South Carolina Office of Resilience Request for Qualifications for the Town of Lamar Stormwater Plan

State Project #D30-N025-MJ

SECTION 1: GENERAL SCOPE

Overview:

The South Carolina Office of Resilience (SCOR) seeks a Stormwater Plan for the Town of Lamar in Darlington County, South Carolina. The State intends to use a U.S. Housing and Urban Development (HUD) Community Development Block Grant-Mitigation (CDBG-MIT) grant to fund this plan to assess existing drainage conditions and identify improvements throughout the Town of Lamar.

Specifically, this plan will assess the existing drainage system conditions, develop, assess, and prioritize projects, and establish an implementation strategy for such projects that will improve the drainage system and mitigate against future flooding throughout the Town of Lamar. The CDBG-MIT funding is limited and those competing for this project must have a thorough and demonstrated understanding of the constraints and limitations associated with CDBG-MIT funding as well as with the inherent academic Social Vulnerability Index (SoVI) considerations associated with Low and - Moderate Income (LMI) communities. As such, the Town of Lamar-wide plan will include a focus on specified areas within the town identified as LMI areas.

The purpose of this plan is to identify projects that will improve the drainage system and reduce potential flood impacts throughout the Town of Lamar. The plan will identify and prioritize a list of projects that include traditional infrastructure projects and natural stormwater solutions that could include projects that remove existing structures from the landscape and reclaim natural areas. Each project must meet each of the following criteria:

- Meet the following definition of a Mitigation Activity: Activities that increase resilience to disasters and reduce or eliminate the long-term risk of loss of life; injury, damage to and loss of property, and suffering and hardship, by lessening the impact of future flood events.
- Meet one of two HUD national objectives:
  - ❖ LMI Benefit Area and/or
  - ❖ Mitigation Urgent Need
- Benefit Cost Analysis (BCA) of 1 or greater

While the HUD CDBG-MIT grant is specific to seventeen counties which have been identified as Most Impacted and Distressed (MID) in terms of damage, this plan is not restricted to solutions within those designated counties. If the root cause is in a different geographic location, the plan must address the cause and location. In addition, all downstream effects of projects must be evaluated regardless of geographic location.

The final plan deliverable must have the highest level of credibility based upon data-driven, expert analysis. Therefore, the State seeks an experienced firm that is familiar with these types of projects and can work within the intent of the program. The selected firm will provide comprehensive data analysis which will stand intense public scrutiny, and the final product must be easily defensible due to its intellectual rigor. The outcome of this plan will allow and enable further grant allocations to execute the projects.

Background:

Since 2015, South Carolina has been impacted by three presidentially declared disasters: Hurricane Joaquin in 2015, Hurricane Matthew in 2016, and Hurricane Florence in 2018. Each disaster brought another Presidentially Declared Disaster Declaration and additional federal disaster recovery awards. The bulk of the damage from all three of these storms was not the wind and storm surge, but the eventual flooding from the rain falling over the State of South Carolina as well as runoff water from rivers, streams, and tributaries beyond for an extended period. The storms caused debilitating damage throughout South Carolina. Water and wind-damaged homes became unlivable. Those without the means to repair their homes were either forced to live in unsafe structures, relocate with relatives, or flee the disaster area. This strained the fabric of impacted communities – some of which had experienced damage from all 3 storms. The damage continued to be felt by the local economy as businesses lost customers and local government tax revenues diminished. One storm can cause all this destabilizing damage, three storms in four years have left many communities on the brink of collapse. The extensive flooding in the State accentuates the need for watershed-based planning. SCOR is developing and requesting plans on a watershed approach and defines resilience as the ability of communities, economies, and ecosystems within South Carolina to anticipate, absorb, recover and thrive when presented with environmental change and natural hazards. Actions to mitigate future damages need to be made to make the community more resilient before the next storm strikes. Stability can be given to these people through mitigating future flood damage.

In 2018, HUD notified the State of South Carolina that it would receive an allocation of $157,590,000 in CDBG-MIT funds, for the specific purpose of mitigation activities in the Most Impacted and Distressed (MID) counties from the 2015 Severe Storm disaster and the Most Impacted and Distressed counties from the 2016 Hurricane Matthew disaster.

In January 2020, HUD notified the State of South Carolina that it would receive $4,598,000 in supplemental CDBG-MIT grant funds for the MID counties from 2018's Hurricane Florence. The supplemental allocation brought the total State of South Carolina CDBG-MIT allocation to $162,188,000.

Most Impacted and Distressed (MID) counties include Berkeley, Calhoun, Charleston, Chesterfield, Clarendon, Darlington, Dillon, Dorchester, Florence, Georgetown, Horry, Lee, Marion, Orangeburg, Sumter, and Williamsburg.

SECTION 2: SPECIFICATIONS

Scope of Work and Deliverables:

Within 270 days of contract award, the selected firm will provide the South Carolina Office of Resilience's Mitigation Department with a Stormwater Plan that meets or exceeds the specifications outlined. The plan will be posted on the South Carolina Office of Resilience website where it must stand public scrutiny and be easily defensible. The selected firm will present a formal briefing outlining the specifics of the priorities and recommendations to successfully improve stormwater drainage systems and mitigate the flooding issues.

MILESTONE 1: PROJECT ADMINISTRATION, MEETINGS, AND DATA GATHERING

1) Provide a brief weekly email update to the South Carolina Office of Resilience's Mitigation Department for the duration of the contract.
2) Conduct a project kick-off/stakeholder meeting with the Town of Lamar officials to identify known areas of flooding or stormwater drainage concerns, identify project stakeholders, define project roles and expectations, and determine the appropriate number of public meetings. The firm will coordinate the kick-off meeting with municipal officials and staff. The firm will lead the meeting. The Town of Lamar will provide documentation of drainage infrastructure and flooding history.
    a) Kick-Off /Stakeholder Meeting: SCOR personnel will attend the meeting. The firm will inform the Town of Lamar of the goals of the planning project and seek information related to known flooding issues. The meeting will last approximately 2 hours and will be located in the Town of Lamar.
3) Conduct a public meeting(s) to allow the Town of Lamar's citizens to identify areas with flooding or stormwater drainage concerns. This information will be used to complete mapping of the areas of flooding throughout the Town of Lamar. The firm will lead the public meetings. SCOR personnel will attend the public meetings.
4) Standard Operation Procedure (SOP) and Database: SCOR has prepared a SOP for collecting and storing information in a GIS database. Using this SOP, the firm will create a GIS database that will include the information gathered throughout the duration of the project. The database will be updated during Milestone 4, Field Survey, with field collected data and the observed field inventory of the plan areas stormwater systems. This geospatial web mapping applications will support community outreach, data collection, and reporting services. The firm will develop this application using ESRI's ArcGIS Online (AGOL) platform.
    i) Public Meeting(s): The goal of the public meetings is to provide the Town of Lamar's citizens with information related to the project, seek input from them, and to provide information related to general stormwater issues. The firm will prepare hard copy maps and digital input methods so that the Town of Lamar's citizens can fill out questionnaires and report flooding issues. The meeting will last up to 4 hours and will be "drop-in" style. It is expected that additional areas of focus will be identified throughout this plan. All areas must be addressed.
    ii) Project Mailer: The mailer will be produced to introduce the project to the public and advertise the public meeting. The firm is responsible for mailing the mailer.
    iii) Questionnaires: A questionnaire will be developed to seek input from the Town of Lamar's citizens regarding their experiences with flooding within the Town of Lamar and to document the location of the flooding, how often it occurs, and the extent to which it may occur.
    iv) Project Webpage: A project webpage will be developed and hosted by the firm. The webpage will be used to post project updates, milestones, schedules, meeting information, and provide a forum for submitting questionnaires digitally. The webpage is assumed to be hosted for the life of the project, approximately 270 days
2) Conduct data gathering and desktop analysis to include extensive research of all reports, studies, plans, previously completed models, LiDAR and digital elevation/terrain data, USDA soils data, land use and land cover data, parcels, work orders, historical flood data (e.g. FEMA claims), topography, GIS data, building footprints, reported flooding, existing stormwater asset inventory, and other resources necessary to understand the existing conditions and contributing factors in the designated area. Additionally, gather information related to the South Carolina Department of Transportation (SCDOT) for recorded drawings and current and planned transportation improvement projects, existing hydraulics unit data within the vicinity of the Town of Lamar as well as all other potential sources of data located within the Town of Lamar offices, to include, but not limited to water facilities, public works departments, and river gauges. Each of the aforementioned data sets will be used to identify significant hydraulic features (e.g. inlets, culverts, and channels),

develop hydrologic and hydraulic models, and evaluate recommended drainage improvements. Map exhibits, geodatabases, and a summary of data collected will be provided.

3) Develop a geospatial inventory of significant and apparent hydraulic features (e.g. inlets, culverts, and channels) to supplement and expand upon datasets generated during the desktop analysis/data gathering. This inventory will be completed using survey-grade GPA units. Hydraulic properties, including invert elevations, size, and material will be collected.
4) Results from data gathering, desktop analysis, and the kickoff/stakeholder and public meeting (s) will be reported in PDF or GIS format (e.g. ArcGIS Online (ADOL)). This requirement must be completed within 45 days of contract award. Only after this action is accepted can the firm submit an invoice for the first 10% of the overall contract. Should the firm fail to provide the quality or quantity of research and analysis required, or fail to execute within the established time standards, the firm will make acceptable revisions and then will be issued a letter of concern. Any subsequent failures to meet time or quality standards will result in the termination of the contract.

MILESTONE 2: SITE ASSESSMENT

1) Firm will assess all sites identified during the public meeting (s) in efforts to gain a comprehensive understanding of the flooding that impacts all areas of concern noted up until this point by residents.
2) This requirement must be completed within 90 days of contract award. Only after this action is accepted can the firm submit an invoice for the first 20% of the overall contract.

MILESTONE 3: SITE RECOMMENDATION AND SELECTION

1) Using the information gathered in Milestones 1 and 2, the firm will prepare a list of identified focus areas. Utilizing metrics such as severity of flooding, number of repetitive events, number of structures affected, dollar amount of losses, LMI community presence, type of model methodology and additional items as determined, the firm will rank the focus areas in order of importance to be considered during subsequent tasks. The firm will meet with SCOR and the Town of Lamar to discuss the findings and prioritization to gain approval.
2) This requirement must be completed within 100 days of contract award. Only after this action is accepted can the firm submit an invoice for first 5% of the overall contract totaling 35%.

MILESTONE 4: FIELD SURVEY

1) Conduct a field inventory of the Town of Lamar that will include surveying and documenting size, materials, conditions, and locations of existing drainage systems throughout the sites selected in Milestone 3.
    a) Data collection will be to survey grade accuracy and includes:
        i) Elevations will meet the posted standards of the SC VRS network
        ii) All survey work shall be "Class A" surveying standard and performed in compliance with the Standards of Practice for Land Surveying in South Carolina as defined for GIS surveys
        iii) The horizontal datum is NAD 83/2011
        iv) The coordinate system is State Plane South Carolina 3200
        v) The vertical datum is NAVD 88
        vi) The unit of measurement is the US International Feet
        vii) Visual conditions and photos will be documented during the field inventory.
2) This requirement must be completed within 150 days of contract award. Only after this action is accepted can the firm submit an invoice for the first 15% of the overall contract, totaling 50%.

MILESTONE 5: EXISTING AND FUTURE CONDITIONS MODELING AND REPORT

1) Analysis
    a. Develop hydrologic and hydraulic models which account for:
        i. Future land cover
        ii. Future hydraulic setting
        iii. Changes in rainfall patterns
        iv. Problem area identification

v. Development of design criteria targets
vi. Prepare hydrologic and hydraulic models to determine discharge values and to model the 2-, 10-, 25-, 50-, and 100-year 24-hour storm. The hydrologic models shall include existing and future conditions, and anticipated changes in rainfall intensities. HEC-HMS, rational method, TR55, or USGS National Stream Flow Statistics will be used to model hydrology. The hydraulic modeling will utilize HEC-RAS 6.0 for riverine systems and culvert crossings that are in series. Individual culvert locations may be modeled using HY-8. Open channels may be modeled using Manning's equation or FlowMaster. Inlets, closed systems, and overland flow may be modeled using EPA SWMM. Attenuation may be considered in areas where significant storage behind a large culvert embankment is assumed. The existing conditions model (existing land uses, existing collection system, and existing outfalls) will be executed and verified based on previous studies, available data, reported flooding, and other data as appropriate.
vii. Provide a report and formal briefing to the South Carolina Office of Resilience's Mitigation Department. This requirement must be completed within 200 days for an additional 15%, totaling 65%.

MILESTONE 6: ALTERNATIVES ANALYSIS

1) Create an alternative analysis to remedy the problem areas including best management practices.
    a. Alternatives will include:
        i. Alternative outfalls, capacity improvements, basin diversions, stormwater detention, etc. In addition, other best management practices may be considered for implementation including green infrastructure projects in appropriate areas. The firm will screen the alternative projects in cooperation with the Town and SCOR to arrive at a set of projects and programs that will address the goals of the Town.
        ii. An assessment of a design that fully meets the defined design standards.
        iii. An assessment of a design that meets some but may not meet all the current design standards but will improve the level of service of the infrastructure to address the reported or identified flooding issue
        iv. More alternatives may include an option to improve conditions but may not meet some or all of the design standards, including a potential buyout scenario where the flooded infrastructure is removed from the problem area.
        v. Low-impact development retrofit projects may also be identified as part of the alternative analyses. These projects are anticipated to include cistern, storage and potential reuse, structure control measures within existing impervious areas, and/or pervious pavers as options to reduce and/or treat stormwater runoff from individual sites.
        vi. Stream and/or wetland restoration potential will also be evaluated as part of the alternatives analysis which may include properties outside of Town of Lamar limits.
    b. Create Summary Report of findings, including but not limited to:
        i. GIS Mapping.
        ii. Summary of the existing drainage system.
        iii. List of priority projects
        iv. Documentation of methods; and
        v. Technical data and related information.
    c. Develop a Sensitivity Analysis to plan the impact of higher flood frequency events.
    d. Provide a preliminary report and formal briefing to the South Carolina Office of Resilience's Mitigation Department. This requirement must be completed within 220 days of project award. Only after this action is accepted can the firm submit an invoice for an additional 20%, totaling 85%.

MILESTONE 7: LMI ASSESSMENT AND FINAL PROJECT RECOMMENDATIONS

1) Project Recommendations: Develop and assess new projects that have not been previously identified or proposed. These requirements must be completed within 240 days of contract award. Only after this action is accepted can the firm submit an invoice for an additional 5% of the overall contract for a running total of 90%.
   a) Create a ranking system to prioritize projects. The ranking system will include:
      i) A Benefit-Cost Analysis on each of the prioritized projects. The firm will provide that dataset to the South Carolina Office of Resilience's Mitigation Department. The Benefit-Cost Ratio of recommended projects should be 1.0 or greater.
         (1) Benefit cost ratios will be developed based on estimated implementation costs and the results of the existing and future conditions H&H models. Flood damages will be estimated using FEMA's HAZUS software and used to determine final BCRs as opposed to historical damages. HAZUS cost databases may be updated with Town of Lamar-specific economic values, if available.
      ii) In prioritizing projects, weights will be assigned to specific parameters such as depth of flooding and duration of flooding to develop an overall project preliminary score
      iii) A comprehensive assessment of the impact of the determined projects on the Low-to-Moderate Income community. Provide a report and a formal briefing to SCOR.
      iv) A comprehensive assessment of the impact of the determined projects on the environment (e.g., wetland impacts) or environmental concerns (e.g., contaminated soils). During this step, federal, state, and local permitting agencies may be consulted, as applicable.
      v) Projects that may be eligible for other sources of funding for project implementation will be noted.
      vi) A recommended phasing plan will be developed to provide the priority of project (s) and/or programs
   b) Prepare an opinion of probable cost (OPCs) for each proposed priority project. The OPC will include:
      i) An estimate of real estate costs for easements, if easements are required, based on parcel tax value, if available, or as directed by SCOR
      ii) An estimate of design, permitting, and constructions costs
      iii) The firm will prepare up to five detailed concept plans at approximately 10% level to inform the OCP
         (1) Survey of the identified project areas may be performed and may include 1' topographic data, property corners, deed research, right-of-way, utility easements, public utilities (no sue is assumed), existing structures and their finished floor elevations, trees greater than 12" dbh, and other structures within the project area. The concept plans will include a proposed plan view and an estimate of work area including an assessment of construction access. A preliminary profile will be designed to estimate grading and the limits of disturbance for the proposed project.
   c) Develop "What If" scenarios
   d) Develop a detailed scope of services, to include only preliminary design, and implementation schedule for the first phase of the project.
      i) It is anticipated that up to three projects developed during the plan will be selected for initial implementation
   e) Attendance at meetings if needed, to explain concepts and proposals. Firm must be available for call meetings and in-person meetings within 24-48 hours.
   f) Research associates, affiliates, and/or professors at Clemson University, University of South Carolina, and the National Oceanic and Atmospheric Administration may be consulted with regarding

recent published research to aid in final recommendations.

MILESTONE 8: FINAL REPORT AND BRIEFING

1) Conduct the final deliverable and all-encompassing briefing within 270 days of contract award. Only after this action is accepted can the firm submit an invoice for the remainder of the contract. The final written report and in-person briefing must include:
   a) A review and summary of the historical problems associated with systematic flooding associated disasters throughout the Town of Lamar to include the impact of sustained rainfall draining through surrounding water basins
   b) A review of the planning parameters associated with this specific assessment and its direct tie to CDBG-MIT funding for mitigation
   c) Project goals and objectives
   d) Design criteria
   e) Level of service definitions
   f) A thorough literature review of previously published infrastructure and drainage management problems in the affected areas throughout the Town of Lamar to include all previous studies which directly impact the problem at hand
   g) Coordination with all applicable agencies and organizations who are stakeholders in the study area. As a minimum, this will include the US Army Corps of Engineers, any and all watershed management agencies or civilian equivalent, the State Department of Transportation, Department of Natural Resources, Department of Health and Environmental Control, Department of Parks Recreation and Tourism, South Carolina Department of Agriculture, the US Department of Agriculture, and county and local jurisdictions affected
   h) Alternative selection criteria
   i) Project prioritization matrix, including scoring
   j) A comprehensive listing of all projects considered within the parameters of the strategy as well as a thorough review and definition of each screening criteria used to arrive at the recommended projects
   k) A prioritized list of recommended construction projects resulting from the analysis, each in terms of the highest probability of success against future disasters and their specified budget estimations. Include level of service improvements
   l) A Benefit-Cost Analysis of each project which reflects the benefit achieved by conducting the project and its direct impact upon Low- to-Moderate Income communities. The BCA assessment will occur once.
   m) A review and assessment of the environmental concerns associated with each project and an estimated timeline for the associated environmental clearance
   n) Based upon the final prioritized list of projects, a list of homes, including addresses, inside the planning area that would be impacted by any recommended infrastructure construction projects and if they are recommended for potential buyout
   o) A qualitative and quantitative impact statement upon Low-to-Moderate Income populations that each construction project will resolve concerning future disasters
   p) An analysis of each prioritized project and the benefit it provides for Low-to-Moderate Income citizens throughout the Town of Lamar concerning future flood events
   q) A holistic risk assessment of each distinct proposed construction project
   r) Estimate the project delivery cost including all aspects of federal, state, and local permitting as well as all environmental considerations and concerns for each prioritized project
   s) Anticipated permitting requirements for each project

t) Detailed concept plans (approximately 10%)
u) A general topographic schematic of the proposed projects
v) A general exhibit of the proposed projects
w) Geopolitical issues associated with the projects
x) A digital deliverable of the GIS database with metadata to SCOR
y) A digital deliverable of the developed Model database with metadata to SCOR
    - Files that are needed to run the model will be delivered and not limited to: the input file to the model, calibrated parameters, and a GIS geodatabase that includes the boundary network, drainage network, and any other associated shapefiles shale be delivered.

Unless otherwise directed, all briefings will be conducted at the South Carolina Office of Resilience at 632 Rosewood Drive in Columbia, South Carolina.

SECTION 3: SUBMITTAL INFORMATION

Submittal shall include, at a minimum, information required in the solicitation, responses to all selection criteria required by the SC Consolidated Procurement Code (found in Chapter 4 of the OSE Manual) and the following:

1. Firm's staffing proposal for this project to include:
    a. Staffing diagram; and
    b. Names and resumes of staff working on project
2. Firm's listing of completed flood mitigation studies performed within the last 5 years with Executive Summary. Include staff involved in the assessment.
3. If any responding firms include proprietary and/or trademark information, please be sure to make note of that in the submittal.

Submittal Format:

Provide one (1) electronic copy and three (3) printed copies to the South Carolina Office of Resilience's Mitigation Department.

Printed submittals must be clearly labeled on the outside of the envelope with the following wording: **"**RFQ PP-22-1601-01-TOP *Plans and Studies Services Submittal for Community Development Block Grant Mitigation (CDBG-MIT)"***,*** and the State Project Name and Number. All late submittals will be rejected.

The South Carolina Office of Resilience is not responsible for late submissions caused by delays in mail delivery or a delay in any other method of delivery.

Print size shall be 12 pt. font minimum, on 8½ by 11 paper, double-sided and must include all of the information required in this RFQ and may include any additional information that the A/E deems pertinent to the understanding and evaluation of its response.

Provide a cover page that includes: Company Name, Address, Point of Contact (Email Address and Phone Number); RFQ PP-22-1601-01-TOP Plans and Studies Services for Community Development Block Grant Mitigation (CDBG-MIT); DUNS Number, Date of Submission, and include the signed certification below:

I certify that this submittal is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting a response to this RFQ, and is in all respects fair and without collusion or fraud. I agree to abide by all conditions of the RFQ and certify that I am authorized to submit this response.

Authorized Signature (Print)	*Authorized Signature w/ Title*	*E-mail Address*

Electronic submittals must be delivered on a USB flash drive along with the printed copies to South Carolina Office of Resilience, 632 Rosewood Drive, South Carolina 29201, Attention: Mitigation Department.

Submittal Deadline:

Deadline for submission: Wednesday November 16, 2022 at 3:00 PM to the South Carolina Office of Resilience Mitigation Department at 632 Rosewood Drive, Columbia, SC 29201, Attention: Mitigation Department.

Any questions regarding this project must be submitted in writing via email no later than 3:00 PM on Wednesday, November 9, 2022. Questions should be emailed to DROMitigation@scor.sc.gov. Responses will be provided via email no later than 5:00 PM on Monday, November 7, 2022.

EXHIBIT 1

Benefit-Cost Ratio

The benefit-cost ratio is defined as the benefit divided by the estimated cost. This ratio is an expression of the money saved by implementing a project as opposed to the costs occurred by not implementing the project. A ratio less than one means the project will cost more to implement than it will save. Any ratio equal to 1 or higher justifies the project from a pure financial viewpoint.

The ratios are then sorted by quartile to award points as shown in the table below. This will weaken the cost-benefit ratio defined by a single value to account for the larger picture of the project, account for error from assumptions and methodologies and be appropriate for the stage of most projects.

Benefit-Cost Ratio Quartile	*Points*
0-25%	0
25-50%	7
50-75%	13
75-100%	20

Example BCA Quartile Worksheet

		Project ID	Project Name	Benefit	Cost	BCA	Score
First	1	20	350	Project Example 12	$707,152	$3,419,000	0.2	0
	3	14	428	Project Example 99	$1,279,630	$2,554,930	0.5	0
	4	7	16	Project Example 52	$4,443,738	$7,232,993	0.6	0
	6	22	74	Project Example 81	$3,419,958	$4,411,000	0.8	0
	7	13	88	Project Example 40	1410000	1570000	0.9	0
Second	8	6	96	Project Example 89	$1,898,125	$1,769,133	1.1	7
	9	2	38	Project Example 65	$3,288,705	$1,984,941	1.7	7
	10	9	83	Project Example 10	$8,290,905	$4,904,555	1.7	7
	11	18	199	Project Example 83	$2,142,944	$1,266,000	1.7	7
Third	13	5	64	Project Example 19	$6,427,759	$2,543,328	2.5	13
	14	3	54	Project Example 3	$6,030,940	$2,095,395	2.9	13
	15	17	198	Project Example 48	$2,239,562	$715,000	3.1	13
	16	4	55	Project Example 72	$3,562,620	$894,070	4.0	13
Fourth	17	11	85	Project Example 50	12800000	3090000	4.1	20
	18	10	104	Project Example 12	$6,424,352	$1,490,188	4.3	20
	19	16	197	Project Example 20	$5,704,992	$1,004,400	5.7	20
	20	1	19	Project Example 7	$408,932,721	$14,138,490	28.9	20