

**AGREEMENT FOR ENGINEERING SERVICES**

**THE STATE OF TEXAS   §**  
**§**  
**COUNTY OF HARRIS   §**

THIS AGREEMENT is made, entered into, and executed by and between the **Harris County Flood Control District**, a body corporate and politic under the laws of the State of Texas, hereinafter called "District" or "HCFCD," and **CONSOR Engineers, LLC** a limited liability company, hereinafter called "Engineer."

WITNESSETH

WHEREAS, the District desires regional detention for the Cedar Bayou Watershed, Harris County Flood Control Unit Q500-01-00, hereinafter called the "Project"; and

WHEREAS, the District desires that the Engineer perform Preliminary Engineering Services in connection with the Project; and

WHEREAS, the Engineer represents that it is capable and qualified to perform the services and prepare the items set forth herein.

NOW, THEREFORE, the District and the Engineer, in consideration of the mutual covenants and agreements herein contained, do mutually agree as follows:

**SECTION 1****SCOPE OF AGREEMENT**

The Engineer agrees to perform professional engineering services in connection with the Project, as stated in the sections to follow, and for rendering such services the District agrees to pay the Engineer compensation, as stated in the sections to follow.

**SECTION 2****CHARACTER AND EXTENT OF SERVICES**

The Engineer shall perform the services with regard to the Project listed in Appendix A hereto, hereinafter referred to as "Basic Services." The services furnished hereunder shall be completed to the satisfaction of the District.

**SECTION 3****ADDITIONAL SERVICES**

Upon written request from the Executive Director of the District or designee ("Director"), the Engineer shall furnish Additional Services for the Project, as described in Appendix B hereto. All Additional Services shall be completed to the satisfaction of the District.

It is expressly understood and agreed that the Engineer shall not furnish any of the Additional Services without first obtaining written authorization from the Director. The District shall have no obligation to pay for Additional Services that have been rendered without prior written authorization from the Director.

#### SECTION 4

##### TIME FOR PERFORMANCE

All Basic Services shall be completed within 392 calendar days of the notice to proceed. It is understood and agreed that the time during which the Engineer's work is under review by the District shall not be included in the calendar day time allowed for completion. All Additional Services shall be completed within the time set forth in the applicable work authorization.

Where the Director determines that good cause exists, the Director may extend the time for performance of Basic Services or Additional Services. Any extensions of time granted by the Director shall be in writing.

#### SECTION 5

##### THE ENGINEER'S COMPENSATION

For and in consideration of the Basic Services performed by the Engineer, as set forth in Section 1, the District shall pay the Engineer a fixed fee of \$595,150.65, with monthly payments toward same based on the percentage of each task completed during the preceding calendar month, subject to acceptance by the District. The fee allocation by task to be used for billing purposes is as follows:

	<u>Amount</u>
A.1 Project Management	\$ 95,500.00
A.2 Preliminary Engineering Report	<u>\$499,650.65</u>
	\$595,150.65

Adjustments to the fee allocation may be made within the Total Basic Services Fee with prior review and written approval by the Director.

The District shall reimburse the Engineer according to the following rates for Additional Services provided pursuant to Section 3 by employees of the Engineer:

<u>Responsibility</u>	<u>Maximum Hourly Rate</u>
Senior Project Manager .....	\$265.00
Senior Engineer.....	\$240.00
Project Engineer.....	\$180.00
Engineer-In-Training (EIT).....	\$120.00
Engineer Technician.....	\$120.00
Senior CADD Operator .....	\$110.00
Administrative / Clerical .....	\$ 75.00

The District may also authorize Additional Services to be compensated on a fixed fee basis upon acceptance by the Engineer. The District shall pay the Engineer a prorated amount of the fixed fee monthly, based on the percentage of the task completed during the preceding calendar month,

subject to acceptance by the District. Where authorization of Additional Services is made on a fixed fee basis, the hourly rates set out above shall not apply.

Notwithstanding anything that may be construed to the contrary herein, in no event shall the Engineer be entitled to compensation and reimbursement in excess of \$391,547.35 for performing Additional Services hereunder. Nor shall the Engineer be required to perform Additional Services hereunder after becoming entitled to compensation and reimbursement of \$391,547.35 for Additional Services.

Adjustments to the Additional Services budget allocation may be made with written approval by the Director.

It is expressly understood that the Engineer shall neither seek reimbursement nor will the District be obligated to pay or reimburse the Engineer for normal business expenses such as overtime, postage, messenger services, delivery charges, mileage within Harris County, parking fees, facsimile (fax) transmissions, computer time on in-house computers and graphic systems, blue-line drawings or photocopies specifically required in Section 2, or other costs or expenses, except those for which reimbursement is specifically provided in the following sentence. If approved in writing by the Director prior to their being incurred, the Engineer may be reimbursed the reasonable and necessary cost of the following, to the extent they are incurred in providing services hereunder: services performed by a subcontractor pursuant to authorization for such expenses and as permitted by the County Purchasing Act, copies of reports or other documents to be delivered to the District or in accordance with instructions of the District in excess of the number specifically required by Section 2, costs of travel outside of Harris County, rental costs of transportation equipment necessary to gain access to the Project site, costs of presentation materials (i.e., charts, slides, transparencies), costs of abstracting, and costs of photographic and video services.

## SECTION 6

### TIME OF PAYMENT

During the performance of the services provided herein, at intervals of not fewer than thirty (30) days each, the Engineer shall submit to the District a statement sworn to by the Engineer or an officer of the Engineer, in a form acceptable to the Harris County Auditor and in compliance with Section 5, setting forth the services completed and the compensation due for the same, plus the amounts payable under Section 3 (Additional Services and Charges) that have not been previously billed or paid. All hourly charges shall be itemized on the basis of the hourly rates and shall be certified in writing by the Engineer to be true and correct. The Director and the Harris County Auditor shall approve the statement after review, with such modifications as may be deemed appropriate. The District shall pay each statement approved within thirty (30) days after approval by the Director and the County Auditor, provided that the approval or payment of any such statement shall not be considered to be evidence of performance by the Engineer to the point indicated by such statement, or of the receipt of or acceptance by the District of the work covered by such statement. The Engineer shall in no case submit an invoice for less than \$500.00, except where the invoice is for the final payment.

Time sheets corroborating the information provided in the statement, signed by individuals performing services under this Agreement and their supervisor(s), showing the name of each individual performing services hereunder, the date or dates that he or she performed said services, his or her hourly rate, the total amount billed for each individual, and the total amount billed for all individuals, and including such other details as may be requested by the Harris County Auditor for verification purposes, shall be kept and maintained by the Engineer for a period of five (5) years after the completion of performance hereunder. The Director and/or the County Auditor

shall have the right, after giving written notice, to review any and all documents or other data in the custody of the Engineer, in connection with any statement submitted by the Engineer to the District for approval and payment by the District.

## SECTION 7

### TERMINATION

The Director may terminate this Agreement at any time by notice in writing to the Engineer. Upon receipt of such notice, the Engineer shall discontinue all services in connection with the performance of this Agreement. As soon as practicable after receipt of notice of termination, the Engineer shall submit a statement showing in detail the services performed under this Agreement to the date of termination. The District shall pay the Engineer that proportion of the total fee which the services actually performed under this Agreement bear to the total services called for herein, less such payments on account of the charges as have been previously made. Copies of all complete or partially complete designs, plans, specifications, and other documents prepared or obtained under this Agreement shall be delivered to the District when and if the Agreement is terminated.

## SECTION 8

### NOTICES AND COMMUNICATIONS

All notices and communications under this Agreement shall be mailed by certified mail, return receipt requested, or delivered to the Engineer at the following address:

CONSOR Engineers, LLC  
15310 Park Row  
Houston, Texas 77084  
Attn: Zina Schwartz, P.E.

All notices and communications under this Agreement shall be mailed by certified mail, return receipt requested, or delivered to the District at the following address:

Harris County Flood Control District  
9900 Northwest Freeway  
Houston, Texas 77092  
Attn: Executive Director

## SECTION 9

### LIMIT OF APPROPRIATION

The Engineer clearly understands and agrees, such understanding and agreement being of the absolute essence to this Agreement, that District shall have available the total maximum sum of \$986,698.00 specifically allocated to fully discharge any and all liabilities that may be incurred by District pursuant to the terms of this Agreement, and that the total maximum compensation the Engineer may become entitled to hereunder and the total maximum sum the District shall become liable to pay to the Engineer hereunder shall not under any conditions, circumstances, or interpretations hereof exceed the said total maximum sum provided for in this Section and certified as available therefor by the County Auditor as evidenced by the issuance of a purchase order from the Harris County Purchasing Agent.

## SECTION 10

### SUCCESSORS AND ASSIGNS

The District and the Engineer 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. Neither the District nor the Engineer shall assign, sublet, or transfer its or his interest in this Agreement without the written consent of the other. Nothing herein shall be construed as creating any personal liability on the part of any officer or agent of any public body that may be a party hereto.

## SECTION 11

### PUBLIC CONTACT

The Engineer shall under no circumstances release any material or information developed in the performance of services hereunder, without the prior express written permission of the Director. Contact with the news media, private citizens, or community organizations shall be the sole responsibility of the District. Inquiries concerning this Agreement or Project shall be referred to the Director.

## SECTION 12

### COMPLIANCE AND STANDARDS

The Engineer agrees to perform the work hereunder in accordance with generally accepted standards applicable thereto and shall use that degree of care and skill commensurate with the Engineer's profession to comply with all applicable state, federal, and local laws, ordinances, rules, and regulations relating to the work to be performed hereunder and the Engineer's performance. The Engineer represents that, prior to performing hereunder, he has or shall obtain all necessary licenses, ownership, or permission for use of any and all proprietary information, materials, or trade secrets employed in the performance of work hereunder for the District and agrees that it shall not copy, reproduce, recreate, distribute, or use any such proprietary information, materials, or trade secrets of any third party, except to the extent permitted by such third parties, or as otherwise authorized by law.

In accordance with TEX. GOV'T CODE ANN. § 2271.002, the Engineer warrants and represents that it does not boycott Israel and agrees that it will not boycott Israel during the term of this contract.

The Engineer represents and certifies that, at the time of execution of this Agreement, the Engineer (including, in this provision, any wholly owned subsidiary, majority-owned subsidiary, parent company or affiliate of the same) is not listed by the Texas Comptroller of Public Accounts pursuant to Chapters 2252 or 2270 of the Texas Government Code, nor will the Engineer engage in scrutinized business operations or other business practices that could cause it to be listed during the term of this Agreement.

The Engineer warrants and represents, in accordance with Tex. Gov't Code Ann. § 2274.002, that unless the Engineer meets an exemption under subsection (c), then, as required by subsection (b), the Engineer's signature on this Agreement constitutes the Engineer's written verification that it does not boycott energy companies and will not boycott energy companies during the term of the contract.

The Engineer warrants and represents, in accordance with Tex. Gov't Code Ann. § 2274.002, that unless the Engineer meets an exemption under subsection (c) or section 2274.003, then, as required by subsection (b) of section 2274.002, the Engineer's signature on this Agreement constitutes the Engineer's written verification that it does not have a practice, policy, guidance, or



directive that discriminates against a firearm entity or firearm trade association and will not discriminate against a firearm entity or firearm trade association during the term of the contract.

### SECTION 13

#### LICENSE REQUIREMENTS

The Engineer shall have and maintain any licenses or certification required by the State of Texas or recognized professional organization governing the services performed under this Agreement.

### SECTION 14

#### CERTIFICATE OF INTERESTED PARTIES

In compliance with Government Code § 2252.908, the Engineer must submit a completed Certificate of Interested Parties Form 1295, including an unsworn declaration and the Certification of Filing, printed after completing the electronic filing requirements on the Texas Ethics Commission website (see [www.ethics.state.tx.us/whatsnew/elf\\_info\\_form1295.htm](http://www.ethics.state.tx.us/whatsnew/elf_info_form1295.htm)), to the District along with this signed Agreement.

### SECTION 15

#### CONFLICT OF INTEREST CERTIFICATION

The Engineer certifies that the Engineer has complied with Chapter 176 of the Texas Local Government Code by completing and filing any required conflict of interest disclosures or questionnaires (see [www.ethics.state.tx.us/forms/CIQ.pdf](http://www.ethics.state.tx.us/forms/CIQ.pdf)). If this certification is materially incomplete or inaccurate, the Engineer acknowledges that the District shall have the right to terminate this Agreement without prior notice.

### SECTION 16

#### INDEMNIFICATION

**TO THE EXTENT ALLOWED BY LAW, THE ENGINEER AGREES TO INDEMNIFY AND HOLD HARMLESS THE DISTRICT, ITS OFFICERS, EMPLOYEES, AND AGENTS FROM LIABILITY, LOSSES, EXPENSES, DEMANDS, REASONABLE ATTORNEYS' FEES, AND CLAIMS FOR BODILY INJURY (INCLUDING DEATH) AND PROPERTY DAMAGE TO THE EXTENT CAUSED BY THE NEGLIGENCE, INTENTIONAL TORT, INTELLECTUAL PROPERTY INFRINGEMENT OF THE ENGINEER (INCLUDING THE ENGINEER'S AGENTS, EMPLOYEES, VOLUNTEERS, AND SUBCONTRACTORS/CONSULTANTS UNDER CONTRACT, OR ANY OTHER ENTITY OVER WHICH ENGINEER EXERCISES CONTROL) IN THE PERFORMANCE OF THE SERVICES DEFINED IN THIS AGREEMENT. THE ENGINEER SHALL ALSO SAVE THE DISTRICT HARMLESS FROM AND AGAINST ANY AND ALL EXPENSES, INCLUDING REASONABLE ATTORNEYS' FEES, IN PROPORTION TO THE ENGINEER'S LIABILITY, THAT MIGHT BE INCURRED BY THE DISTRICT, IN LITIGATION OR OTHERWISE RESISTING SUCH CLAIMS OR LIABILITIES.**

### SECTION 17

#### INSURANCE REQUIREMENTS

Coverage and Limits. During the Term of this Agreement and any extensions thereto, the Engineer at its sole cost and expense shall provide insurance of such type and with such terms and limits as may be reasonably associated with this Agreement. As a minimum, the Engineer shall provide and maintain the following coverage and limits:

(a) Workers Compensation, as required by the laws of Texas, and Employers' Liability, as well as All States, United States Longshore & Harbor Workers Compensation Act and other endorsements, if applicable to the project, and in accordance with state law.

Employers' Liability

(i)	Each Accident	\$1,000,000
(ii)	Disease – Each Employee	\$1,000,000
(iii)	Policy Limit	\$1,000,000

(b) Commercial General Liability, including but not limited to, the coverage indicated below. This policy will provide coverage for personal and bodily injury, including death, and for property damage, and include an endorsement for contractual liability. Coverage shall not exclude or limit the Products/Completed Operations, Contractual Liability, or Cross Liability. Where exposure exists, the District may require coverage for watercraft, blasting, collapse, explosions, blowout, cratering, underground damage, pollution, and other coverage. *The District shall be named Additional Insured on primary/non-contributory basis.*

(i)	Each Occurrence	\$1,000,000
(ii)	Personal and Advertising Injury	\$1,000,000
(iii)	Products/Completed Operations	\$1,000,000
(iv)	General Aggregate (per project)	\$2,000,000

(c) Professional Liability/Errors and Omissions, in an amount not less than One Million Dollars (\$1,000,000) per claim and in the aggregate.

(d) Umbrella/Excess Liability in an amount not less than One Million Dollars (\$1,000,000) per occurrence and in the aggregate. *The District shall be named Additional Insured on primary/non-contributory basis.*

(e) Automobile Liability insurance to include the Engineer's liability for death, bodily injury, and property damage resulting from the Engineer's activities covering use of owned, hired, and non-owned vehicles, with combined single limit of not less than One Million Dollars (\$1,000,000) for each accident. *The District shall be named Additional Insured on primary/non-contributory basis.*

(f) Any other coverage required of the Engineer pursuant to statute.

**Delivery of Policies.** Immediately upon execution of this Agreement and before any services are commenced by the Engineer, the Engineer shall provide the District evidence of all of the above coverage on forms and with insurers acceptable to the District. The Engineer must maintain a valid Certificate of Insurance as described herein on file with the District at all times during the term of this Agreement. The Engineer must either (1) mail the Certificate of Insurance to the District at 9900 Northwest Freeway, Houston, TX 77092, Attn: Contract Management or (2) submit it by email to [HCFCFCD\\_AdminServices@hcfcd.hctx.net](mailto:HCFCFCD_AdminServices@hcfcd.hctx.net).

**Issuers of Policies.** Coverage shall be issued by company(s) licensed by the Texas Department of Insurance to do business in Texas, unless said coverage is not available or economically feasible except through an excess or surplus lines company, in which case the company(s) should be registered to do business in Texas. Companies shall have an A.M. Best rating of at least A-VII.

**Certificates of Insurance.** The Engineer shall provide unaltered Certificates of Insurance which evidence the required coverage and endorsements and satisfy the following requirements:

- (a) Be less than 12 months old;
- (b) Include all pertinent identification information for the Insurer, including the company name and address, policy number, NAIC number or AMB number, and an authorized signature;
- (c) Include the project name and reference numbers and indicate the name and address of the Project Manager in the Certificate Holder Box; and
- (d) Be appropriately marked to accurately identify:
  - (i) All coverage and limits of the policy;
  - (ii) Effective and expiration dates;
  - (iii) Waivers of subrogation, endorsement of primary insurance and additional insured language, as described herein.

**Certified Copies of Policies and Endorsements.** Upon request, the Engineer shall furnish certified copies of insurance policies and endorsements to the District.

**Renewal Certificates.** Renewal certificates are due to the District at least thirty (30) days prior to the expiration of the current policies.

**Subcontractors.** If any part of the Agreement is sublet, insurance shall be provided by or on behalf of any subcontractor, and shall be sufficient to cover their portion of the Agreement. The Engineer shall furnish evidence of such insurance to the District as well.

**Additional Insured.** The Engineer shall include the District and its respective officers, directors, agents, and employees as an Additional Insured on the Commercial General Liability, Automobile Liability, and Umbrella/Excess Liability insurance certificates. The Engineer's coverage shall be primary insurance to any similar insurance maintained by the District and must contain an endorsement stating such. Coverage to the District as an Additional Insured on any of the Engineer's insurance coverage shall not be subject to any deductible.

**Deductibles.** The Engineer shall be responsible for and pay any claims or losses to the extent of any deductible amounts applicable under all such policies and waives any claim it may have for the same against the District, its officers, directors, agents, or employees.

**Claims-made Policies.** All insurance policies written on a claims-made basis, including Professional Liability/Errors and Omissions, shall be maintained for a minimum of two (2) years following completion of all services under this Agreement ("Extended Reporting Period"). The Engineer shall obtain or maintain full prior acts coverage at least to the effective date of this Agreement in the event of a carrier or policy change.

**Waiver of Subrogation.** The Engineer waives any claim or right of subrogation to recover against the District, its officers, directors, agents, and employees ("Waiver of Subrogation"). Each policy required under this Agreement must contain a Waiver of Subrogation endorsement.

**Notice of Cancellation, Non-Renewal, or Material Change.** The Engineer shall provide the District with thirty (30) days' minimum written notification in the event of cancellation, non-renewal, or material change to any or all of the required coverage.

**Remedies for Noncompliance.** Failure to comply with any part of this Article is a material breach of this Agreement. The Engineer could immediately, and without notice, have all compensation withheld or suspended, be suspended from providing further services, or be terminated from this Agreement for any lapse in coverage or material change in coverage which causes the Engineer to be in noncompliance with the requirements of this Article.



## SECTION 18

### OWNERSHIP OF PLANS, COPYRIGHT

The District shall be the absolute and unqualified owner of any information, programs, Mylar reproducibles, plans, preliminary layouts, sketches, reports, cost estimates, inventions, software, firmware, designs, computer applications, computations, computer input/output information, and other documents or materials prepared pursuant to this Agreement, including source codes therefor, with the same force and effect as if the District prepared the same. The District shall have an exclusive and perpetual copyright in and to any and all materials produced for the District pursuant to this Agreement and the Engineer shall convey and assign, and does hereby convey and assign, to District all right, title, and interest, including but not limited to copyright, the Engineer may have or may acquire in and to such materials. The Engineer agrees that work performed hereunder for the District will be deemed to have been done, to the extent authorized by law, on a "works made for hire" basis. In the event and to the extent such works are determined not to constitute "works made for hire" as that term is understood in copyright law, the Engineer hereby irrevocably assigns and transfers to the District all right, title, and interest in and to such works, including, but not limited to, copyrights. The Engineer agrees to promptly deliver to the District copies, in a form acceptable to the Director, of any and all such information, programs, Mylar reproducibles, plans, preliminary layouts, sketches, reports, cost estimates, inventions, software, firmware, designs, computer applications, documents, materials and/or data, including the source codes therefor, upon request from the District. Copies of all complete or partially complete information, programs, Mylar reproducibles, plans, preliminary layouts, sketches, reports, cost estimates, inventions, software, firmware, designs, computer applications, and other documents and materials, including source codes therefor, prepared pursuant to this Agreement, shall also be delivered to the District when and if the Agreement is terminated, or upon completion of performance hereunder, whichever occurs first. The Engineer may retain one (1) set of reproducible copies of such documents and materials, but such copies shall be for the Engineer's use in the preparation of studies or reports for the District only. The Engineer is expressly prohibited from selling, licensing, or otherwise marketing or donating such documents or materials, or using the same in the preparation of work for any other client without the express written permission of the Director. The Engineer does not intend or represent that construction documents or materials will be suitable for reuse. If the District reuses the same, such action shall be at the District's risk and without liability to the Engineer. If the Engineer furnishes partially complete plans, layouts, sketches, specifications, or other documents and materials by virtue of termination under Section 7 above, the Engineer shall not be held accountable or responsible for the completeness of any document or material so produced.

## SECTION 19

### MODIFICATIONS

This instrument contains the entire Agreement between the parties relating to the rights herein granted and obligations herein assumed. Any oral or written representations or modifications concerning this instrument shall be of no force or effect, excepting a subsequent modification in writing signed by both parties.

EXECUTED on \_\_\_\_\_.

APPROVED AS TO FORM:

CHRISTIAN D. MENEFEE  
Harris County AttorneyHARRIS COUNTY FLOOD CONTROL  
DISTRICT

DocuSigned by:  
  
ED17653073344AD...

By \_\_\_\_\_  
EMILY KUNST  
Assistant County Attorney


By \_\_\_\_\_  
LINA HIDALGO  
County Judge

ATTEST:

DocuSigned by:  
  
CEEDF4379F83452...

Steve Lewis  
\_\_\_\_\_  
Name  
Project Mgr  
\_\_\_\_\_  
Title

CONSOR ENGINEERS, LLC

DocuSigned by:  
  
CEEDF4379F83452...

Zina Schwartz  
\_\_\_\_\_  
Name  
Project Mgr  
\_\_\_\_\_  
Title

## APPENDIX A

### GENERAL SCOPE OF BASIC SERVICES

#### GENERAL

The intent of the basic services is to prepare a Preliminary Engineering Report (PER) and conceptual design for Flood Reduction Study - Cedar Bayou Main Stem (Q100-00-00) – IH-10 to SH 46. The scope of services for basic services is as follows:

#### Project Description

The Scope of Work for the project involves developing preliminary engineering report for drainage improvements to eliminate or substantially reduce flooding risk and damages. The goal of the project is to identify the best drainage solution and associated Level of Service (LOS) which will maximize the use of HCFCD's \$22.9 million bonding budget. The drainage solution will be developed to a 30% design stage and presented to the public.

The project study area includes the Cedar Bayou Main Stem (Q100-00-00) and major tributaries from IH-10 on the north side to SH 146 on the south side. The proposed drainage solution will be located within Harris County.

Our understanding of the project scoped is based on scoping meetings held on 12/11/21 and 1/20/22, and exhibits provided by HCFCD.

#### Reference Materials and Standards:

- Harris County Flood Control District:
  - Criteria Manual for the Design of Flood Control and Drainage Facilities in Harris County.
  - Policy and Design Criteria Manual for the Design of Flood Control and Drainage Facilities.
  - Surveying Guidelines.
  - HCFCD Drawing and Graphic Standards.
  - Geotechnical Guidelines.
  - Harris County Floodplain Reference Marks (<http://www.harriscountyfrm.org/>).
- For Design Documentation Report and other requirements: U.S. Army Corps of Engineers:
  - ER 1110-2-1150 – Engineering and Design for Civil Works Projects.
  - ER 1110-1-12 – Quality Management.
- Wherever there are differences in requirements between the reference materials and standards and this scope, the Engineer shall perform services in accordance with the stricter requirements.
- Units of Measure - This Project shall be prepared using English units.
- Deliverables in Electronic Format: In addition to the hard copy Project deliverables required below, the Engineer shall submit electronic copies of intermediate and final reports, documents, plans and other work products on Compact Disks (CDs) or other suitable media.
  - Submit text files in Microsoft Word 97 or later version.
  - Submit design drawing files and exhibits in AutoCAD Civil 3D 2011 or later version format.

- Submit a duplicate of text and drawing files in PDF format using Acrobat 5.0 or later version.
- Submit photographs in a digital format converted to a JPEG image and stored on the CD. Images shall have a resolution no lower than 1024 X 768.

## 1. PROJECT MANAGEMENT DURING BASIC SERVICES

Perform Project management and administration necessary for completion of the Project. Services shall include, but are not limited to, the following:

- Provide sub-consultant contract management.
  - The Engineer shall not subcontract any part of its Contract without approval by the Director.
  - The Engineer shall evaluate Sub-Consultant proposals to the same extent as if the services were performed by the Engineer.
  - The Engineer shall be responsible for services performed by Sub-Consultants to the same extent as if the services were performed by the Engineer.
  - The Engineer shall replace any Sub-Consultant when requested to do so by the Director, who shall state the reasons for such request.
  - The Engineer shall provide the Director with a copy of any of its Consultant subcontracts at the Director's request.
- Attend Project kickoff meeting and monthly status meetings. Provide an agenda for each meeting and follow up with meeting minutes after each meeting.
- Attend bi-weekly status calls with BIMT PM.
- Develop and maintain a Project Performance Certification (PPC) that will be submitted on a monthly basis sharing project status updates and an update project schedule.
- A schedule will be developed for in Primavera P6 in coordination with the BIMT. Updated information will be provided to the BIMT on a monthly basis.
- Submit a pdf file of the report, plans, exhibits, and CAD files as requested by the HCFCD project manager. Interim submittals include, but are not limited to, the following:
  - Data Collection Memo
  - Existing Conditions Modeling Memo
  - Proposed Alternatives Memo
  - Draft Preliminary Engineering Report

## 2. PRELIMINARY ENGINEERING REPORT

Prepare a comprehensive Preliminary Engineering Report (PER) detailing up to three (3) alternatives and providing a recommended solution for the implementation that is cost effective and constructable. Engineering drawings/ and exhibits included in the report shall be in accordance with HCFCD's latest Drawing and Graphic Standards, and Surveying Guidelines. The report preparation shall follow Quality Assurance/Quality Control (QA/QC) procedures that meet or exceed the District's own requirements (written procedure available upon request). The Engineer may choose to use the District's procedures or submit their own for approval prior to proceeding with design. Prepare a comprehensive Project schedule to be maintained at all times and submitted with monthly invoices. The document shall be prepared to include the following as a minimum, and additional report requirements and applicable subject matter can be found in Section 19 of the District's Policy Criteria & Procedure Manual.

- A. Evaluation of existing site conditions: Conduct onsite review of existing site conditions, existing problems, and identify any constraints. Research/collect/review previous drainage



studies, geotechnical reports, public and private utility data, right-of-way information, and adjacent land use. Review on-going and planned public projects in the Project area. Review bathymetric survey performed for MAAPnext.

Procure new topographic surveys, geotechnical investigations, and utility investigations as necessary. Coordinate with BIMT and HCFCD Environmental group to ensure all appropriate Rights-of-Entry and environmental investigations have been obtained prior to commencing any fieldwork.

Submit a Data Collection Memo to BIMT for review.

**B. Existing Conditions Hydrologic and Hydraulic (H&H) Analysis:**

Review the Existing Conditions MAAPnext HEC-HMS models provided by the HCFCD and proposed conditions modeling developed as part of the Cedar Bayou FRRS. No updates to the hydrologic model are anticipated; however, adjustments to flow application may require proportioning flow from hydrologic model results.

Review the MAAPnext HEC-RAS model provided by BIMT. Update the HEC-RAS model as necessary by truncating the model, adjusting the 2D modeling as needed and incorporating data collected for the project. Updated models will be submitted with a memorandum documenting the assumptions and updates made. Any differing conditions that are not captured in provided model should be discussed with BIMT and included in memorandum.

Analysis should be performed for the 2-yr (50% annual exceedance probability (AEP), 5-year (20% AEP), 10-year (10%) AEP), 25-year (4% AEP), and 100-year (1% AEP) storm events. These events all assume the newly adopted Atlas 14 rainfall.

- 1) Review existing conditions models provided by BIMT and conduct required H&H analysis to assess existing conditions and to perform proposed conditions analyses for chosen project scenarios and alternatives. Unsteady 2D RAS is anticipated to be used for each project.
- 2) Submit updated Existing Conditions models to BIMT for review and respond to BIMT. Model submittals should be reviewed by the consultant prior to submittal to the BIMT. Documentation of the reviews should be provided with the submittal package.
- 3) Coordinate model revisions with BIMT.
- 4) Submit an Existing Conditions Memo to BIMT for review based on HCFCD report standards.
- 5) Engineer to await BIMT approval of existing conditions analysis before proceeding into Task 1.C.

**C. Concept Development and Alternatives Identification**

- 1) Identify up to five (5) potential flood reduction measures that may be further evaluated in Task D. Provide high-level information of the potential benefits, channel level of service, detention requirements, costs, ROW needs, environmental impacts and potential mitigation measures, and utility constraints. Utility constraints at this stage shall be based on available as-builts and GIMS maps only. Proposed flood reduction measures presented shall achieve the intended goals of the project and shall not create negative impacts.

- 2) Review Environmental assessments provided by BIMT. Coordinate with HCFCD environmental staff and consultants. Incorporate BIMT environmental assessments in alternative development, design, and cost estimate.
- 3) Prepare a presentation, exhibits, and other materials and facilitate one (1) concept development workshop. The workshop should cover:
  - i. Project and Area Background
  - ii. Existing hydraulic conditions, flooding issues and impacts.
  - iii. Conceptual flood risk reduction alternatives
  - iv. Design constraints
  - v. Recommendations for alternatives to further study
- 4) Engineer to await BIMT approval of existing conditions analysis and conceptual alternatives before proceeding into Task 1.D.

**D. Proposed Alternatives H&H and Results Analysis:**

Provide quantification of the analysis results/benefits for up to three (3) of the concepts developed in Task 1.C, with a detailed narrative and supporting tables, exhibits, and appendices. All alternatives should include an assessment of the benefits for each storm event. Tasks include:

- 1) Evaluate the alternatives with HEC-RAS and HEC-HMS modeling to understand the project requirements, channel and detention sizes, and benefits of each alternative.
- 2) Address the existing and proposed ROW requirements. Number of parcels/structures impacted; inundation area (including regulatory floodplain) impacted; and miles of roadway impacted.
- 3) Assess benefits and impacts of the proposed alternatives.
- 4) Provide corresponding engineering estimate of probable construction cost estimates with right-of-way acquisition costs, environmental mitigation and construction management costs as necessary.
- 5) Submit a Proposed Alternatives Memo to BIMT based on HCFCD report standards.
- 6) Submit proposed alternative models to BIMT for review and respond to BIMT comments.
- 7) Coordinate model revisions with BIMT.
- 8) Prepare a presentation, exhibits, and other materials and facilitate one (1) proposed alternatives workshop with the BIMT and relevant HCFCD staff. The workshop will be used to discuss the modeled alternatives, analysis findings, and determine which alternative will be the preferred flood reduction alternative. Presentation materials will be reviewed by the BIMT prior to the workshop and comments must be addressed.
- 9) Submit a Proposed Alternatives Memo to BIMT for review based on HCFCD report standards.
- 10) Engineer to await BIMT approval of the proposed alternatives analysis before proceeding into Task 1.E.

**E. Preferred Flood Reduction Alternative**

- 1) Develop the preferred alternative to include a conceptual (30%) design, including plan view and grading for the channel alignment and/or detention ponds.

For the purposes of scoping, 30% design will be assumed to be one (1) detention pond site at approximately 70 acres each and outfall. Major channel improvements are not anticipated.

- 2) Optimize the hydraulics of the preferred alternative to maximize project benefits.

- 3) Field survey of existing utilities (SUE Quality Level C). Review environmental, geotechnical, and utility information to ensure conflicts are minimized and the channel and detention ponds can maintain slope stability.
  - 4) Review and update ROW requirements based on review of preferred alternative in Task 1.D
  - 5) Update the terrain dataset with the proposed project grading in accordance with the model management guidelines.
  - 6) Update the engineers estimate of probable construction cost
  - 7) Complete HCFCD Project Scoring Form.
  - 8) Prepare a phasing plan (two (2) phases) for improvements if necessary and include an evaluation of phase costs and an interim conditions assessment.
- F. Preliminary Engineering Report: Prepare a Preliminary Engineering Report that describes the project analysis, including existing conditions, concept development of alternatives, proposed alternatives, and preferred flood reduction alternative. Present factors of comparison such as operation, cost, constructability, environmental impacts and mitigation measures, utility conflicts, maintenance requirements, safety and aesthetics. Include 30% plans of the recommended alternative for final design and implementation.
- 1) Coordinate with BIMT during development of Draft PER. PER format must meet HCFCD and BIMT standards prior to submittal to the HCFCD.
  - 2) Provide Draft PER for BIMT review. PER Checklist (provided by BIMT) will be included with the submittal. Address BIMT comments and provide comment response log to ensure all comments are addressed.
  - 3) Upon approval of the draft report by the BIMT, submit draft PER to HCFCD for review. Address HCFCD comments and provide comment response log to ensure all comments are addressed.
  - 4) Provide Final PER draft to BIMT and HCFCD including models, shapefiles, cost estimates, PER Checklist, and any other backup information.
  - 5) Deliver three (3) final report hard copies, a pdf file of the report, plans, exhibits, and CAD files as requested by the HCFCD Project Manager.
- G. Project Summary Report  
Provide report summary report for public distribution that provides an overview of the project area, analysis performed and finding during the development of the PER, PER recommendation and project prioritization scoring.

## APPENDIX B

## GENERAL SCOPE OF ADDITIONAL SERVICES

The Engineer shall render the following Additional Services in connection with the Project when authorized in writing by the Director:

## 1. COMMUNITY ENGAGEMENT SERVICES

- A. Provide support services for a community engagement meeting (to be hosted & facilitated by HCFCD) related to the Project in accordance with District guidelines.
  - 1) Participate in 5 preparation meetings
  - 2) Attend one public meeting
  - 3) Coordinate with HCFCD and Bond Implementation Team (BIMT)
  - 4) Attend 2 stakeholders meetings
  - 5) Support HCFCD in preparation of presentation. Provide necessary exhibits, data, and other information pertinent to the project scope.

## 2. SURVEY SERVICES

- A. Perform survey in accordance with the District's Surveying Guidelines and other District design requirements as designated in writing by the Director.
- B. Study Phase Services
  - Survey Control will be established utilizing the Harris County Flood Plain Reference Marks.
  - Maximum of 5 Channel Cross Sections with Water Surface Elevation. Right of entry to be provided by client prior to mobilization.
  - Spot elevations for 1 Potential Detention Pond Site. Approx. 5 shots for the preferred Pond Site (4 Corners and approx. Center). Right of entry to be provided by client prior to mobilization. The assumption is made that the Potential Pond Site will be wooded and Survey Crews will use hand tools to clear minimal lines of sight. Does not include heavy clearing of sites.
  - Locate approx. 15 Borings performed by Geotech consultant. The assumption is made that all Borings will be complete and visibly marked by Geotech.
  - Deliverable will be an AutoCAD file, PDF, DTM file, and CSV Points file.
- C. Boundary and Right-of-Way Survey
  - Category 1A, Condition 3 Boundary Surveys for a maximum of 8 Tracts. The tracts to be surveyed will be determined with right of entry by client.
  - Deliverable will include a signed and sealed Survey, signed and sealed Legal Description, and an AutoCAD file for each tract.
- D. 30% Design Phase Services
  - 1) Topographic Survey for Detention Pond
    - The assumption is made that there will be a maximum of 1 Pond Site for a total survey acreage of approximately 70 acres and wooded. The Survey Crews will use hand tools (machetes, brush axe, etc.) to clear minimal lines of sight. Does not include heavy clearing of sites. 70 acres will consist of approx. 29,000 linear feet of clearing. Estimate of 1,000-1,200 feet of clearing a day is 25-29 days in the field.



- Category 6, Condition 2 Topographic Survey of Proposed Detention Pond Site and Channel Outfall Location. Survey Control needed for the Topographic Survey of the Proposed Pond will be established from Survey Control set during the Study Phase utilizing the Harris County Flood Plain Reference Marks. Topographic surveying will be performed in compliance with the HCFCD's Land Surveying Guidelines of 2019 and Texas Board of Professional Land Surveying standards and will include spot elevations taken at approximate 100-foot intervals, extending approximately 20 feet outside the limits of the proposed pond (where accessible), topographic features (swales, ditches, etc.) within the limits of topographic survey, and visible utilities with rim and flowline elevations. Does not include tree lines or locations of individual trees.

2) Deliverables

- Signed and sealed Survey Control Map and Topographic Survey for each Basin Site in PDF Format
- Existing boundary survey and right-of-way survey, proposed boundary survey and right-of-way, and legal descriptions in PDF format
- AutoCAD File
- DTM File
- CSV Points File

3. GEOTECHNICAL INVESTIGATION

A. Perform in accordance with the District's Geotechnical Investigation Guidelines and other District requirements.

B. Field Exploration

- 1) Site Access. We understand that the project alignment is heavily wooded, and it is difficult to access the project site by a drilling rig. We understand that HCFCD will perform site clearing. We request a 12-ft wide path. Due to soft and swampy site conditions, the borings will be drilled using a swamp buggy rig.
- 2) Drilling and Sampling. We will evaluate the soil stratigraphy and groundwater conditions for the alignment and up to two detention basins by drilling total fifteen (15) soil borings to a depth of 40-ft. The boring schedule is as follows:

<u>Facility</u>	<u>No. of Borings</u>	<u>Depth, ft</u>
Project Alignment	5	40
Two Detention Basins <sup>(1)</sup>	10	40

Notes: 1. We will drill five borings at each detention basin.

- 3) Soil samples will be obtained continuously at boring locations from the ground surface to 25-ft and at five-ft intervals thereafter to the completion depths of the borings. Standard Penetration Tests (SPT) will be performed in sands, if encountered, and the clays will be sampled by a Shelby tube. Shear strengths of the clays will be measured in the field with a hand penetrometer and correlations between this data and laboratory unconfined compression and Torvane tests used to supplement laboratory shear strength data.
- 4) Groundwater. Depth to groundwater will be important for design and construction of the proposed facilities. For this reason, borings will be drilled dry and the depth at which groundwater is encountered will be recorded.

- 5) Piezometers. We will install two (2) piezometers. One piezometer at each detention pond. The piezometers will be two (2)-inches diameter with a 10-ft screen. The piezometers will be developed by GET. They will be monitored twice in one month. The piezometers will be abandoned per TDLR requirements soon after 30-day water level readings. The piezometers will be 35-ft deep.
- 6) Borehole Grouting. All boreholes will be backfilled and mounted with on-site soils after drilling and sampling.

#### C. Laboratory Testing

- 1) Laboratory tests will vary with the soils encountered but will be planned to evaluate soils design parameters for the proposed channel and detention basins.
- 2) It is anticipated that the tests will include moisture content (all samples), hand penetrometer, torvane, unconfined compression, unit weight, moisture content, liquid and plastic limit tests, gradation and hydrometer.
- 3) All of the subsoils will be classified in general accordance with the American Society of Testing Materials (ASTM) Soil Classification System. All tests will be performed in general accordance with the ASTM Procedures.

#### D. Engineering Analyses and Reporting

The field and laboratory data will be summarized in an engineering report. There will be one report. Analyses of these data will be presented, and recommendations made relative to the following:

- o Site conditions, including project site pictures.
- o Generalized soils stratigraphy and groundwater levels.
- o Boring logs using HCFCF Format.
- o Recommendations on design of the detention ponds, including the detailed computerized slope stability, erosion protection and testing.
- o Computerized slope-stability recommendations for short-term, long-term and rapid draw down conditions. A total of five sections will be analyzed along the main channel alignment. A total of 4 cross sections will be analyzed for the two detention ponds, 2 cross sections at each pond.
- o OSHA soil classification.
- o Trench safety recommendations.
- o Recommendations on lateral pressures in the trenches.
- o Recommendations on subsoil dispersive characteristics.
- o Seepage and bottom blow up recommendations.
- o Erosion recommendations, including the use of grass for erosion protection.
- o Recommendations on subsoil stabilization, if necessary.
- o Recommendations on the use of excavated materials as fill, per HCFCF requirements.
- o Recommendations on earthwork, select fill and construction procedures.
- o Recommendations on site drainage.
- o Recommendations on design of outfall structures.
- o Recommendations on the modification of existing channels and tributaries.
- o Recommendations on design of the outfall, including bedding requirements, excavations, and backfilling, etc.
- o Constructability considerations.

#### 4. IMPACT ANALYSIS

- A. Prepare, sign and seal a letter summarizing the impact of the Project on flood profiles and peak flows. Include 2-year, 5-yr, 10-year, 25-year, and 100-year events.

#### 5. SPECIAL LICENSES AND PERMITS

- A. Obtain and pay for required special licenses and permits. The actual costs, including required inspection fees, shall be reimbursed by the District.
- B. This additional service does not include engineering work associated with Basic Services.

#### 6. UTILITY RESEARCH & SUBSURFACE UTILITY EXPLORATION (SUE)

- A. Perform the SUE work required for this project in general accordance with the recommended practices and procedures described in ASCE Publication CI/ASCE 38-02 (Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data).
- B. The specific scope of this proposal includes performing QL-B and QL-A SUE for the preferred alternative site.
- C. The pond location will be located within various areas within Cedar Bayou's Right of Way and will be determined prior to final design. SUE investigations will be focused on investigating approximately 20,000 linear feet of QL-B utilities that may exist in and/or along the channel and that may be impacted by future construction. In addition to the QL-B SUE services, field crews will excavate up to three (3) QL-A test holes following completion of the QL-B field work. Note that access to the project site may not be feasible in certain areas and may require HCFCD assistance to provide clearing in these areas as needed.
- D. Prior to beginning the field work, submit One Call Tickets through the Texas One Call System and other agencies to confirm what utilities exist within the project limits and to notify utility owners of future construction. Following submittal of One Call Tickets, we will begin to compile utility owner information and create a Utility Contact Table containing owner's email, phone numbers and address information. The Contact Table will be used to contact owners and request as-built records of their facilities to be used during the investigation. During the field investigation efforts, field crews can expect to encounter both public and private utilities such as gas, overhead electric and communication, buried communication, water, sanitary sewer, storm sewer, and petroleum pipeline facilities. Upon completion of the QL-B field utilities, survey services will tie all SUE marks in the field and provide completed data for review and comment.
- E. Deliverables
  - Conduct One Calls and Contact Utility Agencies
  - Create Utility Contact Table
  - CAD file in AutoCAD for marked surface features and utilities
  - PDF SUE sheets depicting appropriate callouts along the alignment

#### 7. REVISIONS

- A. Make requested revisions to documents and materials prepared under this Agreement.
- B. Provide such engineering services necessary for such revision, when they are not necessitated by any fault of the Engineer and such revisions are inconsistent with approvals or instructions previously given by the District, or are made necessary by the enactment or revision of codes, laws, or regulations issued subsequent to the preparation of such documents.

**THE STATE OF TEXAS       §**  
**§**  
**COUNTY OF HARRIS       §**

The Commissioners Court of Harris County, Texas, convened at a meeting of said Court at the Harris County Administration Building in the City of Houston, Texas, on \_\_\_\_\_, with the following members present, to-wit:

Lina Hidalgo	County Judge
Rodney Ellis	Commissioner, Precinct No. 1
Adrian Garcia	Commissioner, Precinct No. 2
Tom S. Ramsey, P.E.	Commissioner, Precinct No. 3
Lesley Briones	Commissioner, Precinct No. 4

and the following members absent, to-wit: \_\_\_\_\_, constituting a quorum, when among other business, the following was transacted:

**ORDER AUTHORIZING EXECUTION OF AN AGREEMENT FOR ENGINEERING SERVICES  
 BETWEEN THE HARRIS COUNTY FLOOD CONTROL DISTRICT  
 AND CONSOR ENGINEERS, LLC**

Commissioner \_\_\_\_\_ introduced an order and made a motion that the same be adopted. Commissioner \_\_\_\_\_ seconded the motion for adoption of the order. The motion, carrying with it the adoption of the order, prevailed by the following vote:

		Yes	No	Abstain
AYES:	Judge Lina Hidalgo	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NAYS:	Comm. Rodney Ellis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ABSTENTIONS:	Comm. Adrian Garcia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comm. Tom S. Ramsey, P.E.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Comm. Lesley Briones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The County Judge thereupon announced that the motion had duly and lawfully carried and that the order had been duly and lawfully adopted. The order thus adopted follows:

WHEREAS, the District desires regional detention for the Cedar Bayou Watershed, Harris County Flood Control Unit Q500-01-00, hereinafter called the "Project"; and

WHEREAS, the District desires that the Engineer perform Preliminary Engineering Services in connection with the Project; and

WHEREAS, the Engineer represents that it is capable and qualified to perform the services and prepare the items set forth herein.

NOW, THEREFORE, BE IT ORDERED BY THE COMMISSIONERS COURT OF HARRIS COUNTY, TEXAS THAT:

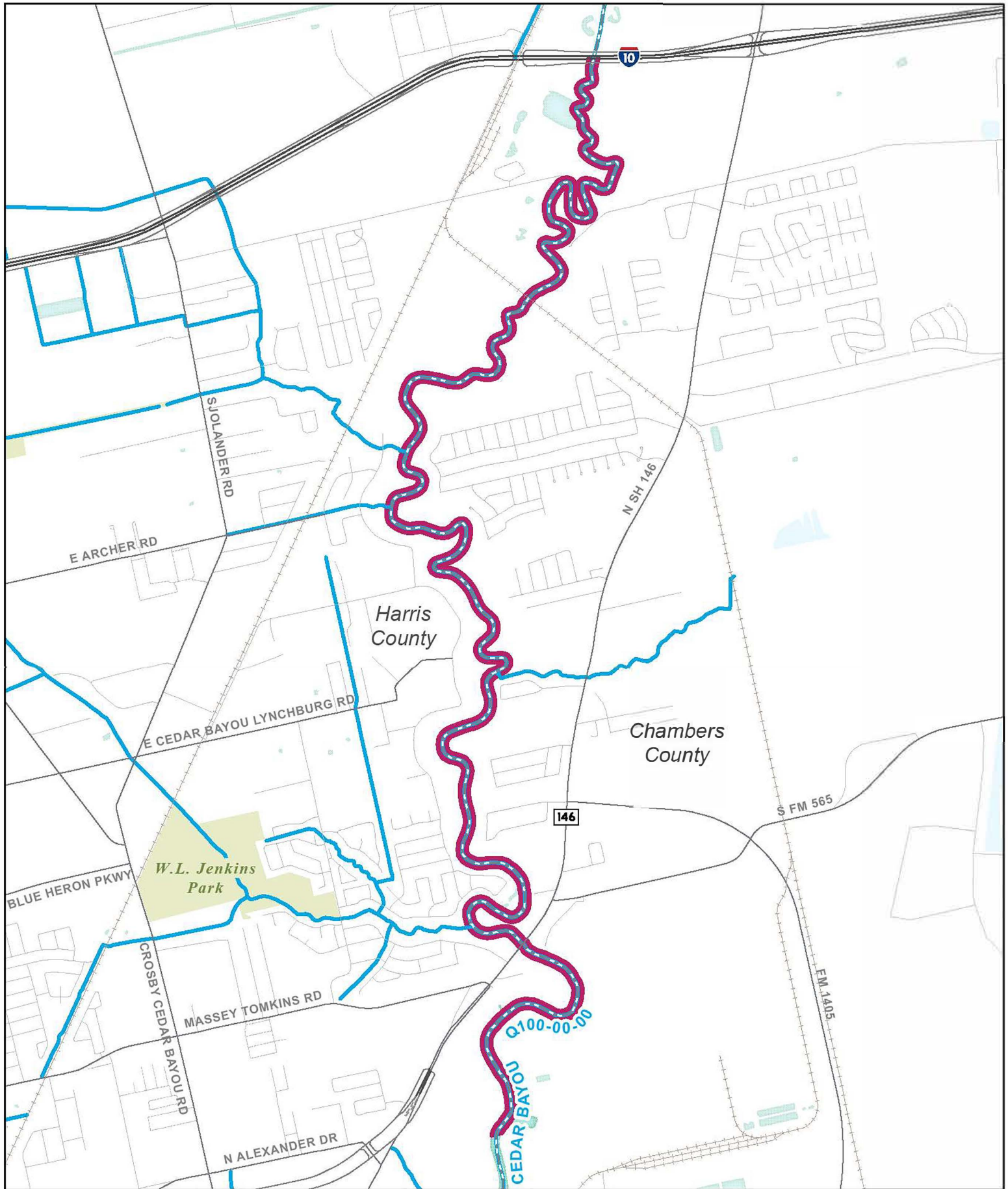
Section 1: The recitals set forth in this order are true and correct.

Section 2: Exemption from the County Purchasing Act under Texas Local Government Code § 262.024(a)(4) is hereby granted.



Section 3: County Judge Lina Hidalgo is hereby authorized to execute for and on behalf of the Harris County Flood Control District, an Agreement by and between the Harris County Flood Control District and CONSOR Engineers, LLC, for a maximum fee to be paid by the District of \$986,698.00, said Agreement being incorporated herein by reference for all purposes as though fully set forth verbatim herein.

pln consor Q100-P003 2022-91.docx



**Project ID: Q100-00-00-P003**  
**Watershed: Cedar Bayou**  
**Precinct: 2**

- Project Boundary
- Harris County Precincts**  
Judge Lina Hidalgo
- 1 - Rodney Ellis
  - 2 - Adrian Garcia
  - 3 - Tom S. Ramsey, P.E.
  - 4 - Lesley Briones

