project, CCS staff will work with each of the wastewater service providers: Jacksonville Electric Authority (JEA), City of Atlantic Beach, City of Neptune Beach, and City of Jacksonville Beach, to review and update a GIS shapefile of DOH FLWMI septic system locations (parcels) within Duval County. We will begin the cleaning process using each service provider's sewer network data and anonymized billing data to find parcels that may be labeled as septic service in the DOH FLWMI data, but have a lateral and/or a monthly bill per service provider data. This dataset will be shared with each of the service providers to begin conversations to further review and update the data until each provider is confident the data is as updated as possible. This 'cleaned' dataset will

be the key input for Task 1b and 2 and may also be used to meet the requirement for the updated septic system location data to the Florida Department of Health, Florida Water Management Inventory, at each City's discretion.

Deliverable: CCS will provide via email to each of the municipalities and JEA an update of the "FLWMI_Duval.*" file (Florida Department of Health, Florida Water Management Inventory Data, shapefile for Duval County) with an additional column noting the Updated WW service type for each parcel. It will be up to the municipalities and/or JEA to submit the file to the appropriate body (DEP or DOH) to meet the statute requirements.

Assumptions: It is assumed that all parties will work diligently and in a timely manner to review and update this data. The first step will be for all service providers to provide CCS with the sewer network and anonymized billing data within 2 weeks of the project start date. It is further assumed that there will be significant communication back and forth as CCS updates the DOH FLWMI data and shares with the municipalities and JEA for review and feedback.

Communications between all project partners, for this task in particular, should be responded to within one week to ensure the project remains on track.

While the final deliverable of the updated DOH FLWMI dataset is not due until March 31, 2025, to allow for continued updates as the project progresses, a working file, assumed to be 95% complete, will be provided to the municipalities and JEA by September 1, 2024.

Date of Completion: 95% complete file – September 1, 2024, Final complete file – August 1, 2025

Task 1b: Septic System Vulnerability Assessment Parameter Identification In-Person Workshop

Description: As part of the development of this statement of work, CCS has been working with City of Jacksonville and JEA staff to identify parameters necessary for inclusion in the vulnerability assessment. To complete the development of the Septic System Vulnerability Assessment parameter selection and rank assignments, CCS will convene an in-person workshop with all of the municipalities and Jacksonville Electric Authority staff. At this time, parameters will include those existing in the Jacksonville 'Septic Tank Phase Out Matrix,' the Compound Flood Model currently being developed, and several social justice related variables. These, and potentially other parameters will be discussed and decided upon in the workshop.

Deliverable: An in-person workshop as described above, the location and date of which will be determined by the project partners once a contract has been fully executed.

Assumptions: It is assumed that all parties will respond to communications in a timely manner. This includes providing availability for and participating in an in-person workshop to select parameters, assign ranks and weights for the septic system vulnerability assessment. It is also assumed that a location for the workshop will be provided by the project partners.

Date of Completion: The workshop should be held no later than October 1, 2024.

Task 1c: Septic System Vulnerability Assessment Parameter Identification Workshop Report

Description: To ensure an accurate record of the methodology that was decided up on in the workshop to be used in the vulnerability assessment, a short-written explanation will be created by CCS and shared with the project partners.

Deliverable: Written report summarizing the parameters, ranks, and weighting (methodology) decided upon during the in-person workshop in Task 1b.

Assumptions: It is assumed that all parties will respond to communications in a timely manner.

Date of Completion: Two (2) weeks following the in-person workshop (Task 1b) (10/14/2024).

Task 1d: Data Prep and Preliminary Septic System Vulnerability Assessment

Description: Following determination of the vulnerability assessment framework in Task 1b, CCS staff will acquire, evaluate, and transform all datasets into one parcel level spatial dataset with all parameter values represented for each parameter for each parcel. Spatial analysis will be performed on this dataset to calculate vulnerability scores of each septic system at the parcel level as determined by project partners during the in-person workshop in Task 1b. Results will be presented to City and JEA project partners for initial review and discussion. Based on feedback received during the initial review, UF CCS may rerun the calculations with minor modifications agreed upon by the project team. Minor modifications might be adjusting weights or rank delineations but would not include additions of new parameters.

Deliverables: A spatial dataset in either ESRI shapefile or GeoJSON format (or both, as determined by the municipalities), a csv file of parcel level septic system vulnerability assessment scores, and a written report describing the results, delivered to project partners via email.

Assumptions: Should any of the data required to perform this task be supplied by the municipal project partners, it is assumed this will be provided in a mutually agreed upon format (such as a .csv file) in a timely manner such as two weeks.

Date of Completion: Preliminary results will be delivered via email by February 1, 2025

Task 1e: In-Person Meeting to Present Preliminary Septic System Vulnerability Assessment Results

Description: CCS will work with project partners to organize an in-person meeting to present the preliminary findings of the Septic System Vulnerability Assessment for each of the municipalities. The purpose of the workshop is to present the preliminary findings to the municipalities and JEA so that we can have an engaged conversation about results and possible adjustments of the tool performance. Adjustments may include changes to ranks or weights of parameters but may not introduce new parameters.

Deliverables: An in-person meeting with all project partners to review and discuss the preliminary Septic System Vulnerability Assessment results. Following the meeting there will be a written meeting summary produced by CCS describing the input from project partners and agreed upon changes CCS will make prior to rerunning the Septic System Vulnerability Assessment.

Assumptions: Should any of the data required to perform this task be supplied by the municipal project partners, it is assumed this will be provided in a mutually agreed upon format (such as a .csv file) in a timely manner. It is also assumed that a location for the workshop will be provided by the project partners.

Date of Completion: Review to be held between February 7, 2025, and February 21, 2025.

Task 1f: Report Summarizing In-Person Meeting to Review Preliminary Septic System Vulnerability Assessment Results (Task 1e)

Description: To record feedback received in the preliminary results review (Task 1e), CCS will prepare a short report following the meeting and provide it to project partners for their records.

Deliverable: A short written report (word and/or pdf format) to be delivered via email to all

project partners.

Assumptions: It is assumed that all parties will respond to communications in a timely manner.

Date of Completion: Two (2) weeks following the in-person workshop (Task 1e) (March 1, 2025).

Task 1g: Rerun Septic System Vulnerability Assessment Results based on feedback from Task 1e.

Description: Using feedback received in Task 1e, CCS will make the noted minor adjustments to the septic system vulnerability assessment methodology and rerun the calculations for an updated output of vulnerability assessment risk scores.

Deliverables: A spatial dataset in either ESRI shapefile or GeoJSON format (or both, as determined by the municipalities), and a csv file of parcel level septic system vulnerability assessment scores, delivered via email.

Assumptions: Should any of the data required to perform this task be supplied by the municipal project partners, it is assumed this will be provided in a mutually agreed upon format (such as a .csv file) in a timely manner.

Date of Completion: Final results will be delivered via email by April 1, 2025, in Task 1h.

Task 1h: Report Summarizing Final Septic System Vulnerability Assessment Results (Task 1g)

Description: To report the final results of the Septic System Vulnerability Assessment. CCS will prepare a short report following the rerun of the Septic System Vulnerability Assessment Results based on feedback from task 1e and provide project partners for their records.

Deliverable: A short written report (word and/or pdf format) to be delivered via email to all project partners.

Assumptions: It is assumed that all parties will respond to communications in a timely manner.

Date of Completion: Final results will be delivered via email by April 1, 2025.

Cost for Task 1: \$120,000

Septic to Sewer Conversion Optimization

Septic to sewer conversion projects are costly, time consuming, and disruptive to complete. In order to improve the County's resiliency by converting high risk septic systems to sewer, and to create the most cost-effective septic-to-sewer conversion projects, thereby minimizing disruptions for residents and staff, CCS will work with the municipalities and JEA to develop baseline conversion costs which will be used as inputs to optimize septic to sewer project development. CCS will also prepare additional data inputs (existing sewer network, road network), perform the septic to sewer optimization, present preliminary results to the municipalities and JEA for feedback and refinement, and perform a final optimization.

Identify Baseline Project Cost

Description: During the workshop to identify parameter selections (Task 1b), CCS, the municipalities and JEA will discuss and identify a baseline cost per linear foot which will be used as an input for the septic to sewer optimization task.

Deliverable: this subtask has no deliverable separate from that in Task 1b.

Assumptions: It is assumed that all parties will respond to communications in a timely manner.

Date of Completion: Dependent on completion of the workshop as described in task 1b. Baseline project cost identified in the workshop (Task 1b) will be included in that workshop report (Task 1c, October 14, 2024)

Data prep and Optimization Performance

Description: Using outputs from Task 1 (septic system locations and vulnerability assessment scores), task 2a, existing sewer network spatial data (to be provided by each of the wastewater service providers), and road network data, CCS will prepare the data for input to the Septic to Sewer Optimization Tool, run the algorithm to identify septic system project clusters that result in the most economically and spatially efficient projects based on estimates of per foot costs. Using the power of AI, the algorithm repeats iteratively across the input datasets to create prioritized potential projects in a comprehensive and efficient manner.

Deliverable: Preliminary tool results will be provided in both presentation (PowerPoint or similar) and written (word or pdf document) format. For the City of Jacksonville, 10 (ten) projects will be presented, for Atlantic Beach, Neptune Beach, Jacksonville Beach, and Baldwin, 3 (three) projects will be presented. The project level information will include a map and summary statistics of the project (number of conversions, etc.)

Assumptions: It is assumed that all parties will respond to communications in a timely manner. It is further assumed that sewer network and anonymized billing data will have been received before this task (task 2b) begins because it will be used towards the completion of task 1a.

Date of Completion: Preliminary results will be delivered via email by June 1, 2025. This is assumed to be one (1) week prior to task 2c, where the results will be reviewed and discussed by project partners.

In-Person Meeting to Present Preliminary Results and Receive Feedback

Description: CCS will work with project partners to organize an in-person workshop to present the preliminary findings of the Septic to Sewer Optimization Tool for each of the municipalities. The purpose of the workshop is to present the preliminary findings as identified by the tool so that we can have an engaged conversation about results and possible adjustments of the tool performance.

Deliverable: An in-person workshop to present preliminary Septic to Sewer Optimization Tool results for review and feedback, the location and date of which will be determined by the project partners during the workshop being held in task 1b. These preliminary tool results will be provided in both presentation (PowerPoint or similar) and written (word or pdf document) format. For the City of Jacksonville, 10 (ten) projects will be presented, for Atlantic Beach, Neptune Beach, Jacksonville Beach, and Baldwin, 3 (three) projects will be presented. The project level information will include a map and summary statistics of the project (number of conversions, etc.)

Assumptions: It is assumed that all parties will respond to communications in a timely manner. This includes providing availability for and participating in an in-person workshop to review the preliminary Septic to Sewer Optimization results and provide feedback on how the results can be improved. It is also assumed that a location for the workshop will be provided by the project partners.

Date of Completion: The meeting will be held between July 15, 2025, and August 1, 2025.

Written Report Summarizing Feedback Received from In-Person Meeting (Task 2c)

Description: To record feedback received in the preliminary results review (Task 2c), CCS will prepare a short report following the meeting and provide it to project partners for their records.

Deliverable: A short written report (word and/or pdf format) to be delivered via email to all project partners.

Assumptions: It is assumed that all parties will respond to communications in a timely manner.

Date of Completion: Report will be delivered via email by two (2) weeks following the in-person workshop (Task 2c) (August 15, 2025).

Rerun Optimization Based on Feedback Received in Workshop (Task 2c)

Description: Based on feedback received at the in-person workshop in task 2c, CCS will incorporate feedback and rerun the septic to sewer optimization tool.

Deliverable: These outputs will be in a short report format that includes a map of the project and details of the project such as the number of conversions included. For the City of Jacksonville, 10 (ten) projects will be presented, for Atlantic Beach, Neptune Beach, Jacksonville Beach, and Baldwin, 3 (three) projects will be presented. The project level information will include a map and summary statistics of the project (number of conversions, etc.)

Assumptions: It is assumed that all parties will respond to communications in a timely manner.

Date of Completion: Final results will be delivered via email by October 10, 2025, in Task 2f.

Written Report Summarizing Results of the Final Optimization Results (Task 2e)

Description: The final results of the Septic to Sewer Optimization Tool will be compiled in a report to be shared with all project partners. For each project,

Deliverable: These outputs will be in a short report format that includes a map of the project and details of the project such as the number of conversions included. For the City of Jacksonville, 10 (ten) projects will be presented, for Atlantic Beach, Neptune Beach, Jacksonville Beach, and Baldwin, 3 (three) projects will be presented. The project level information will include a map and summary statistics of the project (number of conversions, etc.)

Assumptions: It is assumed that all parties will respond to communications in a timely manner.

Date of Completion: Ten (10) days following the in-person workshop (Task 2e) (October 10, 2025).

Presentation of Project and Results at the 2025 Jacksonville Environmental Symposium

Description: The final results of the Septic System Vulnerability Assessment and the Septic to Sewer Optimization Tool will be presented during the 2025 Jacksonville Environmental Symposium. It is valuable to those interested in pursuing similar projects to understand not only the outputs of the project, but what went in to completing the project, and how the project partners engaged to ensure a successful project. The presentation should cover the composition of steps in the project, timelines, data requirements, methodology of each task, project outputs, how these outputs will be used by Jacksonville, JEA, and the municipalities, and considerations for future projects.

Deliverable: Attendance and presentation by Dr. Ron Fick, Jr. and Dr. Tricia Kyzar at the 2025 Jacksonville Environmental Symposium. It would be ideal to also include a representative from Jacksonville who can provide their perspective on the project.

Assumptions: It is assumed that all parties will respond to communications in a timely manner.

Date of Completion: Ten (10) days following the in-person workshop (Task 2e) (October 10, 2025).

Cost for Task 2: \$80,000

Final Project Deliverables and Total Project Cost

Final Deliverables Due Date: October 10, 2025

Total Project Cost: \$200,000

Project Invoicing Schedule:

Date	Description	Amount
06/01/2024 or when the contract is finalized, whichever comes first	¼ of total project costs at contract completion	\$50,000
12/01/2024	¼ of total project costs at 6 months	\$50,000
06/01/2025	¼ of total project costs at 12 months	\$50,000
10/10/2025	Final ¼ of total project costs with delivery of final project report (Task 2f)	\$50,000