**Request for Research Proposal**

**RFRP-19-005**

**Effects of Service Life of Aluminized Steel Corrugated Pipe with Visible and Not Visible Coating Deficiencies within the Lock System**

This request is open to Florida universities with an executed Master University Agreement on file with the Florida Department of Transportation.

Details of the Services are described in Exhibit “A”, Scope of Services, attached.

The basis form of Agreement shall be a task work order issued under the Master University Agreement by the Research Center.

The maximum amount of funding available is $200,000.00 and the anticipated timeframe for the project is 24 months.

**Proposal Format Instructions:**

1. The University is encouraged to limit the proposal to no more than 30 pages. The cover page should contain the contact information for an Administrative contact and the Principal Investigator. The Executive Summary should be written in non-technical language and describe the Proposer’s capabilities and approach to accomplishing the work identified in the scope of service.
2. Provide a Management Plan demonstrating a solid knowledge of the problem and its background. It should not be a duplication of the RFRP. The Proposer should provide the names of key personnel on the Proposer’s team, as well as a resume for each individual proposed and a description of the functions and responsibilities of each key person relative to the task to be performed.
3. Provide a Technical Plan which describes the approach for accomplishing the work identified in the scope of service. Proposer should provide a description and location of the Proposer’s facilities and equipment as they current exist and as they will be employed for the purpose of this work.
4. Provide a Work Plan with estimated project hours by skill classification.

**Price Format Instructions:**

1. The Price information shall be submitted separately on the form provided and a detailed budget to support the lump sum amounts identified for each deliverable. Indirect cost is limited to 10%.

**Proposal Evaluation:**

A Technical Review Committee will review and evaluate each proposal submitted. The Committee will evaluate each technical proposal and assign a Technical Score based on the criteria identified below.

Executive Summary 10 points

Management Plan 30 points

Technical Plan 40 points

Work Plan 20 points

**Price Evaluation**

The Research Center will view the price information and assign points based on price evaluation formula. The criteria for price evaluation shall be based upon the following formula:

(Low Price/Proposer’s Price) x Price Points = Proposer’s Awarded Points

Price 10 points

**Technical Questions are due by 3:00 PM on December 18, 2018**

Technical questions should be submitted to [patti.brannon@dot.state.fl.us](mailto:patti.brannon@dot.state.fl.us) with the subject line

RFRP-19-005 Technical Questions

**PLEASE EMAIL PROPOSALS TO:**

Patti Brannon at [patti.brannon@dot.state.fl.us](mailto:patti.brannon@dot.state.fl.us)

Include in the subject line the following information: RFRP-19-005 Effects on the Service Life of Aluminized Steel Corrugated Pipe with Visible and Non Visible Coating Deficiencies within the Lock System

**PROPOSAL ARE DUE BY 3:00 PM ON February 6, 2019.** Proposals received after this date and time will not be accepted.

The Research Center will notify all proposers of the final decision on February 21, 2019.

**Special Notes:**

**Proposal will be rejected if more than one proposal is received from a University.**

**The Research Center intends to award the contract to the responsible and responsive proposer whose proposal is determined to be the most advantageous to the Department.**

Any questions related to this request should be directed to Patti Brannon at [patti.brannon@dot.state.fl.us](mailto:patti.brannon@dot.state.fl.us) or (850) 414-4616.

**Exhibit A – Scope of Service**

**Background Statement**

The Florida Department of Transportation (FDOT) allows corrugated steel pipe, manufactured in accordance with AASHTO M36, “Standard Specification for Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains” as optional drainage products. Steel with either zinc based (galvanized) or aluminum based (aluminized) coatings are allowed. The manufacturing method involves rolling the coated steel sheets into a helically corrugated pipe with continuous lock seams. Previous microscopic evaluations have revealed several occurrences of cracks and/or delaminated areas in the coating within the internal portion of the lock seams. Research is needed to determine the effects of these coating deficiencies generated during fabrication. Specifically, it is necessary to determine if these microscopic defects will generate corrosion over time, thus reducing the predicted service life of these pipes. We have seen several premature failures, some in as little as eight (8) years of service. In most cases failure has been attributed to coating damage along a corrugation or rib. It needs to be determined if aluminized or galvanized steel corrugated pipe that are compromised with these coating defects within the lock seam will exhibit premature failure when installed in a suitable environment as determined by the most recent version of the FDOT Culvert Service Life Estimator (CSLE), available from the FDOT Roadway Design, Drainage web page.

**Project Objective(s)**

Determine the effect of coating deficiencies generated within the lock seams during the fabrication and production of AASHTO M36 aluminized and galvanized steel corrugated pipe.

Determine if coating defects within the lock seams of aluminized or galvanized steel corrugated pipe or at other locations will reduce service life. Reduced service life is defined as premature failure(s) when the pipe is installed in an environment with the parameters originally used for service life prediction in the CSLE Standard Specification for Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains.

**Project Kickoff Teleconference**

The principal investigator will schedule a kickoff meeting that shall be held within the first 30 days of task work order execution. The kickoff meeting will consist of a webinar at least 30 minutes in length. The purpose of the meeting is to review the tasks, deliverables, deployment plan, timeline, and expected/anticipated project outcomes and their potential for implementation and benefits. The principal investigator shall prepare a presentation following the template provided at <http://www.fdot.gov/research/Program_Information/Research.Performance/kickoff.meeting.pdf>

The project manager, principal investigator, and research performance coordinator shall attend. Other parties may be invited, if appropriate.

**Supporting Tasks and Deliverables:**

**Task 1: Literature Review**

Perform a comprehensive review of available literature pertaining to the project background and objectives. Include possible test methodologies for determining coating deficiencies and corrosion initiation.

Deliverable 1: Upon completion of Task 1, the University will submit to the Research Center at [research.center@dot.state.fl.us](mailto:research.center@dot.state.fl.us) a report detailing the findings of the literature review.

**Task 2: Develop Testing Plan**

Determine, in coordination with Florida Department of Transportation (FDOT) Project Manager (PM), how many pipe sizes and manufacturers will be needed and what testing methodologies will be pursued. There are 4 different manufacturers and a total of 7 different FDOT approved facilities, at a minimum two different pipe sizes from each manufacturer should be evaluated.

Deliverable 2: Upon completion of Task 2, the University will submit to the Research Center at [research.center@dot.state.fl.us](mailto:research.center@dot.state.fl.us) a report detailing the specific experimentation and test methodologies to be implemented, including the number of pipes to be evaluated under specific detrimental conditions.

**Task 3: Obtain Pipe Samples**

Pipe samples shall be obtained from Florida Department of Transportation Approved Producer.

Deliverable 3: Upon completion of Task 3, the University will submit to the Research Center at [research.center@dot.state.fl.us](mailto:research.center@dot.state.fl.us) a report detailing the condition of each pipe obtained, including but not limited to the size, type, manufacturer, photographs, and noting any visual coating defects in the aluminized or galvanized coating.

**Task 4: Interim Findings**

Execute test protocols. At the midpoint of the research investigation document the findings of the executed testing protocols performed to date. Due to the inherent length of time required for corrosion to develop it is anticipated that the testing protocols would be ongoing until the end of the contract.

Deliverable 4: Upon completion of Task 4, the University will submit to the Research Center at [research.center@dot.state.fl.us](mailto:research.center@dot.state.fl.us) a report detailing the preliminary findings from the evaluation of the various pipe samples and conditions tested to date.

**Task (5): Draft Final and Closeout Teleconference**

Deliverable (5): Ninety (90) days prior to the end date of the task work order, the university will submit a draft final report to [research.center@dot.state.fl.us](mailto:research.center@dot.state.fl.us)

The draft final report will contain complete documentation of the pipes obtained, test data and results, analysis of the data and complete descriptions of the corrosion damage observed. The project objectives shall be addressed and sufficient evidence provided to identify the effect of coating deficiencies, generated during the fabrication of aluminized and galvanized steel corrugated pipe on their expected service life. As well as, identify if aluminized or galvanized steel corrugated pipe that are compromised with these coating defects within the lock seam will exhibit premature failure when installed in a suitable environment as determined by the Culvert Service Life Estimator 2015.

The draft final and final reports must follow the Guidelines for University Presentation and Publication of Research available at <http://www.fdot.gov/research/docs/T2/University.Guidelines.2016.pdf>

The report must be well-written and edited for technical accuracy, grammar, clarity, organization, and format.

Deliverable (6): Thirty (30) days prior to the end date of the task work order, the principal investigator will schedule a closeout teleconference. The principal investigator shall prepare a Powerpoint presentation following the template provided at <http://www.fdot.gov/research/Program_Information/Research.Performance/closeout.meeting.reqs.pdf>

At a minimum, the principal investigator, project manager, and research performance coordinator shall attend. The purpose of the meeting is to review project performance, the deployment plan, and next steps.

**Task (6) Final Report**

Deliverable (7): Upon Department approval of the draft final report, the university will submit the Final Report in PDF and Word formats electronically to the Research Center at [research.center@dot.state.fl.us](mailto:research.center@dot.state.fl.us) The Final Report is due by the end date of the task work order.

**Deliverables Schedule**

The Research Center must at a minimum receive a deliverable every 6-months on a project. Progress reports are not considered deliverables.

**For planning purposes April 2019 should be used as the anticipated start date of the project.**

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| Task / Deliverable Description as provided in the scope | Anticipated Date of Deliverable Submittal (month/year) | TO BE COMPLETED BY RESEARCH CENTER (performance monitoring) |
| Kickoff Meeting/Presentation |  |  |
| Deliverable 1 – Literature Review |  |  |
| Deliverable 2 – Develop Testing Plan |  |  |
| Deliverable 3 – Obtain Pipe Samples |  |  |
| Deliverable 4 – Interim Findings |  |  |
| Deliverable 5a – Draft Final Report |  |  |
| Deliverable 5b – Closeout Meeting/Presentation |  |  |
| Deliverable 6 – Final Report |  |  |

RFRP-19-005

Effects on the Service Life of Aluminized Steel Corrugated Pipe with Visible and Not Visible Coating Deficiencies within the Lock Seam

PRICE PROPOSAL

Task 1 Deliverable (Lump Sum Amount) $

Task 2 Deliverable (Lump Sum Amount) $

Task 3 Deliverable (Lump Sum Amount) $

Task 4 Deliverable (Lump Sum Amount) $

Task 5a and 5b Deliverable (Lump Sum Amount) $

Task 6 Deliverable (Lump Sum Amount) $

Proposer must attach a detailed budget to support the lump sum amount identified per task. If applicable, the following information must be included.

**Use of Subcontractor(s)**

If a subcontractor is to work on the project, describe the work the subcontractor will perform. A scope of work and budget must be provided for the subcontractor.

**Use of Graduate Student(s) and other Research Assistants**

Describe the work any student(s) will perform.

**Equipment**

Florida Administrative Code states “for statewide financial reporting purposes, all tangible personal property with a value or cost of $1,000 or more and having a projected useful life of one year or more must be capitalized. Any hardback book with a value or cost of $25 or more and having a useful life of one year or more that is circulated to students or the general public, and any hardback book with a value or cost of $250 or more that is not circulated must be capitalized. A review of the items on the Exception Property should be performed to ensure items to not fall within this category.

*Universities must adhere to the Department’s $1,000 threshold for equipment or items of lesser value appearing on the Exception Property listing. The university must provide a copy of the purchase invoice/property description/serial number and date of receipt for the equipment with the applicable task invoice.*

A description of the equipment to be purchased must be included with a copy of the quotes obtained. Justification of specific requirements for the project and why the equipment should be purchased instead of leasing (leasing of equipment is preferred) is required for all equipment.

**Expenses**

Describe any expense items to be purchased, if applicable.

**Travel**

***Standard Research Center policy is that travel to conferences is not an allowable expenditure*.**

Describe travel that will take place, including justification of the need for travel, if applicable. Include the traveler’s name/position, location(s), purpose and duration.

*If travel is budgeted, the following text must appear, as worded:*

All travel shall be in accordance with Section 112.061, Florida Statutes. Bills for travel expenses specifically authorized in the agreement shall be submitted using the Department’s Travel Form No. 300-000-06, unless the university provides proof of the Department of Financial Services approval to use an alternate travel form. The Department shall not compensate the University for lodging/hotel in excess of $150.00 per day (excluding taxes and fees).

The maximum amount of travel is limited to $(insert amount). The maximum amount of indirect cost on travel is limited to $(insert amount).