

South Carolina Office of Resilience

Request for Qualifications for

Orangeburg County Hydrologic & Hydraulic Study

State Project # D30-N011-MJ

SECTION 1: GENERAL SCOPE

Overview:

The South Carolina Office of Resilience (SCOR) seeks a Hydrologic & Hydraulic Study for Orangeburg 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 a county-wide Hydrologic & Hydraulic Study to assess existing drainage conditions and identify improvements throughout the county. Specifically, this study will assess the existing drainage systems, 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 Orangeburg County. 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 county-wide study will include a focus on specified areas within the county identified as LMI areas.

The purpose of this study is to identify projects that will improve the drainage system and reduce potential flood impacts throughout Orangeburg County. The study 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 greater than 1

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 study is not restricted to solutions within those designated counties. If the root cause is in a different geographic location, the study must address the cause and location. In addition, all downstream effects of projects must be evaluated regardless of geographic location.

The final study deliverable must have the highest level of credibility based upon data-drive, 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 study will allow and enable further grant allocations to execute the projects.

In October 2021, SCOR approved a Stormwater Drainage Study for the City of Orangeburg that will identify stormwater drainage improvements for LMI areas within the City. Therefore, the firm selected for this County-wide study must coordinate efforts with this existing City-wide study in realms such as data collection, modeling, and community and stakeholder engagement. SCOR expects strong communication between both firms, and expects that the resulting studies are coordinated, interconnected, and build upon and support one another.

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. Actions to mitigate future damages need to be made 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:**

1. Within 270 days of contract award, the selected firm will provide the South Carolina Office of Resilience's Mitigation Department with a Hydrologic & Hydraulic Study that meets or exceeds the specifications outlined. The study 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. A formal briefing;
 - b. Outlining the specifics of the priorities; as well as
 - c. Recommendations to successfully improve stormwater drainage systems and mitigate the flooding issues.
2. Provide a weekly email update and a monthly in person progress review to the South Carolina Office of Resilience's Mitigation Department for the duration of the contract.
3. Conduct a workshop with Orangeburg County municipal officials to identify known areas of flooding or stormwater drainage concerns. SCOR personnel will attend the workshop.
4. Conduct a public meeting to allow the County's citizens to identify areas flooding or stormwater drainage concerns. SCOR personnel will attend the public meeting.
5. Conduct extensive research of all reports, studies, plans, land use, and other resources necessary to understand the existing conditions and contributing factors in the designated area. Provide a report and formal briefing of all stormwater drainage issues and historical flood related data gathered to the South Carolina Office of Resilience's Mitigation Department. This requirement must be completed within 60 days of contract award. Only after this action is accepted can the firm submit an invoice for the first 20% 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.
6. Conduct a field inventory that will include surveying and documenting size, materials, conditions, and locations of existing drainage systems.

7. Analysis:
 - a. Develop current hydrologic and hydraulic models, including but not limited to:
 - 1) Rainfall – runoff; and
 - 2) Overland and pipe network flow
 - b. Develop future conditions hydrologic and hydraulic models, which account for:
 - 1) Future land cover.
 - 2) Future hydraulic setting.
 - 3) Changes in rainfall patterns.
 - 4) Problem area identification; and
 - 5) Development of design criteria targets.
 - c. Provide a report and formal briefing to the South Carolina Office of Resilience’s Mitigation Department. This requirement must be completed within 120 days of contract award. Only after this action is accepted can the firm invoice for the second 20% of the overall contract for a running total of 40%.
8. Alternative Analysis and Findings:
 - a. Create an alternative analysis to remedy the problem areas.
 - b. Create Summary Report of findings, including but not limited to:
 - 1) GIS Mapping.
 - 2) Summary of the existing drainage system.
 - 3) List of priority projects (see task 9, below)
 - 4) Documentation of methods; and
 - 5) Technical data and related information.
 - c. Develop a Sensitivity Analysis to study 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 180 days of project award. Only after this action is accepted can the firm submit an invoice for an additional 10% of the overall contract for a running total of 50%.
9. Project Recommendations: Develop and assess new projects that have not been previously identified or proposed. These requirements must be completed within 210 days of contract award. Only after this action is accepted can the firm submit an invoice for an additional 20% of the overall contract for a running total of 70%.
 - a. Prepare cost estimates for recommended improvements.
 - b. Conduct a Benefit-Cost Analysis on each of the prioritized projects and 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.
 - c. Conduct 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.
 - d. Create a ranking system to prioritize projects.
 - e. Develop “what if” scenarios.
 - f. 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.
10. 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.
 - a. The final written report and in-person briefing must include: A review of the historical problems associated with systematic flooding associated disasters throughout Orangeburg County 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. A thorough literature study of previously published infrastructure and drainage management problems in the affected areas throughout Orangeburg County to include all previous studies which directly impact the problem at hand.
- d. 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.
- e. 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.
- f. 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.
- g. 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.
- h. A review and assessment of the environmental concerns associated with each project and an estimated timeline for the associated environmental clearance. See Exhibit 1.
- i. Based upon the final prioritized list of projects, a list of homes, including addresses, inside the study area that would be impacted by any recommended infrastructure construction projects and if they are recommended for potential buyout.
- j. A qualitative and quantitative impact statement upon a Low-to-Moderate Income population that each construction project will resolve concerning future disasters.
- k. A holistic risk assessment of each distinct proposed construction project.
- l. 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.
- m. An analysis of each prioritized project and the benefit it provides for Low-to-Moderate Income citizens throughout Orangeburg County concerning future flood events.
- n. A general topographic schematic of the proposed projects.
- o. Geopolitical issues associated with the projects.

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.

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-21-3800-01-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); RFQ21-1402-01-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: Monday, February 21, 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 Monday, February 14, 2022. Questions should be emailed to DROMitigation@scor.sc.gov. Responses will be provided via email no later than 5:00 PM on Wednesday, February 16, 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	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
Second	7	13	88	Project Example 40	1410000	1570000	0.9	0
	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