

STATE OF TEXAS §
 §
COUNTY OF FORT BEND §

AGREEMENT FOR PROFESSIONAL ENGINEERING SERVICES

THIS AGREEMENT is made and entered into by and between Fort Bend County, (hereinafter “County”), a body corporate and politic under the laws of the State of Texas, and Freese and Nichols, Inc. (hereinafter “Contractor”), a company authorized to conduct business in the State of Texas.

WITNESSETH

WHEREAS, County desires that Contractor provide certain professional engineering services on behalf of County for County’s obligations under the U.S. Army Corps of Engineers’ Planning Assistance to States Program (hereinafter “Services”) pursuant to SOQ 14-025; and

WHEREAS, Contractor represents that it is qualified and desires to perform such services.

NOW, THEREFORE, in consideration of the mutual covenants and conditions set forth below, the parties agree as follows:

AGREEMENT

Section 1. Scope of Services

Contractor shall render Services to County as defined in the Proposed Scope of Services (attached hereto as Exhibit A). Any services to be performed not included in the Proposed Scope of Services (hereinafter “Additional Services”) must be authorized in writing by the County Engineer or his designee prior to performance thereof by Contractor.

Section 2. Personnel

2.1 Contractor represents that it presently has, or is able to obtain, adequate qualified personnel in its employment for the timely performance of the Scope of Services required under this Agreement and that Contractor shall furnish and maintain, at its own expense, adequate and sufficient personnel, in the opinion of County, to perform the Scope of Services when and as required and without delays.

2.2 All employees of Contractor shall have such knowledge and experience as will enable them to perform the duties assigned to them. Any employee of Contractor who, in the

opinion of County, is incompetent or by his conduct becomes detrimental to the project shall, upon request of County, immediately be removed from association with the project.

Section 3. Compensation and Payment

3.1 Contractor's fees shall be calculated at the rates set forth in the attached Exhibit A. The Maximum Compensation for the performance of Services within the Scope of Services described in Exhibit A is one hundred sixty thousand dollars and 00/100 (\$160,000.00). In no case shall the amount paid by County under this Agreement exceed the Maximum Compensation without an approved change order.

3.2 All performance of the Scope of Services by Contractor including any changes in the Scope of Services and revision of work satisfactorily performed will be performed only when approved in advance and authorized by County.

3.3 County will pay Contractor based on the following procedures: Upon completion of the tasks identified in the Scope of Services, Contractor shall submit to County staff person designated by the County Engineer, one (1) electronic (pdf) copy and two (2) original hard copies of invoices showing the amounts due for services performed in a form acceptable to County. County shall review such invoices and approve them within 30 calendar days with such modifications as are consistent with this Agreement and forward same to the Auditor for processing. County shall pay each such approved invoice within thirty (30) calendar days. County reserves the right to withhold payment pending verification of satisfactory work performed.

Section 4. Limit of Appropriation

4.1 Contractor clearly understands and agrees, such understanding and agreement being of the absolute essence of this Agreement, that County shall have available the total maximum sum of one hundred sixty thousand dollars and 00/100 (\$160,000.00) specifically allocated to fully discharge any and all liabilities County may incur.

4.2 Contractor does further understand and agree, said understanding and agreement also being of the absolute essence of this Agreement, that the total maximum compensation that Contractor may become entitled to and the total maximum sum that County may become liable to pay to Contractor shall not under any conditions, circumstances, or interpretations thereof exceed one hundred sixty thousand dollars and 00/100 (\$160,000.00).

Section 5. Time of Performance

Time for performance of the Scope of Services under this Agreement shall begin with receipt of the Notice to Proceed and end no later than thirty-six (36) months thereafter. Contractor shall complete the tasks described in the Scope of Services, within this time or within such additional time as may be extended by the County.

Section 6. Modifications and Waivers

6.1 The parties may not amend or waive this Agreement, except by a written agreement executed by both parties.

6.2 No failure or delay in exercising any right or remedy or requiring the satisfaction of any condition under this Agreement, and no course of dealing between the parties, operates as a waiver or estoppel of any right, remedy, or condition.

6.3 The rights and remedies of the parties set forth in this Agreement are not exclusive of, but are cumulative to, any rights or remedies now or subsequently existing at law, in equity, or by statute.

Section 7. Termination

7.1 Termination for Convenience – County may terminate this Agreement at any time upon forty-eight (48) hours written notice.

7.2 Termination for Default

7.2.1 County may terminate the whole or any part of this Agreement for cause in the following circumstances:

7.2.1.1 If Contractor fails to perform services within the time specified in the Scope of Services or any extension thereof granted by the County in writing;

7.2.1.2 If Contractor materially breaches any of the covenants or terms and conditions set forth in this Agreement or fails to perform any of the other provisions of this Agreement or so fails to make progress as to endanger performance of this Agreement in accordance with its terms, and in any of these circumstances does not cure such breach or failure to County's reasonable satisfaction within a period of ten (10) calendar days after receipt of notice from County specifying such breach or failure.

7.2.2 If, after termination, it is determined for any reason whatsoever that Contractor was not in default, or that the default was excusable, the rights and obligations of the parties shall be the same as if the termination had been issued for the convenience of the County in accordance with Section 7.1 above.

7.3 Upon termination of this Agreement, County shall compensate Contractor in accordance with Section 3, above, for those services which were provided under this Agreement prior to its termination and which have not been previously invoiced to County. Contractor's final invoice for said services will be presented to and paid by County in the same manner set forth in Section 3 above.

7.4 If County terminates this Agreement as provided in this Section, no fees of any type, other than fees due and payable at the Termination Date, shall thereafter be paid to Contractor.

Section 8. Ownership and Reuse of Documents

All documents, data, reports, research, graphic presentation materials, etc., developed by Contractor as a part of its work under this Agreement, shall become the property of County upon completion of this Agreement, or in the event of termination or cancellation thereof, at the time of payment under Section 3 for work performed. Contractor shall promptly furnish all such data and material to County on request.

Section 9. Inspection of Books and Records

Contractor will permit County, or any duly authorized agent of County, to inspect and examine the books and records of Contractor for the purpose of verifying the amount of work performed under the Scope of Services. County's right to inspect survives the termination of this Agreement for a period of four years.

Section 10. Insurance

10.1 Prior to commencement of the Services, Contractor shall furnish County with properly executed certificates of insurance which shall evidence all insurance required and provide that such insurance shall not be canceled, except on 30 days' prior written notice to County. Contractor shall provide certified copies of insurance endorsements and/or policies if requested by County. Contractor shall maintain such insurance coverage from the time Services commence until Services are completed and provide replacement certificates, policies and/or endorsements for any such insurance expiring prior to completion of Services. Contractor shall obtain such insurance written on an Occurrence form (or a Claims Made form for Professional Liability insurance) from such companies having Best's rating of A/VII or better, licensed or approved to transact business in the State of Texas, and shall obtain such insurance of the following types and minimum limits:

10.1.1 Workers' Compensation insurance. Substitutes to genuine Workers' Compensation Insurance will not be allowed. Employers' Liability insurance with limits of not less than \$1,000,000 per injury by accident, \$1,000,000 per injury by disease, and \$1,000,000 per bodily injury by disease.

10.1.2 Commercial general liability insurance with a limit of not less than \$1,000,000 each occurrence and \$2,000,000 in the annual aggregate. Policy shall cover liability for bodily injury, personal injury, and property damage and products/completed operations arising out of the business operations of the policyholder.

10.1.3 Business Automobile Liability insurance with a combined Bodily Injury/Property Damage limit of not less than \$1,000,000 each accident. The policy shall cover liability arising from the operation of licensed vehicles by policyholder.

10.1.4 Professional Liability insurance may be made on a Claims Made form with limits not less than \$1,000,000.

10.2 County and the members of Commissioners Court shall be named as additional insured to all required coverage except for Workers' Compensation and Professional Liability. All Liability policies including Workers' Compensation written on behalf of Contractor, excluding Professional Liability, shall contain a waiver of subrogation in favor of County and members of Commissioners Court.

10.3 If required coverage is written on a claims-made basis, Contractor warrants that any retroactive date applicable to coverage under the policy precedes the effective date of the contract; and that continuous coverage will be maintained or an extended discovery period will be exercised for a period of 2 years beginning from the time that work under the Agreement is completed.

Section 11. Indemnity

CONTRACTOR SHALL INDEMNIFY AND DEFEND COUNTY AGAINST ALL LOSSES, LIABILITIES, CLAIMS, CAUSES OF ACTION, AND OTHER EXPENSES, INCLUDING REASONABLE ATTORNEYS FEES, ARISING FROM ACTIVITIES OF CONTRACTOR, ITS AGENTS, SERVANTS OR EMPLOYEES, PERFORMED UNDER THIS AGREEMENT THAT RESULT FROM THE NEGLIGENT ACT, ERROR, OR OMISSION OF CONTRACTOR OR ANY OF CONTRACTOR'S AGENTS, SERVANTS OR EMPLOYEES.

Section 12. Confidential and Proprietary Information

12.1 Contractor acknowledges that it and its employees or agents may, in the course of performing their responsibilities under this Agreement, be exposed to or acquire information that is confidential to County. Any and all information of any form obtained by Contractor or its employees or agents from County in the performance of this Agreement shall be deemed to be confidential information of County ("Confidential Information"). Any reports or other documents or items (including software) that result from the use of the Confidential Information by Contractor shall be treated with respect to confidentiality in the same manner as the Confidential Information. Confidential Information shall be deemed not to include information that (a) is or becomes (other than by disclosure by Contractor) publicly known or is contained in a publicly available document; (b) is rightfully in Contractor's possession without the obligation of nondisclosure prior to the time of its disclosure under this Agreement; or (c) is independently developed by employees or agents of Contractor who can be shown to have had no access to the Confidential Information.

12.2 Contractor agrees to hold Confidential Information in strict confidence, using at least the same degree of care that Contractor uses in maintaining the confidentiality of its own confidential information, and not to copy, reproduce, sell, assign, license, market, transfer or otherwise dispose of, give, or disclose Confidential Information to third parties or use Confidential Information for any purposes whatsoever other than the provision of Services to County hereunder, and to advise each of its employees and agents of their obligations to keep Confidential Information confidential. Contractor shall use its best efforts to assist County in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limitation of the foregoing, Contractor shall advise County immediately in the event Contractor learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Agreement and Contractor will at its expense cooperate with County in seeking injunctive or other equitable relief in the name of County or Contractor against any such person. Contractor agrees that, except as directed by County, Contractor will not at any time during or after the term of this Agreement disclose, directly or indirectly, any Confidential Information to any person, and that upon termination of this Agreement or at County's request, Contractor will promptly turn over to County all documents, papers, and other matter in Contractor's possession which embody Confidential Information.

12.3 Contractor acknowledges that a breach of this Section, including disclosure of any Confidential Information, or disclosure of other information that, at law or in equity, ought to remain confidential, will give rise to irreparable injury to County that is inadequately compensable in damages. Accordingly, County may seek and obtain injunctive relief against the breach or threatened breach of the foregoing undertakings, in addition to any other legal remedies that may be available. Contractor acknowledges and agrees that the covenants contained herein are necessary for the protection of the legitimate business interest of County and are reasonable in scope and content.

12.4 Contractor in providing all services hereunder agrees to abide by the provisions of any applicable Federal or State Data Privacy Act.

12.5 Contractor expressly acknowledges that County is subject to the Texas Public Information Act, TEX. GOV'T CODE ANN. §§ 552.001 *et seq.*, as amended, and notwithstanding any provision in the Agreement to the contrary, County will make any information related to the Agreement, or otherwise, available to third parties in accordance with the Texas Public Information Act. Any proprietary or confidential information marked as such provided to County by Consultant shall not be disclosed to any third party, except as directed by the Texas Attorney General in response to a request for such under the Texas Public Information Act, which provides for notice to the owner of such marked information and the opportunity for the owner of such information to notify the Attorney General of the reasons why such information should not be disclosed.

Section 13. Independent Contractor

13.1 In the performance of work or services hereunder, Contractor shall be deemed an independent contractor, and any of its agents, employees, officers, or volunteers performing work required hereunder shall be deemed solely as employees of contractor or, where permitted, of its subcontractors.

13.2 Contractor and its agents, employees, officers, or volunteers shall not, by performing work pursuant to this Agreement, be deemed to be employees, agents, or servants of County and shall not be entitled to any of the privileges or benefits of County employment.

Section 14. Notices

14.1 Each party giving any notice or making any request, demand, or other communication (each, a "Notice") pursuant to this Agreement shall do so in writing and shall use one of the following methods of delivery, each of which, for purposes of this Agreement, is a writing: personal delivery, registered or certified mail (in each case, return receipt requested and postage prepaid), or nationally recognized overnight courier (with all fees prepaid).

14.2 Each party giving a Notice shall address the Notice to the receiving party at the address listed below or to another address designated by a party in a Notice pursuant to this Section:

County: Fort Bend County Engineering Department
Attn: County Engineer
301 Jackson Street
Richmond, Texas 77469

With a copy to: Fort Bend County
Attn: County Judge
401 Jackson Street, 1st Floor
Richmond, Texas 77469

Contractor: Freese and Nichols, Inc.
Attn: Jeff Taylor, Vice President
10497 Town & County Way, Suite 600
Houston, Texas 77024

14.3 A Notice is effective only if the party giving or making the Notice has complied with subsections 14.1 and 14.2 and if the addressee has received the Notice. A Notice is deemed received as follows:

14.3.1 If the Notice is delivered in person, or sent by registered or certified mail or a nationally recognized overnight courier, upon receipt as indicated by the date on the signed receipt.

14.3.2 If the addressee rejects or otherwise refuses to accept the Notice, or if the Notice cannot be delivered because of a change in address for which no Notice was given, then upon the rejection, refusal, or inability to deliver.

Section 15. Compliance with Laws

Contractor shall comply with all federal, state, and local laws, statutes, ordinances, rules and regulations, and the orders and decrees of any courts or administrative bodies or tribunals in any matter affecting the performance of this Agreement, including, without limitation, Worker's Compensation laws, minimum and maximum salary and wage statutes and regulations, licensing laws and regulations. When required by County, Contractor shall furnish County with certification of compliance with said laws, statutes, ordinances, rules, regulations, orders, and decrees above specified.

Section 16. Performance Warranty

16.1 Contractor warrants to County that Contractor has the skill and knowledge ordinarily possessed by well-informed members of its trade or profession practicing in the greater Houston metropolitan area and Contractor will apply that skill and knowledge with care and diligence to ensure that the Services provided hereunder will be performed and delivered in accordance with the highest professional standards.

16.2 Contractor warrants to County that the Services will be free from material errors and will materially conform to all requirements and specifications contained in the attached Exhibit A.

Section 17. Assignment

17.1 Neither party may assign any of its rights under this Agreement, except with the prior written consent of the other party. That party shall not unreasonably withhold its consent. All assignments of rights are prohibited under this subsection, whether they are voluntarily or involuntarily, by merger, consolidation, dissolution, operation of law, or any other manner.

17.2 Neither party may delegate any performance under this Agreement.

17.3 Any purported assignment of rights or delegation of performance in violation of this Section is void.

Section 18. Applicable Law

The laws of the State of Texas govern all disputes arising out of or relating to this Agreement. The parties hereto acknowledge that venue is proper in Fort Bend County, Texas, for all legal actions or proceedings arising out of or relating to this Agreement and waive the right to sue or be sued elsewhere. Nothing in the Agreement shall be construed to waive the County's sovereign immunity.

Section 19. Successors and Assigns

County and Contractor bind themselves and their successors, executors, administrators and assigns to the other party of this Agreement and to the successors, executors, administrators and assigns of the other party, in respect to all covenants of this Agreement.

Section 20. Third Party Beneficiaries

This Agreement does not confer any enforceable rights or remedies upon any person other than the parties.

Section 21. Severability

If any provision of this Agreement is determined to be invalid, illegal, or unenforceable, the remaining provisions remain in full force, if the essential terms and conditions of this Agreement for each party remain valid, binding, and enforceable.

Section 22. Publicity

Contact with citizens of Fort Bend County, media outlets, or governmental agencies shall be the sole responsibility of County. Under no circumstances whatsoever, shall Contractor release any material or information developed or received in the performance of the Services hereunder without the express written permission of County, except where required to do so by law.

Section 23. Captions

The section captions used in this Agreement are for convenience of reference only and do not affect the interpretation or construction of this Agreement.

Section 24. Conflict

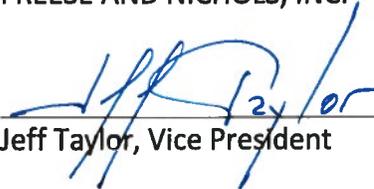
In the event there is a conflict between this Agreement and the attached exhibits, this Agreement controls.

IN WITNESS WHEREOF, the parties hereto have signed or have caused their respective names to be signed to multiple counterparts to be effective on the ____ day of _____, 2016.

FORT BEND COUNTY

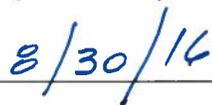
FREESE AND NICHOLS, INC.

Robert E. Hebert, County Judge



Jeff Taylor, Vice President

Date



Date

ATTEST:

Laura Richard, County Clerk

APPROVED:

Richard W. Stolleis, P.E., County Engineer

APPROVED AS TO LEGAL FORM:

Marcus D. Spencer, First Assistant County Attorney

AUDITOR'S CERTIFICATE

I hereby certify that funds are available in the amount of \$ _____ to accomplish and pay the obligation of Fort Bend County under this contract.

Robert Edward Sturdivant, County Auditor

I:\Marcus\Agreements\Engineering\Brazos River Erosion Management\Agreement - Prof Svcs.Freese&Nichols.v2.docx

EXHIBIT A

PROPOSED SCOPE OF SERVICES

PURPOSE

The U.S. Army Corps of Engineers (USACE), Galveston District (SWG) has been engaged by Fort Bend County (FBC) through their Planning Assistance to States program to ascertain technical data necessary to develop future design alternatives to retard the degradation rate of the Brazos River banks and to safeguard historically and culturally significant areas and public infrastructure (e.g., flood control levees, utilities, roads and railroad bridges). USACE SWG and Fort Bend County agreed to enter in to an agreement where the effort to gather and document this data will be shared effort. Freese and Nichols, Inc. (FNI) will obtain the necessary team members to complete the portion of work that Fort Bend County is responsible to perform as work-in-kind and consolidate that, in addition to the information provided by USACE SWT, in to a final technical document.

REFERENCES

- Statement of Work for Brazos River Erosion Management Project, USACE Galveston and Fort Bend County (**Attachment 1**)

SCOPE OF SERVICES

FNI will render the following professional services in connection with the development of the Project:

1.0 Basic Services. The following services will be performed as part of this scope of work:

1.1 Task 1: Project Management

- 1.1.1** Establish and manage the project schedule and budget.
- 1.1.2** Coordinate information between FNI and its subconsultants, FBC, USACE SWG, and Fred Hicks.
- 1.1.3** Coordinate technical engineering and environmental Quality Control (QC) and Quality Assurance (QA) by Senior Management and Technical Staff consistent with FNI's established internal quality review processes.
- 1.1.4** Coordinate BREM project administrative tasks including conference calls, meetings, and correspondence between FBC and USACE.
- 1.1.5** Provide FBC monthly reports pertaining to the progress of the project. This will generally include project updates, action items, scheduled milestones, etc.
- 1.1.6** Coordinate technical production of subconsultant work products.
- 1.1.7** Attend meetings as required between FBC, interested FBC stakeholders, federal agencies, and others. Meeting attendance (anticipated):
 - FNI, FBC, and the USACE SWG – Project Kickoff Meeting (with focus on USACE's Hydrology and Hydraulic (H&H) work from the Flood Plain Management Study (FPMS) phase). A field inspection will be performed immediately following this meeting by representatives from FNI, FBC, and the USACE SWG.
 - FNI, FBC, and the USACE SWG – Monthly status update tele-conferences.
 - FNI, FBC, and USACE SWG – Review and discussion of USACE's technical memorandum.
 - FNI and FBC – Review and discussion of FNI's draft technical memorandum.

1.2 Task 2: Review of Flood Plain Management Study (FPMS) Report

- 1.2.1** FNI will review and comment on the draft H&H report developed by USACE SWG as part of the FPMS phase of the BREM project. All review comments will be presented in a comment matrix for ease of interpretation and response.
- 1.2.2** USACE SWG will provide responses to FNI's comments as part of their technical memorandum deliverable.

1.3 Task 3: Investigation of Cultural Resources and Environmental Permitting Considerations

- 1.3.1** FNI will engage BioWest as a subconsultant to perform an Investigation of Cultural Resources and Environmental Permitting Considerations. This investigation will generally include the following work items:
- Document Environmental Baseline
 - Desktop Review
 - Field Investigation
 - Evaluation of Environmental Constraints
 - Production of Environmental Processes Flowchart (EPPF)
 - Formulation of Future Scope of Work and Cost Analysis
- 1.3.2** BioWest will provide the following deliverables associated with its investigation:
- A technical report documenting the identified cultural and environmental resources within the BREM project area. The report will contain multiple maps, Geographic Information System (GIS) and data sets, the EPPF, and scope(s) of work for additional efforts that are recommended for subsequent phases of the BREM project. **Attachment 2 includes the detailed scope of services for BioWest.**
- 1.3.3** An FNI environmental scientist will review the technical report and assist the project engineers with incorporating this information in to the final technical memorandum.

1.4 Task 4: Geotechnical Investigation and Analysis

- 1.4.1** FNI will engage Terracon Consultants, Inc. (Terracon) as a subconsultant to perform a preliminary geotechnical investigation and analysis. This investigation and analysis will generally include the following work items:
- Drill 10 test borings to a depth of 50 feet and 3 test borings to a depth of 100 feet along the BREM project area. The soil samples obtained from these borings will be sent for laboratory testing, which could include determination of, but may not be limited to, moisture contents, unit dry weights, Atterberg Limits, compressive strength tests, grain size analyses, crumb and pinhole test. Additionally, three selected soil samples will be sent to Texas A&M University for Erosion Function Apparatus (EFA) testing.
- 1.4.2** Terracon will provide the following deliverable associated with their investigation:
- A preliminary geotechnical engineering report that documents the results of the testing performed and provides boring logs and a Boring Location Plan. **Attachment 3 includes the detailed scope of services for Terracon.**
- 1.4.3** A FNI geotechnical engineer will review this work and assist the project engineers with incorporating this information in to the technical memorandum

1.5 Task 5: Identification and Recommendation of Future Investigations, Analyses, and Studies

- 1.5.1** In addition to input from the subconsultants, FNI will propose recommendations for additional work required and develop corresponding cost estimates for future phases of the BREM project.

1.6 Task 6: Development of Technical Memorandum

1.6.1 FNI will develop a technical memorandum incorporating all information provided by USACE SWG and documenting all of the field investigations, studies, and analyses performed to date. The sections of this memorandum will generally include:

- Project Background
- Summary of FPMS Phase, to be provided by USACE SWG
- Summary of Field Inspection
- Summary of Investigation of Cultural Resources and Environmental Permitting Considerations
- Summary of Geotechnical Investigation and Analysis
- Summary of Geomorphological Investigation and Analysis, to be provided by USACE SWG
- Summary of Survey and Mapping of the Project Area, to be provided by USACE SWG
- Identification and Recommendation of Future Investigations, Analyses, and Studies

2.0 Additional Services. Upon the request and authorization of FBC, FNI will provide on-call services for various project management and technical tasks.

COMPENSATION

FNI proposes to furnish the Basic Services described above on a lump sum basis with a total fee of “One Hundred Forty Thousand Dollars” (\$140,000).

FNI proposes to furnish the Additional Services described above on an hourly basis (Cost Plus with Maximum) according to the rate structure outlined in **Attachment 4** with a Not to Exceed Amount of “Twenty Thousand Dollars” (\$20,000.)

Should the scope of services require additional effort or costs in excess of the aforementioned amounts, FNI will obtain approval from Fort Bend County prior to the commencement of the additional effort.

Payment of the services shall be due and payable upon submission of a statement for services. Statements for services shall not be submitted more frequently than monthly.

**ATTACHMENT 1 -
STATEMENT OF WORK FOR
BRAZOS RIVER EROSION
MANAGEMENT PROJECT,
USACE GALVESTON AND
FORT BEND COUNTY**

**PLANNING ASSISTANCE TO STATES PROGRAM
LETTER OF AGREEMENT
BETWEEN
FORT BEND COUNTY, TEXAS
AND
U.S. ARMY CORPS OF ENGINEERS
GALVESTON DISTRICT
FOR THE
BRAZOS RIVER EROSION MANAGEMENT PROJECT**

THIS AGREEMENT, entered into this day ___ of _____, 2016, by and between the United States of America (hereinafter called the "Government"), represented by the District Engineer for the Galveston District, U.S. Army Corps of Engineers; and Fort Bend County, Texas (hereinafter called the "Sponsor").

WITNESSETH, THAT

WHEREAS, Section 22 of the Water Resources Development Act of 1974 (Public Law 93-251), as amended, authorizes the Secretary of the Army, acting through the Chief of Engineers, to assist the states in the preparation of comprehensive plans for the development, utilization and conservation of water and related land resources; and

WHEREAS, Section 319 of the Water Resources Development Act of 1990 (Public Law 101-640) authorizes the Secretary of the Army to collect from non-Federal entities fees for the purpose of recovering 50 percent of the cost of the program established by Section 22; and

WHEREAS, the Sponsor has reviewed the State's comprehensive water plans and identified the need for planning assistance as described in the Scope of Study incorporated into this Agreement; and

WHEREAS, the Sponsor has the authority and capability to furnish the cooperation hereinafter set forth and is willing to participate in the study cost-sharing and financing in accordance with the terms of this Agreement;

NOW THEREFORE, the parties do mutually agree as follows:

1. The Government, using funds contributed by the Sponsor and appropriated by the Congress, shall expeditiously prosecute development of a study and report containing water resource information, substantially in compliance with the attached Scope of Study and in

conformity with applicable Federal laws and regulations and mutually acceptable standards of engineering practice.

2. The Government shall contribute in cash 50 percent of the total study cost, and the Sponsor shall contribute in cash and/or in-kind services 50 percent of the total study cost, which total study cost is currently estimated to be \$280,000.00; provided, that, if applicable, the Government shall not obligate any cash contribution toward Study costs, until such cash contribution has actually been made available to it by the Sponsor.

3. No Federal funds may be used to meet the local Sponsor's share of study costs under this Agreement unless the expenditure of such funds is expressly authorized by statute as verified by the granting agency.

4. Before any Party to this Agreement may bring suit in any court concerning any issues relating to this Agreement, such party must first seek in good faith to resolve the issue through negotiation or other form of nonbinding alternative dispute resolution mutually acceptable to the Parties.

5. This Agreement shall terminate upon the completion of the Study, provided that prior to such time and upon thirty (30) days written notice, either party may terminate or suspend this Agreement without penalty. It is further understood and agreed that if the Study is not completed within 12 months of receipt of Federal funds, or cannot be completed within the estimated total study cost of \$280,000.00, this Agreement may be renewed or amended by the mutual written agreement of the parties.

6. Within ninety days after termination of this Agreement, the Government shall prepare a final accounting of the study costs, which shall display (1) cash contributions by the Federal Government, (2) cash and work-in-kind contributions, as applicable, by the Sponsor, and (3) disbursements by the Government of all funds. Subject to the availability of funds, within thirty days after the final accounting, the Government shall reimburse the Sponsor for non-Federal cash contributions that exceed the Sponsor's required share of the total study costs. Within thirty days after the final accounting, the Sponsor shall provide the Government any cash contributions required to meet the Sponsor's required share of the total study costs.

7. In the event that any (one or more) of the provisions of this Agreement is found to be invalid, illegal, or unenforceable by a court of competent jurisdiction, the validity of the remaining provisions shall not in any way be affected or impaired and shall continue in effect until the Agreement is completed.

8. This Agreement shall become effective upon the signature of both Parties.

FOR THE SPONSOR:

By: Robert Hebert
Robert Hebert
County Judge
Fort Bend County, Texas

Date: 3-8-16

FOR THE GOVERNMENT:

By: _____
Richard. P. Pannell
Colonel, U.S. Army
District Engineer

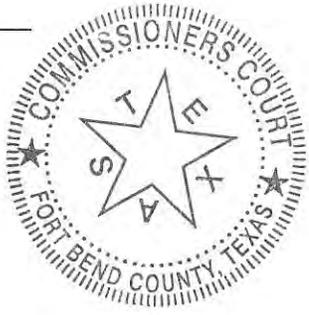
Date: _____

Attest:

By: Laura Richard

Date: 3-8-2016

(Seal)



ATTACHMENT: Scope of Study

CERTIFICATE OF AUTHORITY

I, Robert E. Hebert, do hereby certify that I am the principal legal officer for Fort Bend County, Texas, and that Fort Bend County, Texas is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between Fort Bend County, Texas and the U.S. Army Corps of Engineers, Galveston District in connection with the Brazos River Erosion Management Project, and that the person(s) who have executed this Agreement on behalf of Fort Bend County, Texas have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this
8th day of March, 2016.



Robert E. Hebert
Principal Legal Officer
Fort Bend County, Texas

**Statement of Work for
“BRAZOS RIVER EROSION MANAGEMENT PROJECT”**

1.0 Purpose.

The U.S. Army Corps of Engineers (USACE), Galveston District (SWG) has been engaged by Fort Bend County through the Planning Assistance to States (PAS) program to ascertain technical data necessary to develop design alternatives to retard the degradation rate of the Brazos River banks and to safeguard historically and culturally significant areas and public infrastructure (e.g., flood control levees, utilities, roads and railroad bridges).

Specific infrastructure within the project area include: US Highway 90A, Union Pacific Railroad Bridge, Fort Bend County Justice Center, Morton Cemetery, and Mirabeau B. Lamar Homestead Park and Archeological Site. This Statement of Work (SOW) is to help determine elements of this study, covering the limits of the Brazos River shown in Figure 1, which is approximately four river miles. The analyses will be documented in a memorandum and will be used to help guide investment in future phases of this project.



Figure 1 – Map of Study Area and Limits

2.0 Background

2.1 General Requirement

The City of Richmond is located within Fort Bend County. Fort Bend County's Commissioners' Court unanimously supports a partnership between the County and SWG to address the ongoing problem and is the non-Federal Sponsor (NFS) for this project. The City of Richmond also supports the project but has deferred to County leadership on the issue. Fort Bend County will perform their portion of the work/PAS study with in-kind services that contribute towards the final deliverable.

The SWG portion of the work will focus on preparing the survey and mapping data parameters of the erosion problem, as well as defining and evaluating the geomorphological properties of the project area. SWG will develop a technical memorandum documenting this work, which will provide the input needed for the final comprehensive technical memorandum report.

Fort Bend County's portion of the work will include a review of existing hydraulic modeling, geotechnical borings and related laboratory analysis. The County will evaluate anticipated environmental and cultural resource permitting and develop the final deliverable associated with this PAS study. This deliverable will be a technical memorandum summarizing the hydraulic, geotechnical, geomorphological, environmental and cultural resource information developed under this study. This study will help jumpstart efforts to develop a permanent solution to manage the erosion of the Brazos River for the protection of historically and culturally significant sites and public infrastructure.

2.2 Project History and Proposed Method

Within the past 70 years, the City of Richmond, Texas, located in Fort Bend County, has experienced river migration and significant erosion along various stretches of the Brazos River cut-bank. One of the more pronounced areas is a two-mile river section of the Brazos River between US Highway 90A and the Mirabeau B Lamar Homestead Park. Average annual erosion rates in this area have been approximated to be in the range of 4-feet per year, resulting in approximately 400-feet of river channel movement. The observed erosion appears to be particularly associated with peak storm events with greater than ten feet of lateral bank loss resulting from singular events. Figure 2 shows the locations of these areas.

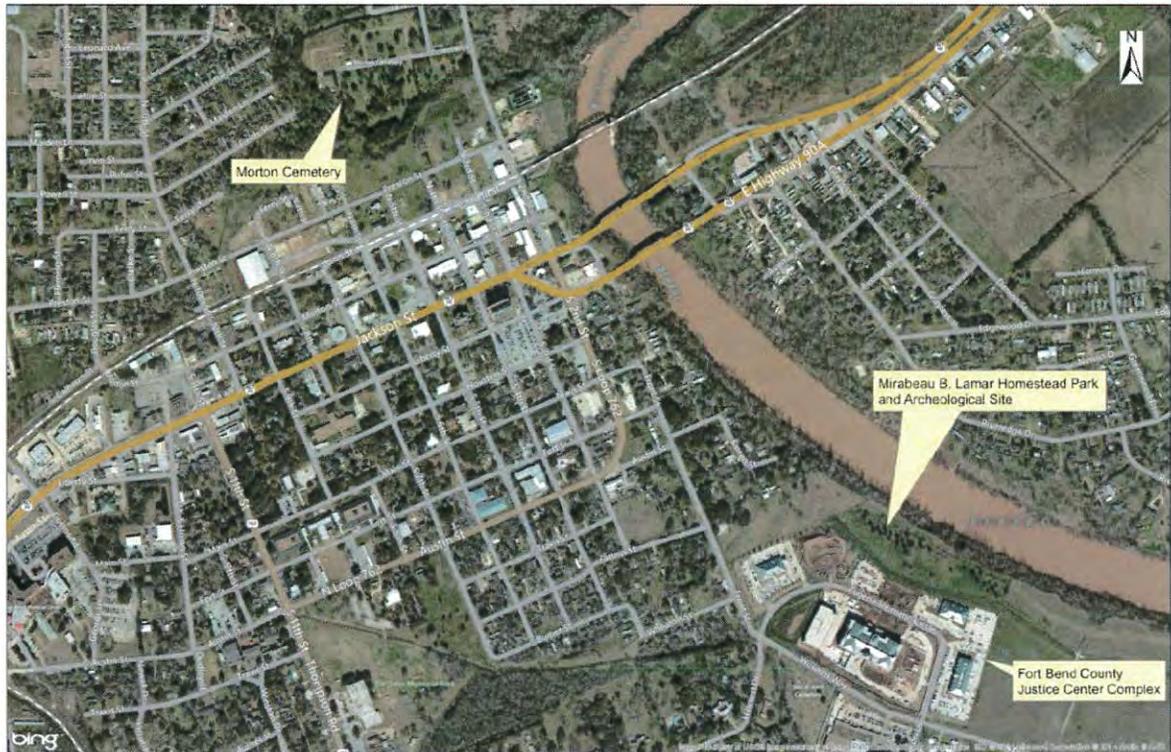


Figure 2 – Locations of Significant Erosion

The study will result in performing and compiling the analyses needed to further develop a recommended long term plan for managing the erosion to prevent degradation of the river banks. To achieve this goal, the following general activities will be performed:

1. Review and finalize previous studies and analysis
2. Perform site visits, geotechnical investigations, and surveys
3. Investigate cultural resources
4. Understand geomorphological and environmental conditions
5. Formalize and document the findings

3.0 Objectives.

This study consists of the following objectives:

1. Identify needs for the protection of historical sites and public infrastructure within the project limits
2. Describe physical processes and environmental conditions
3. Document all of the analysis within a GIS platform and in a final technical memorandum

4.0 Scope of Work.

Task 1: Project Management (SWG/Fort Bend County)

This task will include establishing and managing the project schedule and coordinating efforts between Fort Bend County, their subconsultant (Freese and Nichols, Inc. [FNI]) and the SWG. This task also includes quality control and quality assurance. As part of this effort, there will be a kickoff meeting, progress meetings via teleconference, schedule updates, and reporting. Additionally, monthly progress reports will be provided by SWG and FNI on behalf of Fort Bend County. FNI will record all meeting minutes and coordinate reviews. Anticipated meetings are as follows:

- Fort Bend County, FNI and SWG– Project Kickoff Meeting (with focus on SWG’s H&H work from the Flood Plain Management Study (FPMS) phase)
- Fort Bend County, FNI, and SWG – status update teleconferences
- Fort Bend County, FNI, and SWG – various field inspections within project limits
- Fort Bend County and FNI – discussion of FNI’s draft technical memorandum
- Fort Bend County, FNI and SWG – discussion of SWG’s technical memorandum
- Fort Bend County, FNI and SWG – discussion of comments associated with the final draft technical memorandum deliverable

Task 2: Review of Flood Plain Management Study Report (Fort Bend County)

This task includes Fort Bend County’s subconsultant (FNI) reviewing and commenting on the draft hydraulic report developed by SWG as part of the FPMS phase of the project. Comments will be inputted in to Dr. Checks.

Task 3: Respond to Comments and Finalize FPMS Report (SWG)

This task includes responding to Fort Bend County’s subconsultant (FNI) and providing an updated report for incorporation into the final technical memorandum.

Task 4: Field Inspections (SWG/Fort Bend County)

SWG and Fort Bend County’s subconsultant (FNI) to participate in a joint site visit immediately subsequent to the kickoff meeting in order to better define existing conditions and assist with the various analyses that are to be performed.

Task 5: Geomorphological Investigation and Analysis (SWG)

This task includes providing a geomorphologist with experience in large riverine systems to conduct a field inspection of the project area. SWG will be responsible for incorporating this information in to their technical memorandum. Major subtasks include:

- Utilize data collected during the field inspection as well as available information pertaining to the Brazos River along the project area to analyze the geomorphology of existing conditions.
- Identify the regional behavior of the riverbanks and fluvial patterns manifested in bank erosion.
- Assess the evolution of the river meanders on clay and alluvium.

- Perform a soil erodibility analysis on the active fluvial plain and the Pleistocene clays.
- Identify river training techniques (submerged vanes, dikes, wing dams, palisades) and traditional bank stabilization and armoring engineering methods (revetments) that could serve to reduce erosion and/or protect the study area.
- Perform a high-level evaluation of the river training techniques and traditional bank stabilization and armoring engineering methods with regards to their hydraulic capacity and geomorphological integrity.

Task 6: Survey and Mapping (SWG)

This task includes preparing multiple survey deliverables for the project area. The survey limits will begin two miles upstream of the US Highway 90A bridge near Richmond, Texas and continue two miles downstream of the bridge. The deliverables for the surveying services will include a continuous plan view of the field data in AutoCAD release Civil 3D 2014 (or later), ASCII point file, an .XML file, and a copy of any/all field notes associate with each of the survey tasks. SWG will develop a GIS workmap to compile data gathered from the investigations, studies, and analysis conducted by both SWG and Fort Bend County over the course of the FPMS and PAS phases of this project.

The required survey deliverables are as follows:

- Abstract Map
- Control Survey
- Topographic Survey
- Bathymetric Survey

The required GIS workmap will include, but not be limited to, the following data associated with the project area:

- Current and historical aerials and LiDAR data along with any DEMs or TINs produced from the LiDAR and used to generate topography.
- The applicable parameters and results of the hydraulic analysis performed by SWG.
- The location of the geotechnical borings drilled by Fort Bend County's subconsultant (FNI/TerraCon). The boring log information and laboratory test results should also be included and/or linked to these boring locations.
- The location (and footprint) of any/all areas, landmarks, etc. that will require environmental and cultural resource permitting coordination.
- The property ownership, topographic, and bathymetric information collected by SWG. All surveyed cross sections should be clearly located. Additionally, locations demonstrating significant slope failure and/or erosion should be clearly identified on the workmap. The vertical accuracy and datum information for the topographic data shall be documented with appropriate Federal Geographic Data Committee (FGDC) metadata.

- The pertinent geomorphological information collected by SWG. All locations of important observations, collected soil samples, site visit photographs, etc. should be clearly located.

Task 7: Investigation of Cultural Resources and Environmental Permitting Considerations (Fort Bend County)

This task will include Fort Bend County's subconsultant (FNI) engaging Biowest to perform the investigations. BioWest will provide a technical report documenting the identified cultural and environmental resources within the project area. The report will contain multiple maps, GIS information and data sets, the Environmental Processes Flowchart (EPPF), and recommendations of additional efforts that are necessary in subsequent phases of the project. FNI will perform a review of this work prior to incorporating it into the final technical memorandum.

Task 8: Geotechnical Investigation and Analysis (Fort Bend County)

This task will include Fort Bend County's subconsultant (FNI) engaging Terracon Consultants, Inc. to perform a preliminary geotechnical investigation and analysis. A preliminary geotechnical engineering report will be provided that documents the results of the testing performed and provides boring logs and a Boring Location Plan. FNI will perform a review of this work prior to incorporating it into the final technical memorandum.

Task 9: Identification and Recommendation of Future Investigations, Analysis, and Studies (Fort Bend County)

This task will include Fort Bend County's subconsultant (FNI) proposing recommendations and associated cost estimates for future phases of this project.

Task 10: Develop Sections for Input in to Technical Memorandum (SWG)

Drawing upon tasks 3, 4, 5 and 6, this task will include SWG developing portions of the technical memorandum for Fort Bend County's subconsultant (FNI) to review and incorporate into a comprehensive technical memorandum.

Task 11: Final Report (Fort Bend County)

This task will include Fort Bend County's subconsultant (FNI) documenting all findings from all tasks into a technical memorandum. The results will be presented at a team meeting at Fort Bend County offices. SWG will perform a technical review of the draft deliverable and upload comments to Dr. Checks. The sections of this memorandum will include:

- Project Background
- Summary of FPMS Phase
- Summary of Field Inspection
- Summary of Investigation of Cultural Resources and Environmental Permitting Considerations
- Summary of Geotechnical Investigation and Analysis
- Summary of Survey and Mapping of the Project Area
- Identifications and Recommendation of Future Investigations, Analysis, and Studies

5.0 Cost. Cost estimate and breakout of tasks is shown in Table 1.

Table 1 – Estimated Cost

| Task Name | Fort Bend County Cost | SWG Cost | Total Cost |
|--|------------------------------|------------------|-------------------|
| Task 1: Project Management | \$30,000 | \$30,000 | \$60,000 |
| Task 2: Review of Flood Plain Management Study Report | \$2,500 | \$0.00 | \$2,500 |
| Task 3: Respond to Comments and Finalize FPMS Report | \$0 | \$4,000 | \$4,000 |
| Task 4: Field Inspections | \$7,000 | \$7,000 | \$14,000 |
| Task 5: Geomorphological Investigation and Analysis | \$0.00 | \$14,500 | \$14,500 |
| Task 6: Survey and Mapping | \$0 | \$77,500 | \$77,500 |
| Task 7: Investigation of Cultural Resources and Environmental Permitting Considerations | \$30,000 | \$0 | \$30,000 |
| Task 8: Geotechnical Investigation and Analysis | \$60,000 | \$0 | \$60,000 |
| Task 9: Identification and Recommendation of Future Investigations, Analysis, and Studies | \$3,000 | \$0 | \$3,000 |
| Task 10: Develop Sections for Input in to Final Technical Memorandum | \$0.00 | \$7,000 | \$7,000 |
| Task 11: Final Technical Memorandum | \$7,500 | \$0 | \$7,500 |
| TOTALS: | \$140,000 | \$140,000 | \$280,000 |

6.0 Schedule

- The kick off meeting will be conducted within 60 calendar days of receipt of federal and non-federal funds.

- The site visit will be conducted within 90 calendar days of receipt of federal and non-federal funds.
- SWG Sections for Input in to Final Technical Memorandum will be provided within 300 calendar days of receipt of federal and non-federal funds.
- The Comprehensive Draft Technical Memorandum will be provided within 365 calendar days of receipt of federal and non-federal funds.

7.0 Deliverables. Deliverables, associated with tasks, are described below. All deliverables will be in electronic format only.

- Task 1: Site visit and progress meeting minutes in memo format.
- Task 10: Report in a technical memorandum format for input in to the comprehensive final technical memorandum
- Task 11: Comprehensive report in technical memorandum format

8.0 Sponsors Responsibilities. Sponsor responsibilities will be performed as in-kind services as documented in Section 4.0.

9.0 Progress Reporting. Monthly progress reports will be made via email by both SWG and FNI on behalf of Fort Bend County. Reports will list work complete, outstanding action items, and upcoming deadlines.

**ATTACHMENT 2 -
STATEMENT OF WORK FOR
INVESTIGATION OF
CULTURAL RESOURCES AND
ENVIRONMENTAL
PERMITTING
CONSIDERATIONS**



March 28, 2016

Kevin Kiniry
Freese and Nichols
10497 Town and Country Way, Suite 600
Houston, Texas 77024

Re: Request for Environmental Support Proposal – Brazos River Erosion Management Project
Freese & Nicholes, Fort Bend County, and the United States Army Corps of Engineers
The Brazos River near the City of Richmond, Texas

Dear Mr. Kiniry,

BIO-WEST, Inc. (BIO-WEST) is pleased to present the following scope of services to provide environmental support for the Brazos River Erosion Management (BREM) project to Freese and Nichols, Inc., (FNI). This phase of the proposed project consists of investigating environmental concerns within the project area in Richmond, Texas. For this, BIO-WEST will perform detailed background investigations and intensive field survey efforts. Data obtained during these investigations will provide a solid baseline inventory for the project moving forward.

Introduction

This proposal and scope of work has been generated utilizing all information previously discussed during BREM planning meetings, BIO-WEST's past environmental and regulatory experience, and the overall National Environmental Protection Act (NEPA) policies and regulations.

Currently, the project area is defined as the Brazos River, from approximately 2 miles north of the State Highway 90 Bridge to 2 miles south of the State Highway 90 Bridge. Due to specific project limits being undetermined at this time, BIO-WEST extended the project investigation area 50 meters outward along the high banks of the Brazos River to provide a potential workspace buffer. We believe this will allow us to provide initial investigation of all critical areas potentially affected by the project at this time.

BIO-WEST understands that a streamlined process is the most beneficial for the BREM project and has therefore proposed the following tasks which will provide the baseline inventory data to be used to identify specific areas of need moving forward. Data collected during this phase will be used to design the potential environmental pathways for project permitting, submission, and completion to the appropriate regulatory agencies as well as provide the needed information in order to estimate timelines and costs associated moving forward.

Detailed descriptions of tasks proposed for this phase of work are included below.

Proposed Project Tasks

- Task 1) Document Environmental Baseline
 - *Desktop Review*
 - A detailed background investigation of all pertinent cultural resources records within the project area will be conducted. Cultural resources background investigation will include but will not be limited to: a detailed state and Federal records review; consultation with governmental employees regarding potentially non-listed resources and cemeteries, including the Fort Bend Historical Commission; Texas Historical Commission antiquities permit investigation and request, and determination of areas which have a potentially high probability to contain cultural resources. The desktop determination of high potential areas will be conducted via a review of soil maps, other geomorphological datasets, historic aerial and quadrangle maps, and land ownership records to create an archaeological probability model of the project area. This model will allow fieldwork to be concentrated on those sections of the project that have the highest potential to contain intact, buried cultural resources. The results of the archaeological probability model will be used during coordination with the relevant state and Federal agencies to refine the scope of work and field survey strategy.
 - A detailed background investigation of natural resources within the project area will also be conducted and documented. Natural resources investigation will include but will not be limited to: a records review of state and federally listed threatened and endangered species and their critical habitat as it pertains to the project area and potential project activities; investigation into previously conducted environmental studies within this stretch of the Brazos River; and identification of potential waters of the U.S., including their location, type of aquatic resource, and approximate size.
 - *Biological Field Investigation*
 - Field investigations for natural resources will include ordinary high water mark (OHWM) and wetland delineation within the Brazos River banks to determine the jurisdictional limitations of the river. A wetland delineation will also be performed along the high banks of the river with available access and will extend outward 50 meters to document precise locations, sizes, and type of wetlands within this portion of the project area. The project area will be investigated for its potential to support state and federally listed threatened and endangered species and their critical habitat.
 - *Environmental Constraints*
 - Through the culmination of both the desktop review investigation and field survey efforts the applicable environmental constraints for the project will be recognized. These constraints will allow the project team to identify and isolate desirable and undesirable project workspace areas within the overall project.

Additionally, these constraints will allow BIO-WEST to identify the specific resource and governmental agencies which will be involved in the permitting process moving forward. When combined with engineering design plans, the environmental constraints will also provide detailed information on the NEPA pathway process.

- Task 2) Production of Environmental Pathway Processes Flowchart (EPPF)
 - Utilizing the desktop review investigations, results from the field survey efforts, and the environmental constraints identification BIO-WEST will provide a detailed EPPF and potential associated timelines for different permitting scenarios. Additionally, discussions with the project engineer (FNI) will allow BIO-WEST to customize this flowchart in multiple pathways for separate design alternatives if so available. All agencies involved in the permitting processes will be identified accordingly and specific NEPA permitting requirements, limitations, and guidelines (individual permit, categorical exclusion, environmental assessment, and/or an environmental impact statement) will be outlined for any separate designs provided as well.
- Task 3) Formulation of Future Scope of Work and Cost Analysis
 - This task will utilize information and the most highly anticipated pathways from Task 2 and provide detailed information on all additional tasks which will be required to satisfy different resource agencies requests and requirements. This task will also identify the costs associated with these tasks and project moving forward.
- Task 4) Deliverables
 - The findings of both the desktop review and field investigations will be combined into a single report documenting the identified resources in question for the BREM project. This report will contain multiple maps, GIS information, and data sets along with the EPPF from Task 2 and the future potential scope(s) of work as described in Task 3. All files (digital, ArcGIS, Word, etc.) will be made available in both electronic and hard copy format to FNI and the project team.

Schedule

All desktop review activities will begin immediately upon BIO-WEST receiving a signed proposal approval. Field survey activities will begin following finalization of initial desktop review and the river is safely accessible for navigation. It is currently proposed that desktop review activities will be completed within 30 days following proposal approval and field survey activities will be completed 60 days from proposal approval or 30 days from the river being accessible and safe for navigation. All described reports, maps, and supporting documents will be completed and supplied to FNI no later than 90 days following proposal approval and provided BIO-WEST can conduct work safely along the river banks.

Mr. Kevin Kiniry
Page 4
March 28, 2016
Cost Estimate

BIO-WEST proposes to provide the aforementioned services for approximately **\$26,000**. This cost is an estimate based upon project knowledge and current rates. A detailed cost breakdown is provided in the table below. This project is proposed on a lump sum basis.

| TASK ITEM | COST BREAKDOWN |
|---|------------------------------|
| Task 1 – Desktop & Field Investigations | \$15,000 |
| Task 2 – Environmental Pathway Processes | \$2,375 |
| Task 3 – Future Scope of Work Cost Analysis | \$2,375 |
| Task 4 – Deliverables (Reports, Maps, and Electronic files) | \$6,250 |
| | TOTAL COST = \$26,000 |

Summary

BIO-WEST greatly appreciates the opportunity to provide this scope and cost estimate. If you have any questions or require any additional information, please feel free to contact me at (832) 595-9064.

Sincerely,



Marty Heaney
Principal Ecologist

Approved By: _____

Date: _____

**ATTACHMENT 3 -
STATEMENT OF WORK FOR
GEOTECHNICAL
INVESTIGATION**

June 25, 2015



Freese & Nichols, Inc.
10497 Town and Country Way, Suite 600
Houston, Texas 77024

Attn: Mr. Kevin Kiniry, E.I.T.
P: 713-600-6800
E: Kevin.Kiniry@freese.com

Re: Proposal for Preliminary Geotechnical Engineering Services
Brazos River Erosion Mitigation – Phase I
Fort Bend County, Texas
Terracon Document No. P92151063

Dear Mr. Kiniry:

Terracon Consultants, Inc. (Terracon) understands we have been selected based on qualifications to provide geotechnical services for the above referenced project. This document outlines our understanding of the scope of services to be performed by Terracon for this project and provides a not to exceed estimate of the cost of our services.

A. PROJECT INFORMATION

| Item | Description |
|---------------------|--|
| Location | The approximate limits of the Brazos River Erosion Mitigation (BREM) project are approximately 4,200 linear feet upstream of the State Highway 90A (SH90A) bridges to approximately 8,000 linear feet downstream of the SH90A bridges in Fort Bend County, Texas. (See attached site location plan.) |
| Existing conditions | <ul style="list-style-type: none">Extensive erosion of the Brazos River occurs within an approximate 12,200 linear foot segment of the river, in the vicinity of Richmond, Texas.Geomantic analysis of maps from 1941 through 2012 suggest that average annual migration rates of the Brazos River near Richmond, Texas are 4-foot per year. Over ten feet of soil loss has been documented following peak storm events. In excess of 400 feet of movement has occurred from 1941 through 2012. |

| Item | Description |
|-------------------------------------|--|
| <p>Proposed improvements</p> | <ul style="list-style-type: none"> ■ Planning phases will include an evaluation of potential erosion mitigation measures for 12,200 linear feet of the Brazos River's banks. ■ In addition to a geotechnical assessment performed by Terracon, Phase I is also planned to consist of a hydrology and hydraulic analysis performed by USACE – Galveston District, a cultural resources evaluation, geomorphological evaluation, and erosion analysis performed by others. ■ Potential mitigation measures may include river training and armoring. The following armoring options are being considered and will be evaluated: gabions, rip-rap, palisades, and sheet piling. Following our evaluation, recommended measures would be designed and constructed in subsequent phases of the project. |

If our understanding of the project is not accurate, please let us know so that we may adjust our scope of services and estimated cost, if necessary.

B. SCOPE OF SERVICES

A brief summary of the services to be provided by Terracon is provided in the following paragraphs.

Field Program. The field program is planned to consist of drilling 10 test borings to a depth of 50 feet and 3 test borings to a depth of 100 feet along the banks of the Brazos River in the project alignment. The total drilled footage is planned to be 800 feet. All borings will be sampled continuously in the upper 10 feet of soils and at 5-foot intervals below 10 feet to the termination depth of each boring.

The borings will be located in the field by using a hand-held GPS unit referenced to coordinates provided by the client. The hand-held GPS is planned to be the Geo HX 6000 unit with an accuracy to locate within about 5 feet of the provided coordinates. The layout of the borings will be approximate. The boring depths will be measured from existing grade. The borings are planned to be terminated at the specified depths regardless of the findings at these depths.

The drilling services for this project will be performed by a drilling subcontractor or Terracon's in-house drillers. Once the samples have been collected and classified in the field, they will be properly prepared and placed in appropriate sample containers for transport to our laboratory. After the completion of drilling, an electronic copy of the field logs will be submitted to the client.

Groundwater level observations will be obtained when initially observed during drilling and at 5-minute intervals for a total of 15 minutes. After completion of drilling, the boring will be left open

overnight to obtain one day water level readings. After measuring the water levels, the boring will be backfilled to existing grade with cement-bentonite grout.

We will take reasonable efforts to reduce damage to the property as a result of our exploration activities, such as rutting of the ground surface. However, in the normal course of our work some disturbance will occur. We have not budgeted to restore the site beyond backfilling our boreholes. If there are any restrictions or special requirements regarding this site or exploration, please provide them with your acceptance of this document.

We anticipate that the boring locations can be accessed with all-terrain vehicle (ATV) mounted drilling equipment. This scope assumes that the site can be accessed during normal business hours and does not include services associated with surveying of boring locations, site clearing, location of underground utilities, or use of special equipment for unusually soft or wet surface conditions. If such conditions are known to exist on the site, Terracon should be notified so that we may adjust our scope of services if necessary. We request site access permits required to access our boring locations be arranged by the client prior to mobilizing our field equipment.

Terracon will notify Texas811, a free utility locating service, to help locate public utilities within dedicated public utility easements. If underground utilities are known to exist within the site, Terracon should be notified so that we may review utility plans to help avoid the existing lines. Terracon cannot be responsible for damage to unmarked and/or unlocated utilities for which we are unaware or that are improperly located.

Laboratory Testing. The sample classifications will be reviewed by a geotechnical engineer in the laboratory, and a laboratory testing program will be assigned which will be specific to the project requirements and the subsurface conditions observed. The testing program could include, but may not be limited to, moisture contents, unit dry weights, Atterberg Limits, compressive strength tests, grain size analyses, crumb and pinhole tests.

In addition, we plan to send three selected soil samples to Texas A&M University for Erosion Function Apparatus (EFA) testing. The EFA was developed in the 1990s by Dr. Jean Louis Briaud, Ph.D., P.E. to measure the erosion function. For each water velocity (6 points per test), an erosion rate is measured and a shear stress is calculated using the Moody Chart. Point by point, the erosion function is obtained.

Preliminary Geotechnical Engineering Report. The results of our field and laboratory programs will be evaluated by a professional geotechnical engineer licensed in the State of Texas. Based on the results of our evaluation, a preliminary engineering report will be prepared that details the results of the testing performed and provides boring logs and a Boring Location Plan. The preliminary report will also provide:

- Evaluation of erosion potential and discussion of erosion mitigation measures (No erosion analysis will be performed);

- Evaluation of dispersive potential of soils; and
- D_{50} and D_{90} values of soils from tested samples; and
- Preliminary evaluation of required geotechnical information necessary for subsequent phases of the project.

Slope stability analyses will not be performed as part of this scope of services.

Additional geotechnical services will be required for each phase of development and as more information regarding the nature and locations of the various improvements planned is made available. We can prepare a proposal to provide geotechnical engineering services upon request.

Schedule. We can initiate our field operations within one to two weeks following authorization to proceed. Our field program is anticipated to be completed in about one to two weeks. We anticipate completion of our services and submittal of our report within six to eight weeks after completion of our field services. In situations where information is needed prior to submittal of our report, we can provide verbal information or recommendations for specific project requirements directly after we have completed our field and laboratory programs.

C. COMPENSATION

For the scope of services outlined in this document, we estimate the following total costs. The cost of our services will not exceed these amounts without approval from the client.

| Task | Cost Estimate |
|--|-----------------|
| Field Exploration | \$24,530 |
| Laboratory Testing | \$15,820 |
| Preliminary Geotechnical Report | \$6,170 |
| Additional Geotechnical Consultation Through Phase I | \$3,480 |
| Total Lump Sum Cost | \$50,000 |

Additional consultation (such as attendance on a project conference call, engineering analysis, review of project documents, etc.) requested will be performed on a time-and-materials basis. The fee to provide additional consultation services will be in excess of the above provided fee to complete the geotechnical services and will not be incurred without prior approval of the client.

D. AUTHORIZATION

Environmental Considerations. In an effort to reduce the potential for cross-contamination of subsurface media and exposure of site workers to contaminants that might be present at the site, Terracon requests that prior to mobilization to the site, the client informs Terracon of known or suspected environmental conditions at or adjacent to the site. If adverse environmental conditions are present, additional expenses may be necessary to properly protect site workers and abandon borings that penetrate affected groundwater-bearing units.

If Terracon is not informed of potentially adverse environmental conditions prior to the initiation of geotechnical field services, Terracon will not be responsible for cross-contamination of groundwater aquifers, soil contamination, or any modification to the environmental conditions to the site that may occur during our geotechnical services. The geotechnical scope of services described above is based on our assumption that the site does not pose environmental risks to the personnel conducting the geotechnical exploration services.

Agreement for Services. The work will be performed under a mutually agreed upon client's Agreement for Services which will be signed once the budget estimate is accepted, and upon completion of review by our legal department. We will provide you with our comments, once our review is completed.

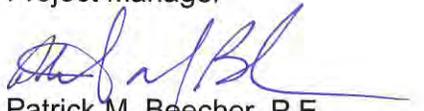
We appreciate the opportunity to provide this scope of services and look forward to working with you on this project.

Sincerely,

Terracon Consultants, Inc.
(Terracon Registration No. F-3272)



Brett A. Pope, P.E.
Project Manager



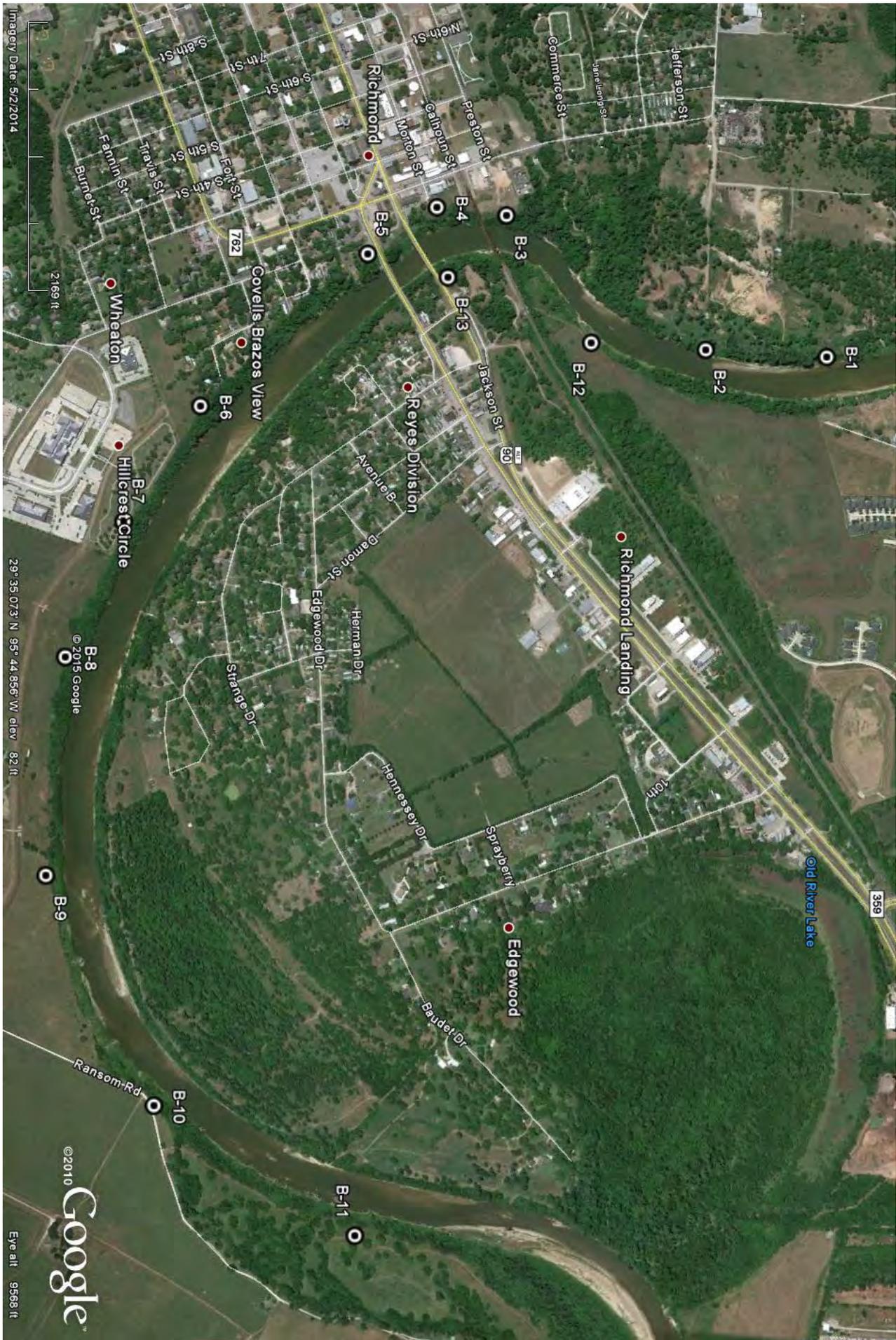
Patrick M. Beecher, P.E.
Geotechnical Services Manager



Todd E. Swoboda, P.E.
Office Manager

Attachment: Proposed Boring Plan

Proposed Boring Plan



ATTACHMENT 4 - FNI RATE STRUCTURE

COMPENSATION

Compensation to FNI for the Basic Services shall be the lump sum of One Hundred Forty Thousand Dollars (\$140,000). Compensation to FNI for Special Services shall be computed on the basis of the Schedule of Charges, but shall not exceed Twenty Thousand Dollars (\$20,000). If FNI sees the Scope of Services changing so that Additional Services are needed, including but not limited to those services described as Additional Services in Attachment SC, FNI will notify OWNER for OWNER's approval before proceeding. Additional Services shall be computed based on the Schedule of Charges.

Schedule of Charges:

| <u>Position</u> | <u>Min</u> | <u>Max</u> |
|-------------------------------|------------|------------|
| Professional - 1 | 71 | 121 |
| Professional - 2 | 92 | 148 |
| Professional - 3 | 112 | 178 |
| Professional - 4 | 146 | 205 |
| Professional - 5 | 180 | 253 |
| Professional - 6 | 152 | 350 |
| Construction Manager - 1 | 90 | 99 |
| Construction Manager - 2 | 108 | 153 |
| Construction Manager - 3 | 142 | 174 |
| Construction Manager - 4 | 114 | 231 |
| CAD Technician/Designer - 1 | 60 | 103 |
| CAD Technician/Designer - 2 | 88 | 129 |
| CAD Technician/Designer - 3 | 117 | 172 |
| Corporate Project Support - 1 | 41 | 102 |
| Corporate Project Support - 2 | 68 | 179 |
| Corporate Project Support - 3 | 83 | 318 |
| Intern/ Coop | 35 | 58 |

Rates for In-House Services

Technology Charge

\$8.50 per hour

Travel

Standard IRS Rates

Bulk Printing and Reproduction

| | <u>B&W</u> | <u>Color</u> |
|----------------------------|----------------|--------------|
| Small Format (per copy) | \$0.10 | \$0.25 |
| Large Format (per sq. ft.) | | |
| Bond | \$0.25 | \$0.75 |
| Glossy / Mylar | \$0.75 | \$1.25 |
| Vinyl / Adhesive | \$1.50 | \$2.00 |
| Mounting (per sq. ft.) | \$2.00 | |
| Binding (per binding) | \$0.25 | |

OTHER DIRECT EXPENSES:

Other direct expenses are reimbursed at actual cost times a multiplier of 1.0. They include outside printing and reproduction expense, communication expense, travel, transportation and subsistence away from the FNI office and other miscellaneous expenses directly related to the work, including costs of laboratory analysis, test, and other work required to be done by independent persons other than staff members. For Resident Representative services performed by non-FNI employees and CAD services performed In-house by non-FNI employees where FNI provides workspace and equipment to perform such services, these services will be billed at cost times a multiplier of 2.0. This markup approximates the cost to FNI if an FNI employee was performing the same or similar services.

These ranges and rates will be adjusted annually in February. Last updated February 2016.