

SE-235**PROFESSIONAL INCIDENTAL SERVICES CONTRACT****AGENCY:** South Carolina Office of Resilience**PROJECT NAME:** The Citadel Multi-Hazard Mitigation Plan Update**PROJECT NUMBER:** D30-N012-MJ**A/E NAME:** Wood Environment & Infrastructure Solutions, Inc.**ADDRESS:** 720 Gracern Road, Suite 132Columbia, SC 29210

In consideration of the mutual covenants and obligations set forth herein, the Agency and A/E (hereinafter jointly referred to as the "parties") agree to the following:

A. CONTRACT DOCUMENTS

1. Documents forming a part of this contract are, in order of precedence:
 - a. This Contract, SE-235.
 - b. A/E Proposal describing services to be provided for this project, the associated hourly billing rates for the A/E and the A/E Consultants, and the projected Reimbursable items.
 - c. Supplemental Conditions, attached if applicable.
 - d. The following other documents:
 - Attachment A - Scope of Work
 - Attachment B - Fees & Schedule
2. The contract is the entire and integrated agreement between the parties and supersedes prior negotiations, representations, or agreements, whether written or oral.

B. REPRESENTATIVES**1. Agency's Representatives**

Agency designates the individual listed below as its Representative, which individual shall have the authority to bind the Agency with respect to all matters regarding the Contract and requiring the Agency's approval or authorization:

NAME: Eric Fosmire**TITLE:** Chief of Staff & General Counsel**ADDRESS:** 632 Rosewood Drive, Columbia, SC 29201**TELEPHONE:** 803-822-9580**FAX:** 803-771-2887**EMAIL:** Eric.Fosmire@scor.sc.gov

The term "Agency" means the Agency or the Agency's Representative.

2. A/E's Representatives

A/E designates the individual listed below as its A/E's Representative, which individual shall have the authority to bind the A/E with respect to all matters regarding the Contract and requiring the A/E's approval or authorization:

NAME: Amy Crowley**TITLE:** Senior Associate Engineer, Interim Manager, PE, PMP, CFM**ADDRESS:** 104 Corporate Boulevard, Suite 407 West Columbia, SC 29169**TELEPHONE:** 615-516-8122**FAX:** _____**EMAIL:** amy.crowley@woodplc.com

The term "A/E" means the A/E or the A/E's Representative.

3. Neither the Agency nor the A/E shall change their representatives without ten days written notice to the other party.

C. A/E RESPONSIBILITIES

1. The A/E shall provide professional services as set forth in this Contract consistent with the professional skill and care ordinarily provided by A/E's practicing in the same or similar locality region under the same or similar circumstances.
2. The A/E represents that its' team is properly licensed in the jurisdiction where the Project is located to provide the services required.
3. The A/E's responsibilities commence with the award of this Contract and terminate with the payment of the final invoice by the Agency.

D. INSURANCE

1. The A/E shall procure and maintain in effect during the term of this Contract the insurance coverages described below, which insurance shall be placed with insurance companies authorized to do business in the State of South Carolina and rated A minus VII or better by the current edition of Best's Key Rating Guide or otherwise approved by Agency.
 - a. Professional Liability Insurance with limits of not less than \$1,000,000 per claim and in the aggregate. A/E shall maintain this coverage in effect during the term of this Contract and for five (5) years after the date of completion of services provided under this Contract. A/E shall give prompt written notice to Agency of all claims made against this policy during the period in which this policy is required to be maintained.
 - b. Worker's Compensation Insurance as required by the State of South Carolina with statutory limits.
 - c. Employers' Liability Insurance with limit of no less than \$1,000,000 per accident.
 - d. Automobile Liability Insurance: Insurance Services Offices (ISO) Form CA 00 01 covering Code 1 (any auto), or if A/E has no owned automobiles, Code 8 (hired) and Code 9 (non-owned), with limits not less than \$1,000,000 per accident for bodily injury and property damage.
 - e. Commercial General Liability Insurance (CGL): ISO Form CG 00 01 12 07 covering CGL on an "occurrence" basis for bodily injury and property damage, including products-completed operations, personal injury, and advertising injury, with limits no less than \$1,000,000 per occurrence. If a general aggregate limit applies, either the general aggregate limit shall apply separately to the project or the general aggregate limit shall be twice the required occurrence limit. This Contract shall be considered to be an "insured contract" as defined in the policy.
2. The A/E agrees to require Consultants to comply with the insurance provisions required of A/E pursuant to this Contract unless A/E and Agency mutually agree to modify these requirements for Consultants whose work is of relatively small scope. The A/E agrees that it will contractually obligate its Consultants to advise A/E promptly of any changes or lapses of the requisite insurance coverages and A/E agrees to promptly advise Agency of any such notices A/E receives from its Consultants. The A/E agrees that it will contractually obligate its Consultants to indemnify and hold harmless the Agency to the same extent that the A/E is required to do so as provided in this Contract.
3. The A/E shall provide certificates of insurance to the Agency that evidence compliance with the requirements in this Section.
4. Additional Insured Obligations
 - a. To the fullest extent permitted by law, the A/E shall cause the primary and excess or umbrella policies for Commercial General Liability and Automobile Liability to include the Agency, its officers, officials, employees, and volunteers, as additional insureds for claims caused in whole or in part by the A/E's negligent acts or omissions. The additional insured coverage shall be primary and non-contributory to any of the Agency's insurance policies and shall apply to both ongoing and completed operations.
 - b. Prior to performing services, and thereafter upon replacement of each required policy of insurance, the A/E shall provide to the Agency a written endorsement to the A/E's General Liability Insurance policy that (i) names the Agency, its officers, officials, employees, and volunteers, as additional insureds, and (ii) states that coverage shall not be cancelled, except with notice to the Agency.
 - c. Information concerning reduction of coverage on account of revised limits or claims paid under the General Aggregate, or both, shall be furnished by the A/E with reasonable promptness.

E. INDEMNIFICATION

1. Without limitation and notwithstanding any provision in this Contract, the A/E shall indemnify and hold harmless the Indemnitees for and against claims, damages, losses and expenses (including attorneys' fees) asserted by a third party against an Indemnitee arising out of or resulting from negligent acts or omissions of the A/E, a consultant, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself). The A/E shall not be required to indemnify an Indemnitee to the extent the Indemnitee's damages result from the Agency's own negligence.

2. Such obligation shall not be construed to negate, abridge, or reduce any other rights, including any other obligations of indemnity, which would otherwise exist as to a party or person described in this Section. As used in this paragraph, "Indemnitees" means the State (including its instrumentalities, agencies, departments, boards, and political subdivisions), the contractor, the subcontractors at all tiers, and the officers, agents and employees of all the forgoing.

F. A/E SERVICES

1. The A/E shall be fully responsible for coordinating all services under this Contract regardless of whether performed by its own employees or by consultants hired by A/E to perform a portion of its' services.
2. The A/E shall be responsible to the Agency for the services furnished to the A/E by any Consultant to the same extent as if the A/E had furnished the service itself. A/E also agrees to coordinate and resolve any inconsistencies in its work and the work of its Consultants. All of A/E's contracts with Consultants shall be in writing, signed by both parties, and shall include the following provision: "The Agency is intended to be a third-party beneficiary of this Contract."
3. The A/E shall prepare and distribute conference memoranda, meeting minutes, summaries of telephone conversations, documentation and reports as required by the Agency to maintain a comprehensive record. The State Project Number and Name as noted above shall be shown on all documents.
4. Any reference in the Contract Documents to the A/E taking action or rendering a decision with a "reasonable time" or "reasonable promptness" is understood to mean no more than ten (10) days, unless otherwise specified in the Contract Documents or otherwise agreed to by the parties.
5. Work Product Documents
 - a. The Work Product to be accomplished and submitted to the Agency shall be as defined in the Contract Documents.
 - b. The A/E shall submit to the Agency, and OSE if required, properly completed documents in the number and form requested for review and approval.
 - c. The Agency and OSE review and approval of all documents or other matters required herein shall not relieve the A/E of his professional duty of care in the preparation of the Work Product for compliance with the requirements of applicable statutes, regulations, codes, or the Manual.
5. Additional Services
 - a. The A/E may provide Additional Services after execution of this Contract without invalidating the Contract. Except for services required due to the fault of the A/E, any Additional Services provided shall entitle the A/E to compensation pursuant to negotiations and an appropriate adjustment in the A/E's schedule.
 - b. The A/E shall not proceed to provide Additional Services until the A/E receives the Agency's written authorization.

G. AGENCY'S RESPONSIBILITIES

1. The Agency shall review the Work Product and shall submit its written approval to the A/E, and OSE, if required.
2. The Agency shall provide prompt written notice to the A/E if the Agency becomes aware of any fault or defect, including errors, omissions or inconsistencies in the A/E's Work Product.
3. The Agency shall include the A/E in all communications that relate to or affect the A/E's services or professional responsibilities. Communications by and with the A/E's consultants shall be through the A/E.

H. CLAIMS AND DISPUTE RESOLUTION

1. All disputes, claims, or controversies relating to the Contract shall be resolved exclusively by the appropriate Chief Procurement Officer in accordance with Title 11, Chapter 35, Article 17 of the South Carolina Code of Laws, or in the absence of jurisdiction, only in the Court of Common Pleas for, or a federal court located in, Richland County, State of South Carolina. A/E agrees that any act by the State regarding the Contract is not a waiver of either the State's sovereign immunity or the State's immunity under the Eleventh Amendment of the United States Constitution. As used herein, the phrase "the State" includes the Agency, any governmental entity transacting business with the A/E pursuant to the Contract, and the State Fiscal Accountability Authority.
2. A/E consents that any papers, notices, or process necessary or proper for the initiation or continuation of any disputes, claims, or controversies relating to the Contract; for any court action in connection therewith; or for the entry of judgment on any award made, may be served on A/E by certified mail (return receipt requested) addressed to A/E at the address provided in the Contract or by personal service or by any other manner that is permitted by law, in or outside South Carolina. Notice by certified mail is deemed duly given upon deposit in the United States mail.
3. The A/E and Agency waive claims against each other for listed damages arising out of or relating to this Contract.
 - a. For the Agency, listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) costs suffered by a third party unable to commence work, (vi) attorney's fees, (vii) any interest, except to the extent allowed by Section K.5, (viii) lost revenue and profit lost use of the property, (ix) costs resulting from lost productivity or efficiency.

- b. For the A/E, listed damages are (i) lost revenue and profit, (ii) losses resulting from injury to business or reputation, (iii) additional or escalated overhead and administration expenses, (iv) additional financing costs, (v) attorney's fees, (vi) any interest, except to the extent allowed by Section K.5, (vii) unamortized equipment costs; and (viii) losses incurred by the A/E's consultants for the types of damages the A/E has waived as against the Agency.
4. Continuation of Work: Pending resolution of a claim or dispute, the A/E shall proceed diligently with the performance of its services under this Contract, and Agency shall continue to make payments in accordance with this Contract for all services rendered by A/E which are not the subject of the claim or dispute.

I. TERMINATION OR SUSPENSION

1. Agency Right of Suspension:

- a. The Agency may, at any time, suspend the Work, in whole or in part, with or without cause for such period of time as determined by the Agency. The A/E shall be compensated for services performed prior to notice of such suspension, except in the event the suspension was due to a default by the A/E.
- b. When the Work, in whole or in part, is resumed, the remaining amount payable to the A/E may be equitably adjusted to reflect reasonable costs actually incurred by the A/E due to delay or interruption resulting from such suspension.
- c. If the suspension exceeds ninety (90) consecutive days, the A/E's fees for the remaining services and the time schedules shall be equitably adjusted.

2. Agency Right of Termination:

- a. Termination for Cause: If the A/E defaults, persistently fails or neglects to perform the services in accordance with the Contract Documents, or fails to perform a provision of the Contract, the Agency shall provide written notice of such default, failure, or neglect to the A/E. If the A/E fails to cure such default, failure, or neglect within ten (10) days from receipt of the Agency's notice, the Agency may, without prejudice to any other right or remedy the Agency may have, terminate the Contract.
- b. Termination for Convenience: The Agency may, for its convenience, terminate all or any portion of the Work or terminate this Contract by ten (10) days written notice stating the effective date of the termination. Thereafter, the Agency shall pay the A/E for those services actually performed before the date of termination. No payments shall be made for services not actually performed, and no payment shall be made or due for lost profits for portions of the services not actually performed.

3. A/E Right of Termination:

- a. The A/E may terminate the contract if Work is stopped through no fault of the A/E, or other persons performing work either directly or indirectly for the A/E, for a period of time exceeding sixty (60) consecutive calendar days due to a court order or other public authority having jurisdiction; or a declared National emergency which requires the Work to be stopped.
 - b. Agency Failure to Make Payment: Subject to the Agency's right to withhold payments pursuant to Section K, if the Agency fails to make payments to the A/E as set forth in Section K and any other applicable provisions of the Contract Documents, the A/E may, upon fourteen (14) days prior written notice to the Agency, terminate the Contract and recover from the Agency payment for all services performed, including reasonable overhead, profit and damages applicable to the services performed through the date thereof.
4. In the event of suspension or termination for convenience, upon request of Agency and payment of all fees pursuant to this Section, A/E shall promptly provide Agency with all documents, completed or in progress on the date of termination, in electronic format. The Agency's rights to use the A/E's Work Product in the event of a termination of this Contract are set forth in the Contract.

J. MISCELLANEOUS PROVISIONS

- 1. Governing Law: The Contract, any dispute, claim, or controversy relating to the Contract, and all the rights and obligations of the parties shall, in all respects, be interpreted, construed, enforced and governed by and under the laws of the State of South Carolina, except its choice of law rules.
- 2. This Contract is formed pursuant to and governed by the South Carolina Consolidated Procurement Code and is deemed to incorporate all applicable provisions thereof and the ensuing regulations.
- 3. Severability: If it is determined that any provision of the Contract violates any law, or is otherwise invalid or unenforceable, such determination shall not impair or otherwise affect the validity, legality, or enforceability of the remaining provision or parts of the provision of the Contract Documents, which shall remain in full force and effect as if the unenforceable provision or part were deleted. In such case the Contract shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

4. **Economic Conflict of Interest:** The A/E shall not have or exercise any official responsibility regarding a public contract in which the A/E, or a business with which he is associated, has an economic interest. A person working for the A/E shall not have or exercise any official responsibility regarding a public contract in which the person, an individual with whom he is associated, or his family members have an economic interest. If the A/E is asked by any person to violate, or does violate, either of these restrictions, the A/E shall immediately communicate such information to the procurement officer. The state may rescind, and recover any amount expended as a result of, any action taken, or contract entered in violation of this provision. The terms "business with which he is associated," "economic interest," "family member," "immediate family," "individual with whom he is associated," "official responsibility" and "person" have the meanings provided in S.C. Code Ann. § 8-13-100.
5. **Drug-Free Workplace:** The A/E must comply with the Drug-Free Workplace Act, S.C. Code Ann. §§ 44-107-10, et seq. The A/E certifies to the Agency that A/E will provide a Drug-Free Workplace, as defined by S.C. Code Ann. §§ 44-107-20(1).
6. **False Claims:** According to SC Code § 16-13-240, "a person who by false pretense or representation obtains the signature of a person to a written instrument or obtains from another person any chattel, money, valuable security, or other property, real or personal, with intent to cheat and defraud a person of that property is guilty" of a crime.
7. **Non-Indemnification:** It is unlawful for a person charged with disbursements of state funds appropriated by the General Assembly to exceed the amounts and purposes stated in the appropriations per S.C. Code Ann. § 11-9-20. It is unlawful for an authorized public officer to enter into a contract for a purpose in which the sum is in excess of the amount appropriated for that purpose. It is unlawful for an authorized public officer to divert or appropriate the funds arising from any tax levied and collected for any one fiscal year to the payment of an indebtedness contracted or incurred for a previous year per S.C. Code Ann. § 11-1-40.
8. **Assignment:** The Agency and A/E, respectively, bind themselves, their agents, successors, assigns, and legal representatives to this Contract. Neither the Agency nor the A/E shall assign this Contract without the written consent of the other. S.C. Code Ann. Reg. 19-445.20180 provides as follows: "No State contract is transferable, or otherwise assignable, without the written consent of the Chief Procurement Officer, the head of a purchasing agency, or the designee of either; provided, however, that a contractor may assign monies receivable under a contract after due notice from the contractor to the State."
9. **Force Majeure:** In the event A/E is hindered, delayed or prevented from performing its obligations under this Contract as a result of any fire, flood, landslide, tornado or other act of God, malicious mischief, theft, strike, lockout, other labor problems, shortages of material or labor, or any other cause beyond the reasonable control of A/E, the time for completion of A/E's work shall be extended by the period of resulting delay.
10. **Open Trade Representation:** By signing this Contract, A/E represents that A/E is not currently engaged in the boycott of a person or an entity based in or doing business with a jurisdiction with whom South Carolina can enjoy open trade, as defined in SC Code § 11-35-5300. During the contract term, including any renewals or extensions, A/E will not engage in the boycott of a person or an entity based in or doing business with a jurisdiction with whom South Carolina can enjoy open trade, as defined in SC Code § 11-35-5300.

K. COMPENSATION

1. Basic Services:

The Agency shall compensate the A/E for the services rendered as described in the Contract Documents in Section A in the amount of:

\$ 41,380.00

2. Additional Services:

The Agency shall compensate the A/E for Additional Services rendered as described in the Contract Documents in Section A in the amount of:

\$ TBD

3. Reimbursable Expenses:

For Reimbursable Expenses the compensation shall be the actual costs incurred by the A/E and the A/E's consultants. The A/E and the A/E's consultants shall be allowed a reasonable markup not to exceed 10% for administrative cost related to Reimbursable Expenses.

The Agency shall compensate the A/E for Reimbursable Expenses described in the Contract Documents in Section A as a not-to-exceed amount of:

\$ Included

- 4. Unless authorized in writing by the Agency prior to incurring the expense, no expense for transportation, travel, or subsistence will be reimbursable to the extent the expense exceeds the amount for which a state employee would be reimbursed under the Travel Regulations. Travel Regulations means the State Fiscal Accountability Authority's Regulations for Reimbursement for Travel and Subsistence Expenses, Disbursement Regulations pdf found at [<https://cg.sc.gov/guidance-and-forms-state-agencies/cgs-accounting-policies-and-procedures>]. There shall be no charge for time spent in travel.
- 5. Progress Payments: Payments for services shall be made monthly in proportion to services performed. The Agency shall make payments to the A/E of undisputed amounts due for services performed by the A/E within twenty-one (21) days of receipt of the A/E's invoice. The A/E shall make progress payments to the consultants within seven (7) days of the receipt by the A/E of each payment from the Agency. Payments due to the A/E and unpaid under this Contract shall bear interest only if and to the extent allowed by S.C. Code Ann. §§ 29-6-10 through 29-6-60. Amounts due to the A/E shall bear interest at the rate of one percent a month or a pro rata fraction thereof on the unpaid balance as may be due.
- 6. The Agency shall not withhold amounts from the A/E's compensation to impose a penalty.

AGENCY: _____

BY: _____


(Signature of Representative)

PRINT NAME: Benjamin I. Duncan, II

PRINT TITLE: Chief Resilience Officer

DATE: 6/23/2022

A/E: _____

BY: _____


(Signature of Representative)

PRINT NAME: Amy Crowley

PRINT TITLE: Senior Associate Engineer, Interim
Manager, PE, PMP, CFM

DATE: 6/16/22

ATTACHMENT A

Scope of Work for The Citadel Multi-Hazard Mitigation Plan Update State Project # D30-N012-MJ

PROJECT UNDERSTANDING

This scope of services is based on the scope of work and deliverables outlined in the Request for Qualifications (RFQ) dated February 25, 2022. SCOR wishes to complete a Multi-Hazard Mitigation Plan Update for the Citadel in Charleston, SC within 300 days of receiving notice to proceed. The study is funded by a US Housing and Urban Development (HUD) Community Development Block Grant-Mitigation (CDBG-MIT) grant.

SCOPE OF SERVICES

Wood Environment and Infrastructure Solutions, Inc. (Wood) will provide the services set forth below.

TASK 1: PROJECT ADMINISTRATION AND MEETINGS

- A. Within 300 days of contract award, the selected firm will provide the South Carolina Office of Resilience's Mitigation Department with a Multi-Hazard Mitigation Plan Update 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. Updates and improvements to The Citadel's Multi-Hazard Mitigation Plan in efforts to increase resilience and decrease the Citadel's vulnerability to the risks posed by a multitude of natural and non-natural hazards.
- B. Provide a brief weekly email update and a monthly progress review to the South Carolina Office of Resilience's Mitigation Department for the duration of the contract.
- C. Conduct a meeting with The Citadel's Enterprise Risk Management Council (ERMC) to identify developments in mitigation goals and objectives, areas of concern in the current Hazard Mitigation Plan, and an overall review of the Scope of Work and timeline before work begins. This meeting will provide a framework for the Multi-Hazard Mitigation Plan update.
 - a. Work with the ERMC to develop a Hazard Mitigation Planning Committee (HMPC) to create a community and stakeholder outreach and engagement plan. The HMPC will also be charged with annual review of the plan.

TASK 2: DATA GATHERING AND ANALYSIS

This task includes the following:

- A. Conduct extensive research of all reports, studies, plans, authorities, policies, land use, and other resources necessary to understand the existing conditions of the project area. Use this information to develop a Hazard Identification and Vulnerability Assessment.
 - a. Specifically, collect and summarize local risk assessment findings and mitigation actions,
 - b. State-level risk assessment findings and studies, new program initiatives, and proposed mitigation actions, and
 - c. Review regional and campus profiles, hazard identifications, and vulnerability assessments to include an analysis of South Carolina's and Charleston's Hazard Mitigation Plans.
 - d. With the HMPC, identify assets and the risk associated with each hazard's impact upon such assets.
 - e. Identify consequence analysis for each hazard.
 - f. This will ensure that this updated Multi-Hazard Mitigation Plan will be eligible for the Emergency Management Accreditation Program.
 - g. Complete a vulnerability assessment for each hazard.
 - h. Integrate this local data, mitigation actions, state-level analysis, and program initiatives into the Multi-Hazard Mitigation Plan Update.

- i. It is expected that the selected firm will obtain copies of relevant local jurisdiction plans, ordinances, maps, damage data, and other GIS data.
 - B. Provide a report and formal briefing of all hazards, both natural and non-natural, the risks they pose, and the Citadel's vulnerabilities to such hazards gathered to the South Carolina Office of Resilience's Mitigation Department. 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. 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.
 - C. Conduct an evaluation of the existing plan's strengths, weaknesses, and utility.²
 - D. Develop a Capability Assessment
 - a. Establish the Citadel's current capabilities and targets to identify both potential shortcomings and solutions to such shortfalls such as business partnerships, mutual aid agreements, and mitigation activities
 - E. Develop Multi-Hazard Mitigation Plan Update
 - a. Develop mitigation goals, actions, and an implementation plan.
 - b. Include in the Hazard Mitigation Plan update the process for implementing planning activities including the following plan development requirements:
 - i. Participation of agencies, stakeholders, and the public
 - ii. Hazard identification and risk/vulnerability assessment
 - iii. Mitigation strategy
 - iv. Plan adoption
 - v. Plan maintenance
 - vi. Activities include updated hazard mitigation goals, updated hazard mitigation actions, updated hazard mitigation capabilities, summary of presidential disaster declarations, and meetings and workshops with state and local partners
 - c. The resulting update must be a FEMA approved plan
 - F. Provide a report and formal briefing to the South Carolina Office of Resilience's Mitigation Department. This requirement must be completed within 150 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%.
- E. Stormwater Utility System Mapping (If Applicable)
1. If, during stormwater data collection, the A/E's field crews observe odors, sheens, or potential illicit discharges, the A/E will notify the SCOR within the same business day, if possible, but no later than 24 hours from the time of observation. Additionally, if the A/E's field crews observe dry weather flows, the Consultant will record the location of the dry weather flow and report it to SCOR. SCOR will notify the appropriate entity within 24 business hours.
 2. Open Channel Cross Sections (Major Systems)
The A/E will utilize FEMA cross section data, if appropriate and relatively recent, for hydraulic modeling purposes. Where FEMA cross section data does not exist or requires augmentation, the A/E will obtain field survey data consisting of 6-point cross sections (left overbank, left top of bank, left bottom of bank, right bottom of bank, right top of bank, right overbank). Cross sectional information outside the limits of the 6-point sections will be based on the best available information (GIS topography, DEMs, etc.). Channel lining and bed type will also be collected. For areas with no FEMA cross-sectional data, the A/E will collect cross-sections approximately every 200-300 feet (average) and upstream/downstream of stream all crossings.
 3. Bridges
Bridges requiring survey for modeling purposes will include dimensional and elevation data as necessary for accurately modeling backwater effects on the hydraulic model. Bridge data will include shots parallel to the road representing the road overtopping elevation, bridge deck thickness, location and height of railing, pier location and dimensions, and underlying channel and abutment dimensions and elevations.
 4. Culverts
Culverts at stream crossings will be characterized by two pipe ends with properties to be collected. Sufficient dimensional and elevation data will be collected to accurately model backwater effects of culverts within the *Primary System*. Pipe ends will be connected with a Civil 3D pipe object or linework representing the culvert footprint if Civil 3D cannot accommodate the specific configuration. Multi-barrel culverts shall include two pipe ends for each barrel. Additionally, culverts will include 5 ground shots representing the overtopping

profile of the above road/train embankment as follows: one directly above the culvert, 25 and 50 feet up-station of the original shot, and 25 and 50 feet down-station of the original shot.

5. Dams and Impoundments
None included in this project at this time.
6. Open Channel Cross Sections (Ditches)
A typical single channel measurement (top width, bottom width, depth, and liner type) will be measured. The channel length and horizontal location will be digitized from best available data (aerial photography, GIS topography, etc.) and the channel measurement will be inferred onto the digitized line as representation of the entire channel length. Channel longitudinal slope will be estimated based on best available information (preferably by using elevational data from upstream/downstream bounding structures).
7. Closed System Structures
Closed systems will consist of a variety of types of structures and will be collected. Structure types include catch basins, drop inlets, junction boxes, pipe ends, slab top inlets, underground pipe junctions, and yard inlets. Properties to be collected include structure type; structure dimensions; unique structure ID number; x and y coordinates; structure elevation; depth of structure; pipe in/out sizes, materials, and invert elevations; and obstruction assessment. In the case of pipe ends, information regarding the end treatment will also be collected (headwall, mitered, flared end section, stub, etc.).
8. Closed System Pipes
Pipes which connect closed system structures will be located and included in field survey data. Pipe properties include upstream structure, downstream structure and pipe shape, size, invert elevations, slopes, and material.
9. Difficult Access (DA) Structures
There will be some structures which cannot be accessed in the field for various reasons. Access limitations could include sedimentation, debris, structure being covered or paved over, access problems, fences/security, etc. A reasonable attempt to access or locate the structure must be made. The A/E will devote approximately 5 minutes attempting to locate system structures. If accessing or locating is not possible, then an approximate location will be stored for the structure and a report provided to the City for resolution by designated City staff. The City will resolve DA Structure issues. Once the structure is made accessible, the Consultant will re-visit the structure and collect the missing data.

If applicable, Wood will develop design criteria targets to determine level of service performance by each of the analyzed systems. The level of service will be defined by local design standards (if any), SCDOT design criteria, SCOR or University input, and/or other published engineering guidelines/standards. Wood will prepare hydrologic and hydraulic models to determine discharge values and to model the 2-, 10-, 25-, 50-, and 100-year 24-hour storm using a combination of models depending on the system that is analyzed. 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 StormCAD, EPA SWMM, or similar program. Attenuation may be considered in areas where significant storage behind a large culvert embankment is assumed.

Wood will prepare a report to document the data gathered in Task 2 and to summarize the modeling and level of service performance of the existing stormwater infrastructure. Wood will present the findings of this task in a formal briefing to SCOR staff as part of the meetings included in Task 1.

TASK 3: ALTERNATIVES ANALYSIS

- A. Create an alternative analysis for each identified hazard.
- B. Create Summary Report of findings, including but not limited to:
 - a. GIS Mapping.
 - b. Summary of the existing systems.
 - c. List of priority projects
 - d. Documentation of methods; and
 - e. Technical data and related information.
- C. Develop a Sensitivity Analysis to study the impact of higher frequency natural and nonnatural hazard 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 215 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%.

TASK 4: PROJECT RECOMMENDATIONS

Develop and assess new projects that have not been previously identified or proposed. These requirements must be completed within 270 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.

TASK 5: FINAL REPORT

Conduct the final deliverable and all-encompassing briefing within 300 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. A review of the historical problems associated with systematic flooding and all other relevant hazards, both natural and non-natural, throughout The Citadel
 - 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 flood management problems in the affected areas throughout The Citadel 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, SC Emergency Management Division, Citadel Faculty and Staff, the Citadel's Enterprise Risk Management Council, the Citadel's Hazard Mitigation Planning Committee, 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. The Benefit-Cost Analysis for each project should reflect the benefit achieved by conducting the project and its direct impact upon Low- to-Moderate Income communities. See Exhibit 1 for information regarding BCAs.
 - h. A review and assessment of the environmental concerns associated with each project and an estimated timeline for the associated environmental clearance.
 - i. A qualitative and quantitative impact statement upon a Low-to-Moderate Income population that each construction project will resolve concerning future disasters.
 - j. A holistic risk assessment of each distinct proposed construction project.

- k. 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.
- l. An analysis of each prioritized project and the benefit it provides for Low-to-Moderate Income citizens throughout The Citadel concerning future flood events and other hazards, both natural and non-natural.
- m. A general topographic schematic of the proposed projects.
- n. Geopolitical issues associated with the projects.
- o. Multi-Hazard Mitigation Plan Update Implementation, Maintenance, and Monitoring
 - i. Establish a strategy to implement, maintain, and monitor the update through yearly HMPC review meetings
- p. Unless otherwise directed, all briefings will be conducted at the South Carolina Office of Resilience at 632 Rosewood Drive in Columbia, South Carolina.



HENRY D. MCMASTER, Governor
BENJAMIN I. DUNCAN II, Chief Resilience Officer

ATTACHMENT B

Fees & Schedule
for
The Citadel Multi-Hazard Mitigation Plan Update
State Project # D30-N012-MJ

ADDITIONAL SERVICES

Any services not specifically provided for in the above scope will be billed as additional services and performed at our then current hourly rates. Additional services we can provide include, but are not limited to, the following:

- Grant applications
- FEMA map updates or permitting
- Water quality modeling
- NPDES Phase II permitting assistance
- Additional concept design beyond identified in this scope
- Final design
- Utility locations and/or Subsurface Utility Exploration

SCHEDULE

We will provide our services as expeditiously as practicable with the goal of meeting the following schedule:

- Task 1 Project Administration, Meetings, Data Gathering & Analysis
- Task 2 Capability Assessment & Multi-Hazard Mitigation Plan Update Report – 120 days from NTP
- Task 3 Alternatives Analysis Report – 180 days from NTP
- Task 4 Project Recommendations & LMI Assessment – 240 days from NTP
- Task 5 Final Report – 300 days from NTP

FEES AND PAYMENT

Wood Environment and Infrastructure Solutions, Inc. (Wood) will perform the services in Tasks 1-5 for the total lump sum labor fee of \$41,380.00.

Lump sum fees will be invoiced based on milestone delivery. Payment will be due within 25 days of your receipt of the invoice and should include the invoice number and Wood project number.

Milestone 1: Project Administration, Meetings, Data Gathering & Analysis	\$8,276 (20% of total)
Milestone 2: Capability Assessment & Multi-Hazard Mitigation Plan Update Report	\$8,276 (20% of total)
Milestone 3: Alternatives Analysis Report	\$4,138 (10% of total)
Milestone 4: Project Recommendations & LMI Assessment	\$8,276 (20% of total)
Milestone 5: Final Report	\$12,414 (30% of total)

Signed: Amy Crowley Date: 6/16/22
 Amy Crowley, Senior Associate Engineer, Interim Manager, PE,
 PMP, CFM
 Wood Environment & Infrastructure Solutions, Inc.

Task	Item	Angela		Ranger		Lyndee		Total Hours	Total Fee	Negotiated Fee	
		David Stroud	Vandelay	Amy Crowley	Abby Moore	Ruffins	Weaver				
		\$ 155.00	\$ 150.00	\$ 160.00	\$ 110.00	\$ 95.00	\$ 70.00				
-	Weekly Updates		10					10	\$ 1,550.00	1,550.00	
-	Monthly Updates		50	10				60	\$ 9,250.00	2,950.00	In person briefing at the beginning and end of the planning process. Other Monthly briefings to be virtual
1	HMPC Coordination		1					3	\$ 345.00	344.00	The amount (hours) for monthly briefings was reduced by \$6,300
1	Public & Stakeholder Coordination		1					3	\$ 345.00	345.00	
1	HMPC & Public Kickoff Meetings - In Person		12		2			18	\$ 2,460.00	2,460.00	
2	Hazard Identification		1	1				4	\$ 505.00	505.00	
2	Asset Inventory		1	1	2		8	12	\$ 1,095.00	1,095.00	
2	Natural Hazards Risk & Vulnerability Assessment		1	2	40	65	70	178	\$ 15,950.00	12,250.00	The amount for development of the HIRA (hours) was reduced by \$3,700
2	Technological Hazards Risk & Vulnerability Assessment		1	1		16	6	24	\$ 2,255.00	2,255.00	
2	HMPC Meeting #2 - Virtual		2		2	2		6	\$ 720.00	720.00	
2	SCOR HIRA Briefing - In Person		6					6	\$ 930.00	930.00	
3	Capability Assessment		1	1		10		12	\$ 1,265.00	1,265.00	
4	Mitigation Strategy Update		1	1	12			14	\$ 1,635.00	1,635.00	
4	HMPC Meeting #3 - Virtual		2		2	2		6	\$ 720.00	720.00	
5	Plan Implementation and Maintenance		1			2		3	\$ 345.00	345.00	
6	Draft Plan Document		1	3	8	12	6	30	\$ 3,075.00	3,075.00	
6	HMPC & Public Kickoff Meetings - In Person		12		2	4		18	\$ 2,460.00	2,460.00	
6	SCOR Draft Plan Briefing - In Person		6					6	\$ 930.00	930.00	Task 6 and 7 will be combined into Task 8 for final deliverable
7	Preliminary Project Review Supplement		2		6			8	\$ 970.00	970.00	
7	SCOR Project Review Supplement Briefing		6					6	\$ 930.00	930.00	
7	Project Recommendations Supplement		2		6		4	12	\$ 1,250.00	1,250.00	
7	SCOR Project Recommendations Briefing		6					6	\$ 930.00	930.00	
8	Final Draft Plan Submission		1			4		5	\$ 535.00	535.00	
8	SCOR Final Plan Deliverables Briefing		6					6	\$ 930.00	930.00	
Subtotal Hours		133	10	10	82	127	94	456			
Total Fee		\$ 20,615.00	\$ 1,500.00	\$ 1,600.00	\$ 9,020.00	\$ 12,065.00	\$ 6,580.00		\$ 53,380.00		New Total Amount

2022/2023	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Project Tasks										
Initial Coordination with Office of Resilience and The Citadel	█									
Task 1: Organize – Kickoff Meeting	█									
Task 2: Develop HIRA	█	█	█	█						
Task 3: Develop Capability Assessment			█	█	█					
Task 4: Develop Mitigation Goals and Mitigation Strategy			█	█	█					
Task 5: Plan Implementation & Maintenance				█	█	█	█	█	█	█
Task 6: Draft Plan						█	█	█	█	█
Task 7: Project Review Supplement							█	█	█	█
Task 8: Final Plan Submission & Approval Support								█	█	█
Committee and Public Meetings										
HMPC Meeting #1 – Kickoff: Planning Process		█								
HMPC Meeting #2 – HIRA Update				█						
HMPC Meeting #3 – Mitigation Goals & Strategy					█					
HMPC Meeting #4 – Final Draft						█				
Public Meeting #1 – Kickoff: Planning Process		█								
Public Meeting #2 – Final Draft						█				