

# **City Of Bennettsville Request for Qualifications for City of Bennettsville Stormwater Study HMGP- 4479 BRIC-EMA-2020-BR-194-0017**

## **SECTION 1: GENERAL SCOPE**

### **Overview:**

The City of Bennettsville seeks a Hydrologic & Hydraulic Study for City of Bennettsville, South Carolina. The City intends to use a HMGP- 4479 Building Resilient Infrastructure and Communities (BRIC) and Community Development Block Grant-Mitigation (CDBG-MIT) grant to fund a Hydrologic & Hydraulic Study to assess existing drainage conditions and identify improvements within the Crooked Creek Drainage Basin area of the City.

Specifically, this study 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 within the Crooked Creek Drainage Basin. The HMGP- 4479 BRIC and 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 HMGP- 4479 BRIC and 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 study will include a focus on all the areas in the City of Bennettsville's Crooked Creek Drainage Basin.

The purpose of this study is to identify projects that will improve the drainage system and reduce potential flood impacts within the Crooked Creek Drainage Basin. 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 the following criteria:

- Meet the following definition of the 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 by lessening the impact of future floods.
- Meet one of the two National Objectives;
  - LMI benefit area and/or
  - Mitigation Urgent Need
- Benefit Cost Analysis of greater than 1.

### **DESCRIPTION:**

The stormwater study will consist of 4 major milestones.

- 1) Surveying – LiDar and GIS data will be obtained for the project area, past and old project plans will be reviewed and incorporated into the data gathered for the delineation of major watersheds.
- 2) Delineating Watersheds – All soil maps and LiDar data will be analyzed to perform a final delineation of the watersheds in the project area.
- 3) Hydraulic Model –A stormwater model will be created. Storm simulations will be run with the model and problem areas will be documented.
- 4) Stormwater Report – This final portion of the project will summarize all of the findings and make

recommendations on the path forward to improve the flooding areas around the City of Bennettsville.

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 and expert analysis. Therefore, the City 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.

**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.

**SECTION 2: SPECIFICATIONS**

**Scope of Work and Deliverables:**

Within 270 days of contract award, the selected firm will provide the City of Bennettsville with a Drainage Master Plan for the Crooked Creek Drainage Basin that meets or exceeds the specifications outlined. The plan will be posted on the City of Bennettsville 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.

## TASK 1: PROJECT ADMINISTRATION AND MEETINGS

- 1) Provide a monthly progress review to the City of Bennettsville.
- 2) Conduct a workshop with The City of Bennettsville municipal officials to identify known areas of flooding or stormwater drainage concerns within the Crooked Creek Drainage Basin. The firm will coordinate the workshop with municipal officials and staff. The firm will lead the workshop.
  - a) It is expected that areas of focus will be identified throughout this study connected to the Crooked Creek Drainage basin. These areas must be addressed.
- 3) Conduct one public meeting to allow the City'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 City. The firm will coordinate the workshop with municipal officials and staff. The firm will lead the public meetings.
- 4) The goal of the public meetings is to provide the County'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 City's citizens can fill out questionnaires and report flooding issues.
  - i) Project Information: The information about the project will be posted on the City's website and mailed along with the City water bills. This information will be produced to introduce the project to the public and advertise the public meeting.
  - ii) Questionnaires: A questionnaire will be developed to seek input from the citizens regarding their experiences with flooding within the project area and to document the location of the flooding, how often it occurs, and the extent to which it may occur. The questionnaire will be made available at the public meeting.

## TASK 2: DATA GATHERING, ANALYSIS, AND EXISTING CONDITIONS REPORT

- 1) Conduct data gathering and analysis to include extensive research of all reports, studies, plans, land use, parcels, work orders, FEMA claims, topography, soils, GIS data, previously completed models, reported flooding, 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 the current and planned transportation improvement projects, existing hydraulics unit data within the vicinity of the City of Bennettsville, as well as all other potential sources of data located within the City offices, to include, but not limited to water facilities, public works departments, and river gauges.
- 2) Conduct a field inventory of the Crooked Creek Basin that will include surveying and documenting size, materials, conditions, and locations of existing drainage systems throughout the entire project area as determined necessary by the Project Engineer.
  - a) Example 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
- 3) Analysis
  - a) Develop hydrologic and hydraulic models which account for:
    - i) Future land cover

- ii) Future hydraulic setting
- iii) Problem area identification
- iv) Development of design criteria targets
- v) 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. Example software could include HEC-HMS, rational method, TR55, or USGS National Stream Flow Statistics for hydrology modeling. The hydraulic modeling should utilize HEC-RAS 6.0 or equivalent 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 StormCAD, EPA SWMM, or similar program. 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.
- vi) Provide a report to the City of Bennettsville.

### TASK 3: 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 City of Bennettsville to arrive at a set of projects and programs that will address the goals of the City.
    - 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.
  - 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) Provide a preliminary report and formal briefing to the City of Bennettsville.

### TASK 4: PROJECT RECOMMENDATIONS

- 1) Project Recommendations: Develop and assess new projects that have not been previously identified or proposed.

- 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.
  - ii) A comprehensive assessment of the impact of the determined projects on the Low-to-Moderate Income community.
  - iii) Projects that may be eligible for other sources of funding for project implementation will be noted.
  - iv) 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 the City of Bennettsville.
  - 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

#### TASK 5: FINAL REPORT

- 1) Conduct the final deliverable and all-encompassing 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 City of Bennettsville 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 BRIC-CDBG-MIT funding for mitigation
  - c) Project goals and objectives
  - d) Design criteria
  - e) Level of service definitions
  - f) A thorough literature study of previously published infrastructure and drainage management problems in the affected areas throughout The City of Bennettsville to include all previous studies which directly impact the problem at hand
  - g) Alternative selection criteria
  - h) Project prioritization matrix, including scoring
  - i) 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
  - j) 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
  - k) 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. Please refer to Task 4
  - l) A review and assessment of the environmental concerns associated with each
  - m) 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

- n) A qualitative and quantitative impact statement upon Low-to-Moderate Income populations that each construction project will resolve concerning future disasters
- o) An analysis of each prioritized project and the benefit it provides for Low-to-Moderate Income citizens throughout The City of Bennettsville concerning future flood events
- p) 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
- q) Anticipated permitting requirements for each project
- r) A general topographic schematic of the proposed projects
- s) A general exhibit of the proposed projects

Unless otherwise directed, all briefings will be conducted at the City of Bennettsville administration offices @ 501 East Main Street, Bennettsville, 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 City of Bennettsville (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 City of Bennettsville.

**Printed submittals must be clearly labeled on the outside of the envelope with the following wording: "RFQ HMGP- 4479 BRIC-EMA-2020-BR-194-0017-TOP Plans and Studies Services Submittal for Community Development Block Grant Mitigation (CDBG-MIT)". All late submittals will be rejected.**

The City of Bennettsville 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 BRIC-EMA-2020-BR-194-0017 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.

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*Authorized Signature (Print)  
Address*

*Authorized Signature w/ Title*

*E-mail*

Electronic submittals must be delivered on a USB flash drive along with the printed copies to City of Bennettsville, 501 East Main Steet, South Carolina 29512, Attention: Tasha Townsend.

**Submittal Deadline:**

Deadline for submission: Wednesday, September 14, 2022, at 4:00 PM to the City of Bennettsville, 501 East Main Street, Bennettsville SC 29512, Attention: Tasha Townsend.

Any questions regarding this project must be submitted in writing via email no later than 4:00 PM on Friday, September 9, 2022. Questions should be emailed to [holly.swann@bennettsville.sc.gov](mailto:holly.swann@bennettsville.sc.gov).

**EXHIBIT 1**

The final study deliverable must have the highest level of credibility based upon data-drive, expert analysis. Therefore, the City 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.

**PRIMARY FUNDING SOURCE NAME AND PROJECT#: SCEMD / FEMA, HMGP- 4479  
BRIC-EMA-2020-BR-194-0017**

**HUD NATIONAL OBJECTIVE:** Benefit to low- and moderate- income (LMI) persons, meet a need having a particular urgency

**LMI POPULATION:** The City of Bennettsville has an overall LMI population of 53%