

**BOARD OF DIRECTORS  
SAN JACINTO RIVER AUTHORITY  
MINUTES OF REGULAR MEETING  
MAY 24, 2018**

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A regular meeting of the Board of Directors of the San Jacinto River Authority was held at 8:00 a.m., May 24, 2018, at the San Jacinto River Authority General and Administration Building, a notice of said meeting was posted as required by law. President Lloyd Tisdale, Secretary Mark Micheletti, Assistant Secretary Jim Alexander, Treasurer Ronnie Anderson, and Board Member Ed Boulware were present. Board Member Kaaren Cambio was not present. General Manager Jace Houston, Deputy General Manager Ron Kelling, Director of Financial and Administrative Services Tom Michel, Director of Raw Water Enterprise David Parkhill, Public Relations Manager Ronda Trow, Woodlands Division Manager Chris Meeks, GRP Division Manager Mark Smith, Lake Conroe Division Manager Bret Raley, Highlands Division Manager Kim Wright, Administrative Services Manager Cynthia Bowman, Financial Advisor Ryan Nesmith, and General Counsel Mitchell Page were in attendance.

**1. CALL TO ORDER**

The meeting was called to order at 8:02 a.m. Mr. Tisdale asked for a moment of silence in remembrance of the victims of recent tragedies on Lake Conroe.

**2. PLEDGES OF ALLEGIANCE**

The Pledges of Allegiance were led by Mr. Tisdale.

**3. PUBLIC COMMENTS**

Mr. Mike Bleier of Montgomery, Texas, Mr. Dennis Albrecht of Kingwood, Texas, Mr. Max Tezano, of Montgomery, Texas, Mr. Willard Morton of Montgomery, Texas, Ms. Amy Slaughter of Kingwood, Texas, Mr. Guy Sconzo of Kingwood, Texas, and Mr. Dan Krueger of Houston, Texas, spoke in reference to agenda item 6d2; Mr. Robert Westover of Kingwood, Texas, spoke about flooding associated with Hurricane Harvey.

Without objection, the agenda was followed out of order.

**6. d. FLOOD MANAGEMENT**

**2. Update Regarding Proposed Seasonal Lowering of Lake Conroe on a Temporary Basis**

Mr. Houston reported that as of May 24, 2018, neither the Texas Commission on Environmental Quality nor the City of Houston had responded to the San Jacinto River Authority Board of Director's proposal of a temporary seasonal lowering of Lake Conroe.

**4. DIVISION UPDATES**

**a. G&A:**

Mr. Houston provided an update under agenda item 6d2.

**b. G & A:**

Ms. Trow provided no update relative to the Public Relations Department.

**c. G & A:**

Mr. Michel provided no update relative to Finance and Administrative Services.

**d. Woodlands:**

Mr. Meeks provided no update relative to the Woodlands Division.

**e. GRP:**

Mr. Smith reported that the GRP Review Committee met on Monday, May 21, 2018, and unanimously recommended approval of the proposed Fiscal Year 2019 GRP Rate Order. He provided information relative to a proposed road-widening project and detention pond that impacted one of the GRP Division's water lines. Mr. Page provided a litigation update relative to the water line break on Segment W2B.

**f. Raw Water:**

Mr. Parkhill provided no update relative to the Raw Water Enterprise.

**g. Lake Conroe:**

Mr. Raley provided information and a brief overview of the administrative fees for the Lake Conroe licensing and permitting program as well as a rate schedule for fees related to the Lake Conroe Reservoir.

**h. Highlands:**

Ms. Wright provided no update relative to the Highlands Division.

**i. Flood Management:**

Mr. Gilman provided an update related to the Corps of Engineers' West Fork San Jacinto River emergency dredging activities.

**5. CONSENT AGENDA**

Mr. Alexander made a motion to approve the consent agenda as recommended. The motion was seconded by Mr. Micheletti and carried unanimously.

**G&A****a. Approval of Minutes**

Approve the minutes of the San Jacinto River Authority Regular meetings of March 22, 2018, and April 26, 2018.

**b. Unaudited Financials for the Month of April, 2018**

Approve the unaudited financials for the month of April, 2018.

**WOODLANDS**

**c. Work Order No. 3 for Land Acquisition Support Services**

Authorize the General Manager to execute Work Order No. 3 with Property Acquisition Services, LLC, in an amount not to exceed \$48,000, for land acquisition support services for various utility line easements in The Woodlands.

**6. REGULAR AGENDA**

**a. G&A**

**1. Annual Agreement for Financial Audit Services**

Mr. Michel explained the selection process as well as the terms of the contract for financial auditing services. Mr. Anderson, Chair of the Finance Committee, stated that they met on May 11, 2018, to review the policies and procedures for selecting the firm. On behalf of the Finance Committee, Mr. Anderson stated that they agreed with staff's recommendation to select Knox Cox & Company, LLP, to provide said services. Mr. Anderson made a motion to authorize the General Manager to execute a contract with Knox Cox & Company, LLP, in the amount of \$66,500, per year for annual financial audit services. The motion was seconded by Mr. Boulware and carried unanimously.

**b. GRP**

**1. Amended Rate Order for GRP Participants**

Mr. Smith stated that the GRP Review Committee met on Monday, May 21, 2018, and recommended approval of the amended rate order for Fiscal Year 2019, which proposed that rates remain unchanged from Fiscal Year 2018 (pumpage fee and import fee - \$2.64 per 1,000 gallons, and surface water fee - \$2.83 per 1,000 gallons). Mr. Alexander made a motion to adopt Order No. 2018-O-01, attached hereto as "Exhibit A", of the San Jacinto River Authority Board of Directors, adopting an amended Rate Order for GRP Participants, effective September 1, 2018. The motion was seconded by Mr. Anderson and carried unanimously.

**c. RAW WATER ENTERPRISE**

**1. Assumption of Rights and Payment Obligations under the Option for Raw Water Supply Contract with the Trinity River Authority**

Mr. Parkhill provided an overview of the rights and payment obligations related to the Trinity River Authority ("TRA") option for raw water supply contract. He stated that in 2013, the ultimate goal of this contract was to meet long term surface water demands in Montgomery County beyond the current available water supplies. He explained the contract granted the San Jacinto River Authority ("SJRA") the option to purchase 50,000 afpy of raw water from Lake Livingston with an option fee of 5%. Mr. Parkhill stated that since 2013, the GRP Division has paid the annual TRA option fee amount of \$234,500, and that in February, 2018, the GRP Review Committee voted to no longer pay the fee with the understanding that SJRA could

either terminate the TRA option agreement and release any rights to the raw water, or SJRA could decide to retain the TRA option agreement and pay for the annual option fee through the SJRA Raw Water Enterprise and retain the contracted rights to the water. Mr. Parkhill explained that, if approved, the Raw Water Enterprise will assume the cost of the contracts and said funds will be included in the Raw Water Enterprise Fiscal Year 2019 budget. Mr. Anderson made a motion to approve the assumption of rights and payment obligations under the Option for Raw Water Supply Contract between the Trinity River Authority and the San Jacinto River Authority by the Raw Water Enterprise, effective September 1, 2018. The motion was seconded by Mr. Micheletti and carried unanimously.

#### **d. FLOOD MANAGEMENT**

##### **1. Resolution Authorizing Participation in San Jacinto River Regional Watershed Study**

Mr. Gilman presented information related to the San Jacinto River Regional Watershed Study, stating that in January, 2018, the intent was to seek grants from the Texas Water Development Board to assist with the cost of the study. Further, he stated that since that time, Harris County Flood Control District (“HCFCD”) submitted a grant application to the Texas Department of Emergency Management (“TDEM”) pursuant to the Hazard Mitigation Grant Program to provide funding for the project. He stated that TDEM’s grant provided for a higher match and reiterated that the project scope and SJRA’s participation remained unchanged from the terms approved in January. Mr. Boulware made a motion to adopt Resolution No. 2018-R-09, attached hereto as “Exhibit B”, of the Board of Directors of the San Jacinto River Authority authorizing participation in San Jacinto River Regional Watershed Study and the execution of agreements in connection therewith. The motion was seconded by Mr. Alexander and carried unanimously.

#### **7. BRIEFINGS AND PRESENTATIONS**

##### **a. Presentation regarding the Woodlands Division 10-Year Project Plan**

Woodlands Division Engineer, Aaron Schindewolf, presented an overview of the Woodlands Division 10-Year Project Plan. He provided information for each project, detailing the funding source and fiscal year in which the projects would be funded. Mr. Schindewolf summarized that the total cost of all Woodlands projects through Fiscal Year 2028 is \$207,398,000.

#### **8. EXECUTIVE SESSION**

The Board of Directors did not convene in executive session.

#### **9. RECONVENE IN OPEN SESSION FOR ACTION FOLLOWING EXECUTIVE SESSION**

No executive session was conducted.

#### **10. ANNOUNCEMENTS / FUTURE AGENDA**

Mr. Tisdale announced that the next San Jacinto River Authority Board of Directors meeting will take place on June 28, 2018.

**11. ADJOURN**

Without objection, the meeting was adjourned at 10:32 a.m.



  
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Mark Micheletti  
Secretary, Board of Directors

# **Exhibit A**

**SAN JACINTO RIVER AUTHORITY**

RATE ORDER

(GRP PARTICIPANTS)

Order No. 2018-0-01

*ADOPTED MAY 24, 2018  
EFFECTIVE SEPTEMBER 1, 2018*

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SAN JACINTO RIVER AUTHORITY

RATE ORDER

(GRP PARTICIPANTS)

THE STATE OF TEXAS           §  
  §  
COUNTY OF MONTGOMERY    §

RECITALS

WHEREAS, the San Jacinto River Authority (the "Authority"), is a conservation and reclamation district, body politic and corporate and a governmental agency of the State of Texas created and operating under the provisions of Chapter 426, Acts of the 45th Texas Legislature, Regular Session, 1937, as amended, enacted pursuant to the provisions of Section 59 of Article XVI of the Texas Constitution (the "Act"); and

WHEREAS, the Authority is authorized by the Act, and the general laws of the State to purchase, construct, acquire, own, operate, maintain, repair, improve, or extend, inside and outside its boundaries, any and all works, improvements, facilities, plants, equipment and appliances necessary to provide a water supply system for serving its needs and/or the needs of its customers; and

WHEREAS, the Authority has entered into certain contracts (the "Customer Contracts") for the financing, construction and operation of the Woodlands Water Supply System (as defined in the Customer Contracts) to serve the conservation and reclamation district customers of the Woodlands Division of the Authority; and

WHEREAS, each of the Customer Contracts has been amended and supplemented by a written addendum, dated as of November 10, 2009 (the "Addenda"), in order to address compliance with groundwater reduction requirements imposed by the Lone Star Groundwater Conservation District (the "Conservation District") and that are applicable to the Authority and the Woodlands Water Supply System; and

WHEREAS, the Authority has entered into contracts (the "GRP Contracts") with certain Large Volume Groundwater Users (as defined in the District Regulatory Plan of the Conservation District) in order to address compliance with groundwater reduction requirements imposed by the Conservation District that are also applicable to the water supply systems of such Large Volume Groundwater Users; and

WHEREAS, the Addenda and the GRP Contracts provide, in pertinent part, that the Authority will: (a) develop, implement, administer and enforce a groundwater reduction plan ("GRP") for the Woodlands Water Supply System and the water supply systems of such other participating Large Volume Groundwater Users (collectively, and inclusive of the Authority, the "Participants"); (b) plan, design, permit, construct, operate, maintain and administer a surface water treatment and transmission system, including all related facilities, improvements, appurtenances, property and interests in property and contract rights needed therefor, and administrative facilities needed in connection therewith (the "Project"); (c) furnish and sell treated surface water from the Project to certain of the Participants, as

feasible and necessary to implement the GRP; (d) assess fees on the pumpage of groundwater wells operated by the Participants; and (e) utilize revenues derived from such treated surface water sales and pumpage fees to finance the Project and the GRP, including the pledge of such revenues to the payment of, and as security for, the bonds or other obligations of the Authority issued or incurred to finance or refinance the Project and the GRP; and

WHEREAS, the Board of Directors of the Authority deems it necessary and proper at this time to establish certain fees, rates and charges applicable to the Participants, as authorized and required under the Addenda and the GRP Contracts, in order to: (a) achieve and maintain compliance with the rules of the Conservation District and the GRP; (b) develop, implement, administer and enforce the GRP; (c) accomplish the purposes of the Addenda and the GRP Contracts, including making available alternative water supplies; (d) recoup certain losses, damages, costs, interest or expenses; (e) purchase, lease, reserve, option or contract for alternative water supplies, by, through or with third parties or the Authority; (f) meet operation and maintenance expenses related to the Project and the GRP; (g) pay certain capital costs, as well as the principal of and interest on certain notes, bonds and/or other obligations issued or incurred, or to be issued or incurred, in connection with the Project, the GRP or the Authority's obligations under the Addenda or the GRP Contracts; (h) satisfy all rate covenants relating to any of such notes, bonds and/or other obligations of the Authority; and (i) establish, accumulate, maintain or replenish one or more operating, debt service, contingency or emergency reserve funds, as deemed reasonably necessary by the Authority;

NOW THEREFORE, BE IT ORDERED BY THE BOARD OF DIRECTORS OF THE SAN JACINTO RIVER AUTHORITY THAT:

## ARTICLE I

### FINDINGS; EFFECTIVE DATE; PRIOR RATE ORDER

Section 1.01: Findings. Each of the recitals stated in this Rate Order are hereby adopted as findings of fact of the Board of Directors. All statutory and contractual requirements and conditions have been met for the establishment of fees, rates, and charges under this Rate Order.

Section 1.02: Effective Date; Prior Rate Order. This Order shall be effective as of September 1, 2018 (the "Effective Date"). That certain prior Rate Order adopted by the Authority on May 25, 2017, designated as Order No. 2017-O-02, shall be repealed and superseded hereby in all respects as of the Effective Date.

## ARTICLE II

### DEFINITIONS; INTERPRETATIONS; REFERENCES

Section 2.01: Definitions. In addition to terms defined elsewhere in this Rate Order, and unless the context requires otherwise, the following terms used in this Rate Order shall have the following meanings and, to the extent applicable, shall serve to supplement terms defined elsewhere in this Rate Order:

"Act" is defined in the recitals hereto and means and includes any amendments to the Act.

"Addenda" is defined in the recitals hereto and means and includes any amendments or supplements to the Addenda.

"Authority" is defined in the recitals hereto and means and includes the legal successors or assigns of the Authority.

"Authority Meters" has the meaning ascribed to such term in the GRP Contracts.

"AWS Well" means any groundwater well operated by any Participant, whether currently in operation or placed into operation hereafter, that produces water qualifying as an "Alternative Water Source" under the Rules.

"AWS Wells" means each and every AWS Well, collectively, whether one or more.

"Conservation District" is defined in the recitals hereto and means and includes the legal successors or assigns of the Conservation District.

"Contract Quantity" has the meaning ascribed to such term in the GRP Contracts.

"Conversion Date" means the date upon a Converted Participant shall begin making payment for Surface Water.

"Converted Participant" means a Participant receiving Surface Water from the Project.

"Converted Participant's Receiving Facilities" means the water plant or other water system facilities at the Point of Delivery where a Converted Participant receives Surface Water from the Project.

"Customer Contracts" is defined in the recitals hereto and means and includes any amendments or supplements to the Customer Contracts.

"Effective Date" is defined in Section 1.02 hereof.

"Fees" means the Pumpage Fee, the Import Fee and the Surface Water Fee, collectively.

"GRP" is defined in the recitals hereto and means and includes any amendments or supplements to the GRP.

"GRP Administrator" has the meaning ascribed to such term in the GRP Contracts.

"GRP Contracts" is defined in the recitals hereto and means and includes any amendments or supplements to the GRP Contracts.

"GRP Drought Contingency Plan" means the Drought Contingency Plan for San Jacinto River Authority GRP Division, adopted by the Board of Directors of the Authority on March 27, 2014, and any amendments or supplements thereto.

"GRP Water Conservation Plan" means the Water Conservation Plan for San Jacinto River Authority GRP Division, adopted by the Board of Directors of the Authority on March 27, 2014, and any amendments or supplements thereto.

"Import Fee" means the fee imposed under Section 3.02(a) hereof.

"Initial-Conversion-Obligation-Adjusted Total Qualifying Demand" or "ICO-Adjusted Total Qualifying Demand" has the meaning ascribed to such term under the Plan and generally means (a) for Total Qualifying Demand of 10 million gallons or greater, 70 percent of the Total Qualifying Demand or 10 million gallons, whichever amount is greater, and (b) for Total Qualifying Demand of less than 10 million gallons, the original Total Qualifying Demand.

"ORS" means the online reporting system offered and maintained by or on behalf of the Authority, currently the "TrueBill" system or any successor system.

"Participant" means any of the Participants, without distinction.

"Participant Meters" has the meaning ascribed to such term in the GRP Contracts.

"Participants" is defined in the recitals hereto and means and includes the Authority, and any Large Volume Groundwater User that executes a GRP Contract with the Authority.

"Payment Commencement Date" has the meaning ascribed to such term in a Participant's GRP Contract with respect to such Participant, or August 1, 2010, with respect to the Authority, if applicable.

"Plan" means the District Regulatory Plan adopted by the Conservation District and includes any amendments, revisions or supplements thereto as may be adopted by the Conservation District on or after the Effective Date.

"Point of Delivery" has the meaning ascribed to such term in the GRP Contracts.

"Project" is defined in the recitals hereto and means and includes any and all extensions, modifications, enlargements or improvements to the Project permitted under the Addenda and the GRP Contracts.

"Pumpage Fee" means the fee imposed under Section 3.01(a) hereof.

"Surface Water Fee" means the fee imposed under Section 3.03 hereof applicable to Surface Water delivered by and through the Project to a Converted Participant.

"Surface Water" means treated surface water delivered by and through the Project (i.e., "Water" as defined under the GRP Contracts).

"Total Qualifying Demand" has the meaning ascribed to such term under the Plan and generally means the final volume of groundwater that a permit holder is authorized under the terms of a permit issued by the Conservation District to produce from Wells in the Gulf Coast Aquifer (Chico, Evangeline and Jasper Aquifers) in calendar year 2009, as determined by the Conservation District in accordance with the Plan.

"Well" means any groundwater well operated by any Participant, whether currently in operation or placed into operation hereafter, that is subject to the groundwater reduction requirements set forth in the Plan. Accordingly, such term does not include any AWS Well.

"Wells" means each and every Well, collectively, whether one or more.

Section 2.02: Interpretations. The article, section, subsection and paragraph headings of this Rate Order are included herein for convenience of reference purposes only and shall not constitute a part of this Rate Order or affect its interpretation in any respect. Except where the context otherwise requires, words imparting the singular number shall include the plural and vice versa. References to an entity refer to the legal successors of such entity, and to the board of directors, officers, or other officials of such entity where appropriate.

Section 2.03: References. For the avoidance of doubt, any reference in this Rate Order to a document shall mean such document and all exhibits thereto, as amended or supplemented from time to time.

### ARTICLE III

#### FEES AND RATES

Section 3.01: Pumpage Fee.

(a) *General.* Each Participant shall pay a Pumpage Fee of \$2.64 per 1,000 gallons of groundwater pumped from its Wells during each whole or partial calendar month, beginning on the later of the Effective Date or the Payment Commencement Date stated in such Participant's GRP Contract. Such pumpage of groundwater shall be metered by Participant in accordance with Article VIII hereof and reported to the Authority in accordance with Article IV hereof. Payment of the Pumpage Fee shall be remitted to the Authority in accordance with Article V hereof.

(b) *Exception.* Notwithstanding paragraph (a) above, no Pumpage Fee shall be due with respect to Wells acquired by Participant that is a municipality if such Wells were formerly owned or operated by a conservation and reclamation district or entity that functioned under a groundwater reduction plan separate from the GRP, and such Participant has notified the Authority in writing that the Wells owned or operated by the district or entity will remain part of the groundwater reduction plan that is separate from the GRP. If a Participant is exempt, in whole or in part, from paying a Pumpage Fee pursuant to the above, then Participant shall submit a statement describing with reasonable detail the basis on such exemption in place of, or along with, payment to the Authority under Article V hereof.

Section 3.02: Import Fee.

(a) *General.* Each Participant shall pay an Import Fee of \$2.64 per 1,000 gallons of water imported by Participant from any person or entity, during each whole or partial calendar month, beginning on the later of the Effective Date or the Payment Commencement Date stated in such Participant's GRP Contract. Such importation of water shall be metered by Participant as in accordance with Article VIII hereof and reported to the Authority in accordance with Article IV hereof. Payment of the Import Fee shall be remitted to the Authority in accordance with Article V hereof.

- (b) *Exceptions.* Notwithstanding paragraph (b) above, no Import Fee shall be due if –
- (1) such imported water was supplied to a Participant from another Participant;
  - (2) such imported water was derived from the re-use of water (from any source) or wastewater effluent;
  - (3) such imported water was derived from water withdrawn from an AWS Well;
- or
- (4) such importation is necessary due to an emergency impacting the ability of Participant to meet its water demands, the period of importation lasts for less than fifteen (15) consecutive days, and Participant has not imported water during more than thirty (30) days during the current calendar year.

If a Participant is exempt, in whole or in part, from paying an Import Fee pursuant to the above, then Participant shall submit a statement describing with reasonable detail the basis for the exemption along with, or in place of, payment to the Authority under Article V hereof.

Section 3.03: Surface Water Fee. Each Converted Participant shall pay a Surface Water Fee of \$2.83 per 1,000 gallons of Surface Water delivered by and through the Project to the Converted Participant's Receiving Facilities during each whole or partial calendar month, beginning on the later of the Effective Date or the Conversion Date. Such delivery of Surface Water shall be metered at the Point(s) of Delivery by Authority in accordance with Article VIII hereof and reported to the Converted Participant in accordance with Article IV hereof. Payment of the Surface Water Fee shall be remitted to the Authority in accordance with Article V hereof.

## ARTICLE IV

### REPORTING

Section 4.01: Self-Reporting.

(a) *Measurement of Groundwater.* Each Participant shall be responsible for measuring the amount of groundwater pumped from each of its Wells and/or AWS Wells by reading the Participant Meters on the Payment Commencement Date and on the first day of every month thereafter.

(b) *Measurement of Imported Water.* Each Participant shall be responsible for measuring the amount of water imported from any non-Participant by reading the Participant Meters on the Payment Commencement Date and on the first day of every month thereafter. A Participant shall not be responsible for measuring the amount of water imported from another Participant.

(c) *Measurement of Surface Water.* The Authority shall be responsible for measuring the amount of Surface Water supplied to each Converted Participant by reading the Authority Meters on the Conversion Date and on the first day of every month thereafter. Such reading shall generally be conducted remotely but from time to time may be conducted by direct reading by the Authority or its agents.

(d) *Other Measurement.* In order to monitor Participant water demands, the GRP Administrator may implement reasonable procedures to directly or indirectly measure (1) water imported from another Participant, and (2) water demands met by a Participant with water derived from the re-use of water (from any source) or wastewater effluent. Such procedures shall not require the installation of meters unless such installation is at the cost and expense of the Authority.

(e) *Reporting.* Water usage measured by the Participant (even if zero) shall be reported to the Authority by submitting readings through ORS or, if applicable, by submitting readings on a completed reporting form provided by the Authority. Reports must be received by the Authority on or before the 10th day of the first calendar month for which water usage is required to be measured incurred (e.g., water usage measured during September, 2018, must be reported by October 10, 2018, and payment of any associated Fees will be due on November 18, 2018; water usage measured during October, 2018, must be reported by November 10, 2018, and payment of any associated Fees will be due on December 18, 2018; etc.). Surface Water usage measured by the Authority Meters shall be made available by the Authority to the Converted Participant through ORS. The GRP Administrator may provide a form to be submitted to the Authority in writing to supplement reporting through ORS with respect to any category of water usage that is not then supported through the ORS reporting system. In addition, the GRP Administrator will provide a form that may be submitted to the Authority in writing to report usage as an alternative to reporting same through ORS but only upon the request of Participant.

Section 4.02: Failure to Report. In the event a Participant fails or refuses to read its Participant Meters, the Authority shall have the right, but not the obligation, to read the Participant Meters. In the event that a Participant fails or refuses to read its Participant Meters on the Payment Commencement Date, the Authority shall have the right to read the Participant Meters on two or more occasions in order to calculate Participant's average daily usage and, based upon such calculation of average daily usage, to estimate the reading of the Participant Meters as of the Payment Commencement Date. If the Authority is required to read the Participant Meters, such Participant will be charged an inspection fee of \$250, and any Fees due under Article III hereof shall be calculated based upon the Authority's readings or average daily usage, if necessary, regardless of when the Authority reads the Participant Meters.

Section 4.03: Direct Reading. As provided in the GRP Contracts, the Authority may, by amendment, revision or restatement of this Rate Order, modify or repeal self-reporting procedures applicable to the Participant Meters and require readings by the Authority or its agents.

## ARTICLE V

### PAYMENT OF FEES

Section 5.01: Payment of Fees.

(a) *ORS Reporting.* Once all Participant Meter readings have been entered into ORS pursuant to Section 4.01 hereof, each Participant shall print its statement of Fees from the ORS and deliver the statement to the Authority with full payment, on or before the due date specified in Section 5.03 hereof.

(b) *Form Reporting.* If a Participant does not report through ORS, or must supplement reporting through ORS, then such Participant shall calculate Fees due the Authority for a given calendar month on the form provided by the GRP Administrator and deliver the completed form to the Authority with full payment, on or before the due date specified in Section 5.03 hereof.

Section 5.02: Manner and Method of Payment.

(a) All Fees due the Authority under Sections 5.01 hereof, and any other fees, rates or charges payable to the Authority under this Rate Order, shall be paid in money which is legal tender in the United States of America. Payments will be accepted only by check or money order made payable to the "San Jacinto River Authority", or by wire transfer according to written wiring instructions provided by the Authority. No cash will be accepted. Written wire instructions are available upon request.

(b) For purposes of submitting payments, ORS fee statements, reporting forms, or other documents pursuant to this Rate Order, the address of the Authority shall be as set forth below.

San Jacinto River Authority  
Attn: GRP Administrator  
GRP Division  
P.O. Box 329  
Conroe, TX 77305

Section 5.03: Due Date. A ORS fee statement or a completed reporting form, and payment of all Fees due under Article III hereof, must be received by the Authority on or before the 18th day of the second calendar month following the whole or partial calendar month for during which such Fees were incurred (e.g., water usage measured during September, 2018, must be reported by October 10, 2018, and payment of any associated Fees will be due on November 18, 2018; water usage measured during October, 2018, must be reported by November 10, 2018, and payment of any associated Fees will be due on December 18, 2018; etc.).

Section 5.04: Self-Remission. Each Participant shall be responsible for remitting payment to the Authority for Fees on or before the due date specified under Section 5.03 hereof. The Authority will not and shall not be obligated to send an invoice or bill to a Participant for Fees unless the Authority, except to the extent that the Authority reads the Participant Meters under Sections 4.02 or 4.03 hereof. In such case, the Fees and any related charges owed by a Participant hereunder shall be specified in a written invoice promptly delivered to such Participant by the Authority. Such invoice shall specify thereon a due date for payment, which due date shall not be less than ten (10) days after the date of the invoice.

## ARTICLE VI

### CONSERVATION DISTRICT PERMITTING; OTHER INFORMATION

Section 6.01: Applicability of Conservation District Permitting Requirements. The GRP provides that the Authority will reduce groundwater production from the Gulf Coast Aquifer (Chico, Evangeline and Jasper Aquifers) by certain Participants so that, collectively, all Participants achieve and maintain compliance with the Plan. This will be achieved primarily through the Authority's

delivery of Surface Water to the Converted Participants and the consequent reduction in groundwater production from the Wells owned and operated by such Converted Participants. The development of other alternative water supplies (such as groundwater production from AWS Wells and water supplies developed from re-use projects) and the impacts of water conservation may further reduce groundwater production by Participants. Based upon the foregoing, the GRP is a "Joint GRP" as defined in and for all purposes of Phase II(B) of the Plan. The Authority, as administrator of the GRP, and all Participants are subject to the permitting requirements applicable to Joint GRPs under Phase II(B) of the Plan.

Section 6.02: Summary of Permitting Requirements; AWS Wells Excluded. (a) The Conservation District is to provide notice of Well permit renewals to the Authority and to all Participants included in the GRP on an annual basis. Under Phase II(B) of the Plan, the GRP Administrator is obligated to then prepare and provide to the Conservation District, not later than September 1, a schedule (the "Production Schedule") of the amount of groundwater each Participant will be authorized to produce from its Well(s) during the following calendar year. The Production Schedule must demonstrate that the Participants, collectively, will achieve the Initial Conversion Obligation for the aggregated Total Qualifying Demand of all Participants and otherwise meet the Conservation District's groundwater reduction requirements under the Plan. The Conservation District is to review and take action on the Well renewal permit application(s) and the accompanying Production Schedule in accordance with the Plan and the Conservation District's Rules.

(b) Under Phase II(B) of the Plan, the Authority has no right or obligation to process renewal permits for AWS Wells owned, operated or maintained by Participants. Accordingly, each Participant shall be responsible for securing, renewing, and otherwise maintaining permits for the Participant's AWS Wells.

Section 6.03: Implementation of Permitting Requirements by GRP Administrator.

(a) *Production Schedule.* In order to timely process permit renewals for all Participant Wells included in the GRP, develop the Production Schedule, and otherwise comply with applicable permitting requirements under Phase II(B) of the Plan, the Authority hereby adopts the following procedures.

(1) On an annual basis, the GRP Administrator shall determine, in his or her reasonable discretion, the proposed amount of groundwater each Participant will be authorized to produce from its Well(s) during the following calendar year. In making such determination, the GRP Administrator shall for each Participant (i) estimate the Participant's projected water demands for the following calendar year based upon the Participant's historical water demands and projected water demands, as reflected in the Participant's GRP Contract, and based upon the Participant's actual reported production from its Well(s), and (ii) estimate the sources of supply necessary to meet the Participant's projected water demand for the following calendar year, including but not limited to the Participant's ICO-Adjusted Total Qualifying Demand, Surface Water to be delivered to the Participant, if any, and any other alternative water supplies that may be used to supplement or supplant groundwater production from the Participant's Well(s). To the extent that a Participant's projected water demands exceed the Participant's sources of supply, the GRP Administrator shall allocate additional groundwater production from the Gulf Coast Aquifer made available through the GRP to such Participant.

(2) Not later than July 1, the GRP Administrator shall provide each Participant with written notice of the proposed amount of groundwater each Participant will be authorized

to produce from its Well(s) during the following calendar year. Each Participant shall have the opportunity to submit written comments to same to the GRP Administrator at the address specified in the notice or, if no address is so specified, at the address set forth in Section 5.02(b) hereof. Any comments must be received by the GRP Administrator on or before August 15.

(3) The GRP Administrator shall reasonably consider all comments received from the Participant and, in connection therewith, prepare a final Production Schedule for the GRP and all Participants.

(4) On or before September 1, the GRP Administrator shall submit the final Production Schedule to the Conservation District for review and approval.

(b) *Renewal Filings.* The GRP Administrator shall sign renewal application(s) on behalf of all the Participants and their Wells included in the GRP, and take all other actions necessary to secure the annual renewal of permits for such Wells by the Conservation District. To the extent required by the Conservation District, each Participant shall execute any necessary permit renewal application materials reasonably requested by the GRP Administrator. Unless otherwise extended by the GRP Administrator, such materials shall be provided to the GRP Administrator no later than thirty (30) days following receipt of a written request for same.

(c) *Notice of Renewal.* If not otherwise provided by the Conservation District, the GRP Administrator shall provide each Participant with a copy of the renewed permit(s) for the Participant's Wells within thirty (30) days following receipt of same by the Authority.

Section 6.04: Amendments to Production Schedule and Conservation District Permits; Total Qualifying Demand.

(a) *Request for Amendment of Production Schedule and/or Permit Amount.* A Participant may from time to time submit a written request to the GRP Administrator for an increase, or a decrease, of the annual amount of groundwater authorized to be produced from the Participant's Well(s) under the Production Schedule and/or under the Participant's Conservation District permit(s). The GRP Administrator shall consider the request and approve of same if, after giving effect to such request, the GRP Administrator determines that the Participants will achieve the Initial Conversation Obligation for the aggregate Total Qualifying Demand of all Participants. If the request is approved, the GRP Administrator shall notify the Participant in writing and prepare an amendment to the Production Schedule to reflect the approved request. Further, the GRP Administrator shall file and prosecute an application with the Conservation District to reflect the approved request, as and if required by the Conservation District. Each Participant shall execute any necessary amendment application materials reasonably requested by the GRP Administrator to file and prosecute such an amendment. Unless otherwise extended by the GRP Administrator, such materials shall be provided to the GRP Administrator no later than thirty (30) days following receipt of a written request for same. If the request is denied or conditioned, the GRP Administrator shall notify the Participant in writing of the reasons therefor.

(b) *Approval of Production Schedule and/or Permit Amendment by Conservation District.* The GRP Administrator shall provide the Participant requesting an amendment to the Production Schedule with written notice of the approval or denial of such request within thirty (30) calendar days thereafter. Notice of approval of a request shall be accompanied by a revised Production Schedule reflecting approved request. Further, if a permit amendment must be approved by the Conservation

District to reflect an amendment pursuant to subsection (a), above, the GRP Administrator shall notify the Participant of same within thirty (30) calendar days of approval by the Conservation District and provide the Participant with a copy of the Conservation District approval and the amended permit.

(c) *Adjustment of Permitting Fees.* If a request for a permit increase or decrease is approved pursuant to a request made under subsection (a), above, the GRP Administrator shall issue an invoice or credit to the Participant for associated Conservation District permitting fees in accordance with Section 6.06 hereof.

(d) *Total Qualifying Demand.* In order to ensure that the Total Qualifying Demand of the Participants, collectively, is available for allocation in accordance with the GRP and the Production Schedule, no Participant shall sell, transfer, or otherwise dispose of Total Qualifying Demand without the prior written consent of GRP Administrator, which consent must receive prior approval by the Review Committee and the Authority's Board of Directors.

Section 6.05: Permits Binding; Penalties and Disincentive Fees. (a) Under Phase II(B) of the Plan, the Conservation District's approval of a Participant's Well permit application and the applicable information in the Production Schedule shall be a condition of the renewed permit and shall be binding upon the Authority, as administrator of the GRP, and upon the Participant.

(b) If a Participant produces groundwater from its Well(s) in excess of the total authorized production reflected under the Conservation District permit for the Well(s), the Participant shall pay the Authority for any Conservation District disincentive fees or penalties assessed against the GRP as a result. The GRP Administrator shall provide a written invoice to the Participant for any disincentive fees or penalties due hereunder. Such invoice shall specify thereon a due date for payment, which due date shall not be less than ten (10) days from the date of the invoice. All disincentive fees or penalties invoiced hereunder shall be in addition to, and not in substitution for, any other Fees or amounts owed the Authority.

Section 6.06: Pass-Through of Permitting Fees. (a) Under Phase II(B) of the Plan, the Authority is responsible for payment of all Conservation District permitting fees (including, but not limited to, water use fees, groundwater transport fees, and administrative fees) associated with all Participant Well permits in the GRP. Accordingly, the GRP Administrator shall pass-through such fees to the Participants by providing a written invoice to each Participant, on a quarterly basis, for Conservation District permitting fees due in respect of the Participant's Well permit(s). Such invoice shall specify thereon a due date for payment, which due date shall not be less than sixty (60) calendar days from the date of the invoice.

(b) If a request for an increase of the annual amount of groundwater authorized to be produced from a Participant's Well(s) is approved pursuant to Section 6.04 hereof, the GRP Administrator shall pass-through any resulting Conservation District permitting fees to the Participant by providing a written invoice for same to the Participant. Such invoice shall specify thereon a due date for payment, which due date shall not be less than sixty (60) days from the date of the invoice, or the date that is ten (10) calendar days before payment is due from the Authority to the Conservation District, whichever occurs first in time. As an alternative to the foregoing, at the option and discretion of the GRP Administrator, the GRP Administrator may add any such Conservation District permitting fees to the next ensuing quarterly invoice provided to the Participant under subsection (a), above.

(c) If a request for a decrease of the annual amount of groundwater authorized to be produced from a Participant's Well(s) is approved pursuant to Section 6.04 hereof, the GRP Administrator may pass-through a credit for Conservation District fees paid or due with respect to the reduction, subject to the ability of the GRP Administrator to allocate the reduction in pumpage to other Participants requesting an increase in pumpage and to collect additional permitting fees from such other Participants to pass-through the credit. As and if approved, such credit shall be due from and paid by the Authority within sixty (60) days from the date of receipt of such credit from the Conservation District. As an alternative to foregoing, at the option and discretion of the GRP Administrator, the GRP Administrator may apply any such Conservation District credit to the next ensuing quarterly invoice provided to the Participant under subsection (a), above.

(d) In the event that the amount of groundwater actually produced from the Participants' Wells in a given year is less than the annual amount of groundwater projected to be produced from the Participants' Wells in such year, as shown on the current Production Schedule for such year, the GRP Administrator shall file an application with the Conservation District for a credit of permit fees paid by the GRP. Any credit approved by the Conservation District shall be passed through to the Participants on a pro-rata basis (based on amount of under production) and shall be applied to the next ensuing quarterly invoice provided to the Participant under subsection (a), above; provided, however, a Participant must have actually produced 75% or more of the groundwater authorized to be produced in such year in order to be eligible to receive such credit unless such requirement is waived by the GRP Administrator in his or her sole discretion.

Section 6.07: Notice of Permit Filings. A Participant shall provide the GRP Administrator with a copy of any permit application filed with the Conservation District within ten (10) business days after filing, but only if such filing (1) requests a permit for the installation of a new Well or AWS Well, (2) relates to the removal, abandonment or closure of an existing Well or AWS Well, (3) requests an increase or decrease in annual groundwater pumpage, or (4) relates to the transfer, assignment or termination of a Conservation District permit held by Participant.

Section 6.08: Other Documents or Information. A Participant shall provide the GRP Administrator with copies of documents or other reasonably available or ascertainable information, data or materials date that, as determined by GRP Administrator, is necessary in connection with the implementation of the GRP. Unless otherwise extended by the GRP Administrator, such documents, information, data or materials shall be submitted to the GRP Administrator no later than thirty (30) days following receipt of a written request for same.

## ARTICLE VII

### LATE FEES; INTEREST CHARGES; COLLECTIONS

Section 7.01: Late Fees. Fees due under Article III hereof shall be increased by 5% if not paid on or before the due date specified under Section 5.03 hereof. Amounts due under Article VI hereof shall be increased by 5% if not paid on or before the due date specified on an invoice therefor. Any other amounts due under this Rate Order shall be increased by 5% if not paid on or before the due date specified on an invoice therefor.

Section 7.02: Interest Charges. Overdue amounts (including applicable late fees) shall accrue interest at 12% per annum (i.e., 1% per month) for each whole or partial calendar month such payment is past due.

Section 7.03: Invoice for Late Fees and Interest Charges. The Authority will provide a written invoice to a Participant for any late fees or interest charges due under Section 7.01 and/or 7.02 hereof. Such invoice shall specify thereon a due date for payment, which due date shall not be less than ten (10) days from the date of the invoice.

Section 7.04: Collection Costs. If the Authority is required to incur costs to collect an overdue account, all such costs, including reasonable attorney's fees, court costs and expenses, shall be paid by the delinquent Participant, and the Authority shall be entitled to collect such costs in any suit for collection of a delinquent account.

## ARTICLE VIII

### METERING AND CALIBRATION

Section 8.01: Maintenance and Testing of Meters. The provisions of Section 5.03 of the GRP Contracts, relative to the maintenance, testing and calibration of Participant Meters and Authority Meters, are incorporated herein for all purposes. The provisions of Section 5.05 of the GRP Contracts, relative to the resolution of disputes concerning tests of Participant Meters and/or Authority Meters, are incorporated herein for all purposes.

In the event that Participant fails or refuses to test and calibrate the Participant Meters in accordance with such provisions of the GRP Contracts, the Authority shall have the right, but not the obligation, to test and calibrate the Participant Meters. If the Authority so tests and calibrates the Participant Meters, such Participant will be charged a fee of \$250 plus the Authority's actual and direct expenses for such testing and calibration. Such fee shall be specified in a written invoice promptly delivered to such Participant by the Authority, and the invoice shall specify thereon a due date for payment, which due date shall be less than then (10) days after the date of the invoice.

Section 8.02: Audits. The Authority shall have the right to audit the readings from Participant Meters by examining the books and records of a Participant, reading such Participant Meters, or by any other means and methods prescribed by the Authority.

Section 8.03: Right to Enter Land. The Authority and its representatives shall have the right to enter upon the land of a Participant, at any reasonable time in order to audit the readings of the Participant Meters, to read Participant Meters in the event a Participant has failed or refused to do so, to directly read any Authority Meters, or to perform testing and calibration of the Participant Meters in the event Participant has failed or refused to do so.

Section 8.04: Adjustments. The provisions of Section 5.04 of the GRP Contract, relative to the adjustment of pumpage measured by inaccurate Participant Meters and/or Authority Meters, are incorporated herein for all purposes.

## ARTICLE IX

### CONVERSION TO SURFACE WATER

Section 9.01: Terms of Service. Surface Water shall be provided by the Authority and received and used by a Converted Participant in accordance with the terms and conditions set forth in the GRP Contract. Without limiting the foregoing, the Authority specifically incorporates by reference the following provisions of the GRP Contracts: Section 4.09 (Contract Quantity, relating to force majeure, penalties for failure to take the Contract Quantity, and use of groundwater wells and other sources of supply to meet demands); Section 4.10 (Warranties Regarding Water); Section 4.12 (Passing of Title to Water; Re-use); Section 10.02 (Delivery Limitations); and Section 12.03 (Continuation of Service).

Section 9.02: Failure to Take Contract Quantity. If a Participant fails or refuses to timely connect to the Project in accordance with Section 4.07 of the GRP Contracts, or if a Converted Participant has connected to the Project and fails or refuses to at least take the Contract Quantity designated by the GRP Administrator, the GRP Administrator may impose penalties under Section 11.03 hereof.

## ARTICLE X

### DROUGHT CONTINGENCY AND WATER CONSERVATION

Section 10.01: Updating and Submittal of Plans. In accordance with Section 3.05 of the GRP Contracts, all Participants must adopt and enforce a water conservation plan (see 30 T.A.C. §§ 288.1-288.7), as well as a drought contingency plan (see 30 T.A.C. §§ 288.20-288.22), that meets the minimum requirements adopted by the Authority under the GRP Water Conservation Plan and the GRP Drought Contingency Plan. Unless otherwise extended by the GRP Administrator, such plans shall be submitted to the GRP Administrator no later than thirty (30) days following receipt of a written request for same.

Section 10.02: Drought Management Surcharge. The goal of the GRP Drought Contingency Plan is to reduce the total water demand of all Participants by targeted percentages in response to various stages of drought or due to emergency conditions. Accordingly, the GRP Administrator may impose a surcharge on water usage to enforce the GRP Drought Contingency Plan during any whole or partial calendar month in which Stages 2 through 4 of the GRP Drought Contingency Plan has been triggered, or during any Emergency Water Supply Condition under the GRP Drought Contingency Plan. The surcharge on Fees shall only apply to the extent that Participant's actual water usage (as determined by the Authority based upon reporting information submitted pursuant to Article IV hereof) exceeds targeted water usage (as calculated pursuant to Section 3.6 of Drought Contingency Plan and reduced by the applicable percentage). The surcharge on Fees shall be calculated based upon the maximum civil penalty rate that may be imposed by the Conservation District on Large Volume Groundwater Users that are not part of a GRP under the Plan (currently \$4.00 per 1,000, which is subject to increase hereafter) unless a lesser rate is determined to be sufficient to achieve compliance by the GRP Administrator. The surcharge shall be in addition to any other Fees or other amounts due to the Authority.

## ARTICLE XI

### PENALTIES; RECOVERY; VIOLATION OF RATE ORDER

#### Section 11.01: Generally Applicable Penalties.

(a) *Reporting.* A Participant shall be subject to penalties for failure or refusal to report water usage to the Authority in accordance with Section 4.01 hereof.

(b) *Calibration.* A Participant shall be subject to penalties for failure or refusal to timely calibrate its Participant Meters in accordance with Section 8.01 hereof and/or the GRP Contracts.

(c) *Access to Meters.* A Participant shall be subject to penalties for failure or refusal to provide timely access to any Participant Meters or Authority Meters in accordance with Section 8.03 hereof and/or the GRP Contracts.

(d) *Documents.* A Participant shall be subject to penalties for failure or refusal to timely provide the GRP Administrator with documents, information, data or materials requested under this Rate Order.

(e) *Water Conservation and Drought Contingency Plans.* A Participant shall be subject to penalties for failure or refusal to –

(1) timely submit the Participant's water conservation plan or drought contingency plan to the Authority in accordance with Section 10.01 hereof and/or the GRP Contracts;

(2) include provisions in the Participant's water conservation plan or drought contingency plan that meet minimum criteria established by the Authority in accordance with the GRP Contract; or

(3) implement or enforce the Participant's water conservation plan or drought contingency plan.

(f) *Bond Sale Documents.* If the Authority provides Participant with a written request that certain documentation be executed and returned to the Authority pursuant to Section 8.02 and/or Section 8.03 of the GRP Contracts, then Participant shall be subject to penalties when –

(1) the written request was delivered to Participant in accordance with the notice provisions of Section 13.03 of the GRP Contracts;

(2) the documentation was provided simultaneously with the written request; and

(3) the Participant does not execute and return the documentation to the Authority on or before the later of (i) the deadline specified in the written request, or (ii) the 30th day following receipt of the written request by Participant.

Section 11.02: Imposition of Penalty; Penalty Amount. The GRP Administrator shall be authorized to impose a penalty if permitted under Section 11.01 hereof or any other provision of this Rate Order. The penalty amount shall be determined at the discretion of the GRP Administrator, taking

into consideration the relative water demands of such Participant compared to the demands of all Participants; provided, however, the penalty shall not exceed \$2,500 per day per violation.

Section 11.03: Additional Penalties Related to Conversion to Surface Water.

(a) *Connection to Project.* A Participant shall be subject to penalties for failure or refusal to timely connect to the Project as and if required under Section 4.04 of the GRP Contract.

(b) *Contract Quantity.* A Converted Participant shall be subject to penalties for failure or refusal to at least take the applicable Contract Quantity of Surface Water from the Project on a monthly basis.

(c) *Imposition of Penalty; Penalty Amount.* The GRP Administrator shall be authorized to impose a penalty if permitted under subsection (a) or (b), above. The penalty amount shall be determined on a monthly or other periodic basis by multiplying the Contract Quantity of Surface Water that was not taken from the Project (whether through a failure to connect to the Project under subsection (a) or as a result of a failure to at least take the Contract Quantity) by the maximum civil penalty rate that may be imposed by the Conservation District on Large Volume Groundwater Users that are not part of a GRP under the Plan (currently \$4.00 per 1,000, which is subject to increase hereafter) unless a lesser rate is determined to be sufficient to achieve compliance by the GRP Administrator.

Section 11.04: Invoice for Penalties. The GRP Administrator shall provide a written invoice to the Participant for any penalty imposed under this Article. Such invoice shall specify thereon a due date for payment, which due date shall not be less than ten (10) days from the date of the invoice. All penalties imposed under this Article shall be in addition to, and not in substitution for, any other Fees or amounts owed the Authority.

Section 11.05: Appeal of Penalty. A Participant that has been invoiced a penalty under this Article may appeal the penalty to the GRP Administrator. The final decision of the GRP Administrator shall be subject to further review by the Board of Directors of the Authority as specified in Section 9.03(f) of the GRP Contracts.

Section 11.06: Recovery. In addition to the payment of any Fees, penalties, surcharges or other amounts under this Rate Order, the Authority has and reserves the right under Section 4.11 of the GRP Contracts the right to recover from a Participant by any lawful means, including intervention in legal proceedings of a Participant, for any losses, damages, claims, expenses, costs, or judgments, including reasonable attorneys fees and court costs incurred by the Authority, and interest not to exceed the interest rate permitted by Section 2251.025, Texas Government Code, as amended.

Section 11.07: Violation of Rate Order. The adoption of this Rate Order is authorized by the Addenda and by the GRP Contracts and, therefore, any violation of this Rate Order shall be deemed a breach of such contracts. This Rate Order is also intended to set forth, in part, the rules and regulations of the Authority applicable to the GRP and the Project. The Authority is authorized to adopt rules and regulations under Section 10f of the Act and, therefore, any violation of this Rate Order shall be deemed a violation of such rules and regulations. The Authority may exercise any remedy specified under the Addenda or the GRP Contracts, or otherwise available in law or equity to the Authority, where a violation of this Rate Order occurs or is threatened to occur. The right to exercise any such remedy under the Addenda or the GRP Contracts shall not be deemed to be waived by the exercise of any

remedies specified herein, specifically including but not limited to the imposition of penalties, which remedies shall be cumulative.

## ARTICLE XII

### MISCELLANEOUS

Section 12.01: Conflict with Addenda or GRP Contracts. In the event that any provision of this Rate Order is in conflict with any provision of the Addenda or the GRP Contracts, the terms and provisions of this Rate Order shall control unless the Addenda or GRP Contracts specifically provide otherwise.

Section 12.02: Future Amendments. As determined necessary by the Authority, the Authority reserves the right to amend from time to time: (1) the rates, charges and fees contained in this Rate Order; and (2) any other terms and provisions of this Rate Order.

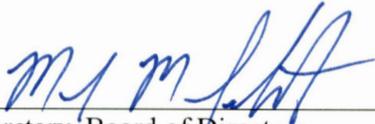
[SIGNATURES COMMENCE ON FOLLOWING PAGE]

PASSED AND APPROVED on May 24, 2018.



\_\_\_\_\_  
President, Board of Directors

ATTEST:



\_\_\_\_\_  
Secretary, Board of Directors

(SEAL)



CERTIFICATE

THE STATE OF TEXAS           §  
  §  
COUNTY OF MONTGOMERY     §

I, the undersigned General Manager of the San Jacinto River Authority (the "Authority"), hereby certify as follows:

1. That I am the duly qualified and acting General Manager of the Authority, and that as such, I have custody of the minutes and records of the Authority.

2. That the Board of Directors of the Authority convened in Regular Session on May 24, 2018, at the regular meeting place thereof, and the roll was called of the duly constituted officers and members of the Board of Directors, to-wit:

Lloyd B. Tisdale	President
Fredrick D. Koetting	Vice President
Mark Micheletti	Secretary
James C. Alexander	Assistant Secretary
Ronald W. Anderson	Treasurer
Charles Boulware	Director
Kaaren Cambio	Director

and all of said persons were present, except Director(s) Koetting and Cambio, thus constituting a quorum, whereupon, among other business, the following was transacted at such meeting: a written

RATE ORDER

(GRP PARTICIPANTS)

Order No. 2018-0-01

was duly introduced for the consideration of the Board of Directors. It was then duly moved and seconded that such Order be adopted and, after due discussion, such motion, carrying with it the adoption of such Order, prevailed and carried by the following vote:

AYES: 5  
NOES: 0

3. That a true and correct copy of such Order adopted at such meeting is attached to and follows this certificate; that such Order has been duly recorded in the minutes of the Board of Directors for such meeting; that the persons named in the above and foregoing Paragraph 2. were the duly chosen, qualified and acting officers and members of the Board of Directors as indicated therein, that each was duly and sufficiently notified officially and personally, in advance, of the time, place and purpose of

such meeting, and that such Order would be introduced and considered for adoption at such meeting, and that each consented in advance, to the holding of such meeting for such purpose; that the canvassing of the officers and members of the Board of Directors present at and absent from such meeting and of the votes of each on such motion, as set forth in the above and foregoing Paragraph 2., is true and correct; that such meeting was open to the public as required by law; and that sufficient and timely notice of the hour, date, place and subject of such meeting was given and posted as required by Chapter 551, Texas Government Code, as amended.

SIGNED AND SEALED the 24<sup>th</sup> day of May, 2018.

  
\_\_\_\_\_  
General Manager

(SEAL)



# **Exhibit B**

RESOLUTION NO. 2018-R-09

**A RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN JACINTO RIVER AUTHORITY AUTHORIZING PARTICIPATION IN SAN JACINTO RIVER REGIONAL WATERSHED STUDY AND THE EXECUTION OF AGREEMENTS IN CONNECTION THEREWITH**

**WHEREAS**, the San Jacinto River Authority ("SJRA" or "Authority") has coordinated with regional governmental entities, including Montgomery County, Harris County, and the City of Houston (the "City"), regarding a proposed regional flood protection planning study known as the San Jacinto River Regional Watershed Study (the "Project"); and

**WHEREAS**, Harris County, acting by and through the Harris County Flood Control District ("HCFCD"), has submitted an application (the "Grant Application") to the Texas Department of Emergency Management ("TDEM") pursuant to TDEM's Hazard Mitigation Grant Program for grant funding to undertake the Project, a copy of the Grant Application being attached hereto as **Exhibit A**; and

**WHEREAS**, the Project will improve the flood management capabilities of the Authority and other regional governmental entities, in that the scope of the Project will include, among other things, (i) review of existing studies, plans, modeling, data, and information, (ii) development of additional survey and sedimentation data, (iii) development of updated hydrologic and hydraulic models, (iv) identification and evaluation of flood mitigation measures, (v) suggestions for vegetation and sediment maintenance, (vi) opportunities for expansion of flood warning systems, (vii) flood response planning, (viii) community outreach and education; and

**WHEREAS**, the Authority wishes to participate with the District and other regional governmental entities in the Project, and to contribute funds towards the Project, if, as and when the Grant Application is approved by TDEM;

**NOW THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE SAN JACINTO RIVER AUTHORITY THAT:**

Section 1: The Board of Directors of the Authority hereby finds and declares that the Project will be necessary and beneficial to the citizens of the upper San Jacinto River watershed, that the Authority is eligible and willing to participate in the Project, and that the Authority shall contribute funds towards the Project, if, as and when the Grant Application is approved by TDEM, as set forth hereinafter.

Section 2: The Board of Directors authorizes the General Manager to negotiate and enter into one or more agreements with Montgomery County, Harris County and/or HCFCD, and/or the City, to participate in the Project. The Board of Directors further authorizes the General Manager, under such agreement(s), to commit the Authority to contribute up to twenty percent (20%) of the local cost share set forth in the Grant Application and required by the terms and conditions of the TDEM grant, not to exceed a total of \$125,000.00.

Section 3: The Board of Directors authorizes the General Manager to amend the Lake Conroe Division annual budget to provide funding for study participation, as required, but subject to the expenditure limit set forth in Section 2 hereof.

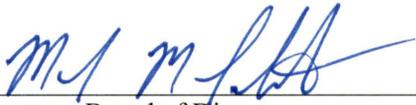
Section 4: The Board of Directors authorizes the General Manager to utilize funds from the financial reserves of the Lake Conroe Division to provide funding for study participation, as required, but subject to the expenditure limit set forth in Section 2 hereof.

Section 5: This Resolution is intended to supersede Resolution No. 2018-R-04, approved and adopted by the Board of Directors on January 25, 2018. Resolution No. 2018-R-04 shall be rescinded, and shall be of no further force and effect, immediately upon the approval and adoption of this Resolution.

**APPROVED AND ADOPTED** by the Board of Directors of the San Jacinto River Authority, at a regular meeting on the 24<sup>th</sup> day of May, 2018.

**ATTEST:**

**SAN JACINTO RIVER AUTHORITY**



Secretary, Board of Directors



President, Board of Directors

(SEAL)



## EXHIBIT "A"



# Texas Division of Emergency Management Recovery, Mitigation and Standards

## Section 404 Hazard Mitigation Grant Program (HMGP) Application Introduction, Instruction, and Information

### **INTRODUCTION**

The Hazard Mitigation Grant Program (HMGP) assists states and local communities in implementing long-term hazard mitigation measures following a major disaster. The funding for this program is based on a 75% federal and 25% local cost share. Further information concerning Texas' involvement in the HMGP can be found in the current Texas Division of Emergency Management (TDEM) Hazard Mitigation Grant Administrative Plan.

If you require technical assistance with this application, or to request a copy of the current TDEM Hazard Mitigation Grant Program Administrative Plan please contact Texas Division of Emergency Management, Recovery, Mitigation and Standards (TDEM/RMS), Mitigation Section at (512) 377-0023 or [TDEM-Mitigation@dps.texas.gov](mailto:TDEM-Mitigation@dps.texas.gov).

### **INSTRUCTIONS**

The application and attachments can be found on the following websites:

<http://www.dps.texas.gov/dem/ThreatAwareness/hurricaneHarveyInfo.htm>

<https://grants.dps.texas.gov/>

Please complete ALL sections and provide the documents requested. All questions must be answered completely and accurately. TDEM and the Federal Emergency Management Administration (FEMA) staff reviewing the application will not be familiar with your community, the specific project area, and the need for the proposed project. Therefore, it is the responsibility of the applicants to ensure the application addresses all of the questions and requirements. This is particularly important given the competitive nature of the grant program. If you are unsure as to the meaning of a particular question, contact TDEM for clarification.

### **ELIGIBILITY**

TDEM, as the grantee, is responsible for ensuring applicants meet the eligibility requirements and projects are eligible for HMGP funding.

#### **Applicant Eligibility:**

1. HMGP projects must be from an eligible applicant. (i.e., Municipality, City, County, Special District, Tribe, Eligible Nonprofit Agency, or Organization).
2. Applicant must have an approved hazard mitigation plan. For private non-profit organizations, the community where the project is located must have an adopted plan.

#### **Project Eligibility:**

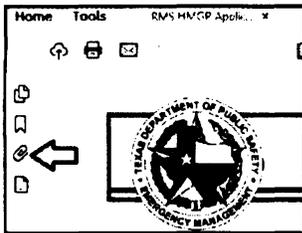
1. Projects cannot be retroactively funded through HMGP. Therefore, projects already in progress or completed will not be considered.
2. HMGP projects must comply with the FEMA approved state and applicable local hazard mitigation plan.
3. HMGP projects must meet all applicable codes and standards for the project locale (i.e., construction, public notifications, etc.).
4. HMGP projects must have a direct beneficial impact upon the designated disaster area, whether or not the project is located in the designated area.
5. HMGP projects must comply with 44 Code of Federal Regulations (CFR) part 9, Floodplain Management and Protection of Wetlands and 44 CFR, part 10, Environmental Considerations.
6. HMGP projects must solve a problem independently or constitute a functional portion of a solution where there is assurance that the project as a whole will be completed. Projects that merely identify or analyze hazards or problems are not eligible.

## Project Eligibility - Continued

7. HMGP projects must be cost effective and substantially reduce the risk of future damage, hardship, loss, or suffering resulting from a major disaster.
8. HMGP projects must provide the best solution. Sub-applicants must demonstrate that after consideration of a range of options for the mitigation measure, it has been determined that the proposed project is the most practical, effective, and environmentally sound solution.
9. HMGP projects must contribute to a long-term solution that is the most practicable. Ideally, it should integrate hazard mitigation principles with existing programs and overall community planning.
10. HMGP projects must consider long-term effects. Projects should address, when applicable, long-term changes to the areas and entities it protects, and ensure manageable future maintenance and modification requirements.
11. HMGP projects must address a problem that has been repetitive or that possesses a significant risk if left unsolved.
12. HMGP projects must cost less than the anticipated value of the reduction in both direct damage and subsequent negative impacts to the area if future disasters occur.

## ATTACHMENTS

Below are the attachments related to this application. You can access the attachments by clicking the paper clip symbol on the left side of the form (see image below).



## Attachment List

1. Budget Worksheet
2. Budget Worksheet Instructions
3. Designation of Subrecipient Agent (DSA) Form (Note: See Grant Management System for additional information below)
4. Environmental Historical Preservation (EHP) Checklist
5. FEMA Benefit Cost Analysis (BCA) Toolkit Instructions to Install
6. Property Site Inventory Worksheet (Required for Acquisition, Elevation, and Mitigation Reconstruction projects)
7. Three SF424 Forms (SF424-Application for Federal Assistance, SF424B-Non-Construction Assurances and SF424D-Construction Assurances)

## REQUIRED DOCUMENTATION

Below is the minimum required documentation that must be submitted with the application.

Note: This is not an all inclusive list since requirements may vary depending on project type and the sub-applicant.

1. Application (with supporting documents used for additional space or to clarify answers)
2. Map(s), Photo(s), Drawing(s), etc. as required in the application
3. EHP Checklist
4. FEMA Insurance Rate Map (FIRM) per the EHP Checklist
5. Supporting Documentation per EHP Checklist
6. Budget Worksheet
7. Property Site Inventory Worksheet (Required for Acquisition, Elevation and Mitigation Reconstruction projects)
8. BCA zip file
9. Certification and Signature of Authorized Agent (page 10 of the application)
10. Floodplain Manager Authorization Form (page 11 of the application)
11. DSA Form
12. All three SF424 forms (SF424, SF424B and SF424D)

## GRANT MANAGEMENT SYSTEM (GMS)

The Division of Emergency Management uses the GMS on-line system to manage the HMGP and other FEMA grant programs. For more information and to register for access please visit <https://grants.dps.texas.gov/index.cfm>.

Note: The DSA Form provides the information needed to set up the contact information in the system.



**Texas Division of Emergency Management  
Recovery, Mitigation and Standards**

**Section 404 Hazard Mitigation Grant Program (HMGP)  
Application Form**

**Disaster Declaration #:** FEMA-4332-DR-TX

**Declaration Date:** August 25, 2017

**SUB-APPLICANT INFORMATION**

**Name of Sub-applicant Organization/Agency:** Harris County Flood Control District

**Address:** 9900 Northwest Freeway

**City:** Houston **County:** Harris **State:** TX **Zip:** 77092

**Primary Contact Name:** Dena Green **Title:** Manager, Feasibility Studies Dept.

**Email:** dena.green@hcfcd.org **Office Phone:** (713) 684-4252 **Cell:** \_\_\_\_\_

**Secondary Contact Name:** Matthew Zeve **Title:** Director of Operations

**Email:** matthew.zeve@hcfcd.org **Office Phone:** (713) 684-4055 **Cell:** \_\_\_\_\_

**Check One:**

- State Government     Local Government     Federally Recognized Tribe     Private Non-Profit

**Tax ID #:** 74-6019452 **DUNS #:** DR-174079756 **FIPS Code:** 048201  
(Data Universal Numbering System)

**State Legislative House District(s):** 3, 15, 16, 18, 23, 127 **State Legislative Senate District(s):** 3, 4, 6, 11, 15

**Congressional House District(s):** 2, 8, 18, 29, 36

**National Flood Insurance Program (NFIP) Community Identification #:** 480296, 480297, 480287  
(This number can be obtained from the FIRM map for your area)

**NFIP Community Rating System Class # (if available):** 480296

**PROJECT INFORMATION**

**Project Title:** San Jacinto River Regional Watershed Study

**Application Type: (select from the following)**

- Standard HMGP     5% Initiative     Planning     Phased Project

**Project Type: (select from the following)**

- Acquisition     Elevation     Residential Saferoom     Community Saferoom  
 Drainage     Generator     Wildfire     Structural Retrofit  
 Other: \_\_\_\_\_

**Hazards to be Mitigated: (select from the following)**

- Flood     Wind     Wildfire     Subsidence     Storm Surge  
 Other: \_\_\_\_\_

*Note: A Property Site Inventory Worksheet (see attached) is required for Acquisition, Elevation, and Mitigation Reconstruction projects*

## **SCOPE OF WORK**

### **Project Description:**

*Description must include: what hazard(s) the project will address, type of project (drainage, safe room, fuel reduction, buy-out, etc., and/or infrastructure), step by step description of the major elements of the project (contracting, construction elements, close-out, etc.), and how the project will be accomplished by the end of the 36 month period of performance (PoP). Attach extra pages as necessary.*

The proposed regional study of the San Jacinto River watershed will address flooding and the response to flooding in the San Jacinto River watershed. The watershed covers portions of Harris, Montgomery, Liberty, San Jacinto, Walker, Grimes and Waller counties in eastern Texas, and includes more than 13 major streams including the San Jacinto River, that span more than 500 stream miles. The study area also includes two water supply reservoirs, one at Lake Conroe and one at Lake Houston. The Harris County Flood Control District (HCFCD) will serve as the lead agency for the study. It is anticipated that the San Jacinto River Authority, Montgomery County, and the City of Houston will partner with the HCFCD to conduct the study. Major components of the study include:

**Task 1: Project Management, Coordination and Document Control** - Extensive coordination with multiple study partners and stakeholders will be required through projects meetings, written and verbal correspondence and status reports.

**Task 2: Review and assess existing data, obtain additional data as needed** - Gather, receive, review and analyze existing studies, plans, models GIS data, gage information for the study area, as well as sedimentation data for the San Jacinto River. Perform field visits in addition to desktop assessments and review of gathered data. Obtain additional survey data as needed.

**Task 3: Existing Conditions Hydrologic and Hydraulic Model Development** - develop existing condition hydrologic and hydraulic models that will be used to identify flood risk along the San Jacinto River and its major tributaries.

**Task 4: Analyze Historical Storm Events and Calibrate Models** - Calibration will be performed for the existing condition models developed in Task 3 utilizing precipitation data, gauge records, high water mark data, flood records, and other information based on historical storm events.

**Task 5: Future Conditions Hydrologic and Hydraulic Models** - Update the existing conditions models developed in Task 3 to simulate future conditions within the watershed if no new flood mitigation measures are implemented. Future conditions will be estimated using population growth projections, regional growth/development patterns, drainage criteria adopted by regulatory agencies within the study area, and other available data.

**Task 6: Flood Mitigation Planning** - Identify feasible flood mitigation measures to reduce flood risks within the San Jacinto River watershed. Flood mitigation measures will likely include recommendations for detention, channel conveyance improvements, and buyouts. When selecting the most feasible alternatives, consideration for right-of-way acquisition, cost effectiveness, constructability, environmental constraints, design life, and public benefit will be considered along with other factors. Flood mitigation effectiveness, right-of-way requirements, environmental constraints, utility conflicts, other possible challenges that would impact implementation will be identified as part Task 6.

**Task 7: Vegetation and Sediment Control Plan** - Coordinate with appropriate agencies and to discuss previous vegetation and/or sedimentation evaluations. Research, collect, and review necessary information to develop a maintenance plan to help address sedimentation and vegetative growth along the West Fork of the San Jacinto River.

**Task 8: Flood Warning System** - Coordinate with appropriate agencies to discuss expanding the Harris County Flood Warning System gauge locations in the San Jacinto River watershed and identify locations where additional gauges would be beneficial, and document the steps that must be taken to ensure the gauges can be installed.

**Task 9: Flood Response Planning** - Meet with appropriate agencies responsible for flood response within the study area and discuss existing plans and protocols, and identify potential measures that could be used to improve flood response activities. With input from the responsible agencies, an updated communications plan will be developed to facilitate sharing information between agencies and with the public.

**Task 10: Community Outreach and Education** - Develop educational materials suitable to convey information to the public about the study purpose, findings, recommendations and conclusions.

**Project Objectives - Problem Solutions/Hazard Reduction:**

*Description must include: how the project will independently solve the problem, the level of protection provided by the project, how the project will increase the level of protection to the citizens and/or properties, the number of people and properties that will directly benefit from the project, and how the project will ultimately reduce the costs associated with recovery from future disasters. Attach extra pages as necessary.*

The proposed study will address flood risk throughout the San Jacinto River watershed in several ways:

\* The study will develop a comprehensive set of models for the San Jacinto River and its major tributaries using consistent, cohesive methodology regardless of the county in which those channel are located. This information can be used to establish the existing flood risks along the studied streams and develop important information for communities within the study area to utilize for hazard mitigation planning purposes, as well as planning for future growth within the study area. Information to be developed includes inundation maps for the studied streams that show the extent and depth of riverine floodplains for an array of storm events to be simulated. Additionally, information will be gathered about the number of structures, acres of land, parcels, and miles of roadway are located within the modeled floodplains.

\* The study will evaluate flood mitigation measures to address the flood risks that are identified during the study. For each flood mitigation measure that is identified, an implementation plan will be developed that provides information regarding the order in which projects should be pursued, the amount of additional right-of-way needed to complete the project, critical constraints such as utility or environmental conflicts, and general cost estimates. This information will help communities within the San Jacinto River watershed understand the major components for the recommended mitigation measures so that the necessary planning to complete the projects can be performed.

\* The San Jacinto River watershed spans multiple counties, and multiple jurisdictions, and includes numerous large streams, as well as two water supply reservoirs. Due to the large size of the contributing drainage area, when the San Jacinto River floods, the water can remain at flood stages for prolonged periods and impact the numerous communities along the river. It is essential that emergency responders within the San Jacinto River watershed are able to coordinate with each other and share information in a consistent, constructive manner. As part of the proposed study, a communications protocol and action plan will be developed. This plan should help facilitate a consistent approach across all agencies to locate and protect critical facilities, deploy emergency services, and communicate evacuation routes and shelters to the public.

**Project Objectives - Outcome, Level of Effort and Milestones:**

*Description must include: major milestones for the project (contracting complete, final engineering/design complete, mobilization for construction, construction phase(s), activities associated with these steps, percentage of total project budget or dollar amounts associated with these steps. Attach extra pages as necessary.*

The major tasks, and associated percentage of the total project budget, is as follows:

1. Project management -- 5% of the budget
2. Data collection --- 10% of the budget
3. Existing condition model development --- 20% of the budget
4. Historical storm simulation and calibration --- 6% of the budget
5. Future conditions without flood mitigation measures model development --- 5% of the budget
6. Flood warning system --- 12% of the budget
7. Flood response planning --- 20% of the budget
8. Flood mitigation planning --- 17% of the budget
9. Community outreach and education --- 4% of the budget
10. Preparation of final deliverables --- 1% of the budget

**Milestones/Timeline:**

List the major milestones (e.g. designing, engineering, permitting, etc.) for the project by providing an estimated timeline for the critical activities not to exceed a 36 months. These milestones should correspond with the Project Objective description above and budget. For the Starting Month column below, please enter the month (1 through 24) you will begin this milestone once you receive your award (i.e. Month 1 would be the same month as your performance period start date, Month 36 is the last month of your performance period.) For the Mos. to Complete column, please enter the number of months it will take to complete the milestone. (See examples below)

	Milestone	Starting Month	Est. Mos. to Complete
1.	Project Management and Coordination	Month 1	18 months
2.	Data Collection and Review	Month 1	2 1/2 months
3.	Existing Conditions Model Development	Month 3	3 months
4.	Model Calibration	Month 6	3 months
5.	Future Condition without Flood Mitigation Measures Model Development	Month 9	1 1/2 month
6.	Flood Warning System	Month 4	3 months
7.	Flood Response Planning	Month 6	6 months
8.	Flood Mitigation Planning	Month 11	4 1/2 months
9.	Community Outreach and Education	Month 3	15 months
10.	Final Deliverable	Month 14	4 months

**Project Objectives - Project Staff and Management:**

*Description must include: how the sub-applicant will organize and manage the project to ensure successful completion within the project period of performance, a brief description of all staff associated with the project by position and what their role and responsibilities are for completing the project within the period of performance. Attach extra pages as necessary.*

The HCFCD will be supported by a team of consultants in order to complete the study. To ensure that high quality of work is performed, and that the study is completed on time, close coordination with the consultants working on the study, as well as with the other study partners (City of Houston, Montgomery County, San Jacinto River Authority) will be conducted. A project manager from the HCFCD will be assigned to work on the study and help support the consultant team. At a minimum, weekly conference calls between the HCFCD project manager and the project manager representing the consultants will be conducted. Monthly progress meetings will be conducted in person - at the progress meetings the consultants will provide an overview of the work that was accomplished since the previous progress meeting, and discuss what they will be working on over the next month. Additionally, briefings with executive management at HCFCD and the other study partners will be conducted during milestones in the study progress.

In addition assigning a dedicated project manager from HCFCD staff to assist with the study, the following staff will also participate:

**Matt Zeve, Director of Operations.** Matt will provide high level guidance to HCFCD staff and consultants carrying out the study. He will serve as the point of contact for the participating agencies (SJRA, COH, Montgomery County, etc.). He will make resources available and re-prioritize other work efforts in order to keep the study on schedule.

**Dena Green, Feasibility Studies Department Manager.** Dena will provide guidance and oversight for the study in general throughout the study process, and provide assistance for the project manager when needed.

**Jonathan Holley, Regulatory Compliance Department Manager.** Jonathan Holley will provide guidance and insight related to environmental regulatory compliance for flood mitigation measures identified during the study.

**Damage History - Overview of Past Damage:**

Provide a detailed past history of damages in the project area including approximate costs. Include information for Residential or Federal level disasters as well as State or local level declarations. Attach any supporting documents. Costs should include damages to structures and infrastructure in the project area as a result of the hazard. Additional costs should include the cost to the local government to respond to victims of the hazard in the project area, any interruption to local businesses, losses of public services, and costs for temporary housing of the affected population, etc. This section helps demonstrate the need for the project.

*Note: Acquisition, Relocation, Elevation, or Demolition Project:*

Complete a listing of specific damages to each property on a separate spreadsheet and include as an attachment.

Date	Level of Event	Type or Extent of Damage	Total Cost of Damage
06/05/01	Tropical Storm Allison	2,881 structures (Harris Cnty)	
10/15/94	October 1994 Flood	1,381 (Harris County)	
05/25/15	Memorial Day Flood - 500 year flooding event	6 structures (Harris County)	
10/31/15	Halloween Day Flood - 400 year event	1 structure (Harris County)	
04/17/16	Tax Day Flood - 600 year event	16 structures (Harris County)	
05/28/16	Memorial Day Flood - 700 year event	48 structures (Harris County)	
08/29/17	Hurricane Harvey - 1200 year event	3,556 structures (Harris Cnty)	
	Historical flooding in Montgomery County	To be researched with study	
	Historical flooding throughout the study area	To be researched with study	

**Project Location:**

Fully describe the location of the proposed project. Describe the area and/or population affected or protected by this project. Include the location if possible (street address with numbers or neighborhood, city, county with zip codes, Lot, Block or Survey). Provide GPS reading (Lat/Long) of the project site in degrees decimal minutes to 5 places if possible (i.e.: 30.326958 / -97.724750). Attach a separate spreadsheet for multiple latitude/longitude coordinates and descriptions as needed.

Latitude: 29 44' 56.59" Longitude: 95 17' 24.01"

**Description:**

The proposed project area is the San Jacinto River watershed, from its headwaters down to its crossing at Interstate 10. The watershed covers portions of Harris, Montgomery, Liberty, San Jacinto, Walker, Grimes and Waller counties in eastern Texas, and includes more than 12 major streams, in addition to the San Jacinto River, that span more than 500 stream miles. The project area also includes two water supply reservoirs, one at Lake Conroe and one at Lake Houston.

**Population and Structures Affected by Project:**

Indicate the approximate number of people affected by this project to include residents, customers, commuters, or visitors, etc. Provide the number of each type of structure (listed below) in the project area. Include all structures directly affected in project area.

- Number of people affected
- Number of residential properties
- Number of businesses / commercial properties
- Number of public buildings
- Number of schools
- Number of hospitals / medical clinics
- Other (List): parcels with structures on them (within Harris County only)

## **MAPS**

Two maps must be provided with your application. One must show the general location of the project site and the other must show the specific project site. In certain cases when there are no maps available, substitute with an overview photo, drawing or sketch. Ensure it is legible, shows magnetic north, and has major landmarks noted for orientation.

Map Depicting Project Site: (check the boxes to indicate what type of maps are attached)

- City, County, or District scale map showing the entire project area with the project site and structures marked on the map.
- USGS 1:24,000 topographical map with project site marked on the map.(Map depicting relationship to existing features – natural and otherwise)
1. Rivers, lakes, streams, wetlands, saltwater, etc.
  2. Geologic features, steep slopes, unstable areas
  3. Roads, bridges, buildings, etc.
- For acquisition or elevation projects, include a copy of the Parcel Map (Tax Map, Property Identification Map, etc). with each property in the project clearly marked on the map. Use **SAME ID number as in the Property Site Inventory Worksheet.**

**NOTE:** On one or both of the maps and depending on the type of project, you may depict multiple requirements that are listed below, instead of a separate map for each.

## **Photos, Sketches, Drawings, Engineer Designs, etc:**

These help clarify the project setting and the potential impacts of the project on the environment (soils, vegetation, hydrology, wildlife) and they assist in understanding the written description of the project, especially if contours and elevations are provided. The photographs should be representative of the project area, including any relevant streams, creeks, rivers, drainage areas, etc; which affect the project site or will be affected by the project. If photos are provided, then FEMA may not need to conduct a site visit, thereby, reducing the review time. Include ALL engineering calculations and quantity determinations for this project. These are in addition to any map substitutions. Please check the box below for the items you are attaching to your applicaiton, if any:

- Photographs                       Engineering Designs (including calculation and quantity determinations)
- Sketches/Drawings                 Other

## **ENVIRONMENTAL HISTORICAL PRESERVATION (EHP) COMPLIANCE**

Please complete the EHP Checklist (see attachment) and include in the application submission.

As a Federal agency, the Department of Homeland Security (DHS) / Federal Emergency Management Agency (FEMA) is required to consider the effects of its actions on the environment and/or historic properties to ensure that all activities and programs funded by the agency, including grants-funded projects, comply with Federal EHP regulations, laws, and Executive Orders, as applicable. Grant recipients proposing projects that have the potential to impact the environment, including but not limited to construction of communication towers, modification or renovation of existing buildings, structures and facilities (including installation of equipment), or new construction including replacement of facilities, must participate in the DHS/FEMA EHP review process. More information about the EHP requirement can be found at the following links:

<https://www.fema.gov/environmental-planning-and-historic-preservation-compliance>

<https://www.fema.gov/media-library/assets/documents/26621>

Maps will also be required for this portion of the application. If you have photos, sketches, drawings, engineer designs, etc. that will help clarify the project location and structures, please be sure to include them with your application.



**CERTIFICATION AND SIGNATURE OF AUTHORIZED AGENT FORM**

The Chief Elected Official (jurisdiction) or Executive Director (non-jurisdiction) must certify the following statements before the project listed below will be considered for Hazard Mitigation Grant Program (HMGP) funding.

**Name of Sub-Applicant (jurisdiction/non-jurisdiction) Identified in the Application:**  
*(auto-populated from the first page of the application)*

Harris County Flood Control District

**Project Titles Identified in the Application:**  
*(auto-populated from the first page of the application)*

San Jacinto River Regional Watershed Study

To certify, please check the boxes and sign below:

- The undersigned will ensure all State and Federal requirements related to the HMGP funding are fulfilled.
- The undersigned understands that the jurisdiction/non-jurisdiction applying for this grant is liable for the required matching funds (local share) related to the project listed above.
- The undersigned has reviewed and approved the project and information contained in the application.

**Signature of the Authorized Agent**

Name: COUNTY JUDGE ED EMMETT

Title:

Signature:  Date: APR 10 2018

**FLOODPLAIN MANAGER AUTHORIZATION FORM**

Please provide the following information for the designated Floodplain Manager for the project listed below.

Date: April 2, 2018

Sub-Applicant: Harris County Flood Control District

Disaster Declaration: FEMA 4332-DR-TX

Project Title: San Jacinto River Regional Watershed Study

Project Number (if known): \_\_\_\_\_

**Floodplain Manager Contact Information:**

Name: Dena Green Title: Manager, Feasibility Studies Department

Organization: Harris County Flood Control District

Address: 9900 Northwest Freeway

City: Houston State: TX Zip: 77092

Email: dena.green@hcfcd.org Office Phone: (713) 684-4252 Cell: \_\_\_\_\_

**Floodplain Manager Certification Information:**

CFM Certification Number: 0909-06N

If not a CFM, please enter the date of attendance for:

CFM - 1 Week Course: \_\_\_\_\_

Floodplain 101 Course: \_\_\_\_\_

**Certification:**

By signing below, the above Floodplain Manager is authorized to represent and act on behalf of the sub-applicant in all floodplain matters related to the project and grant listed above

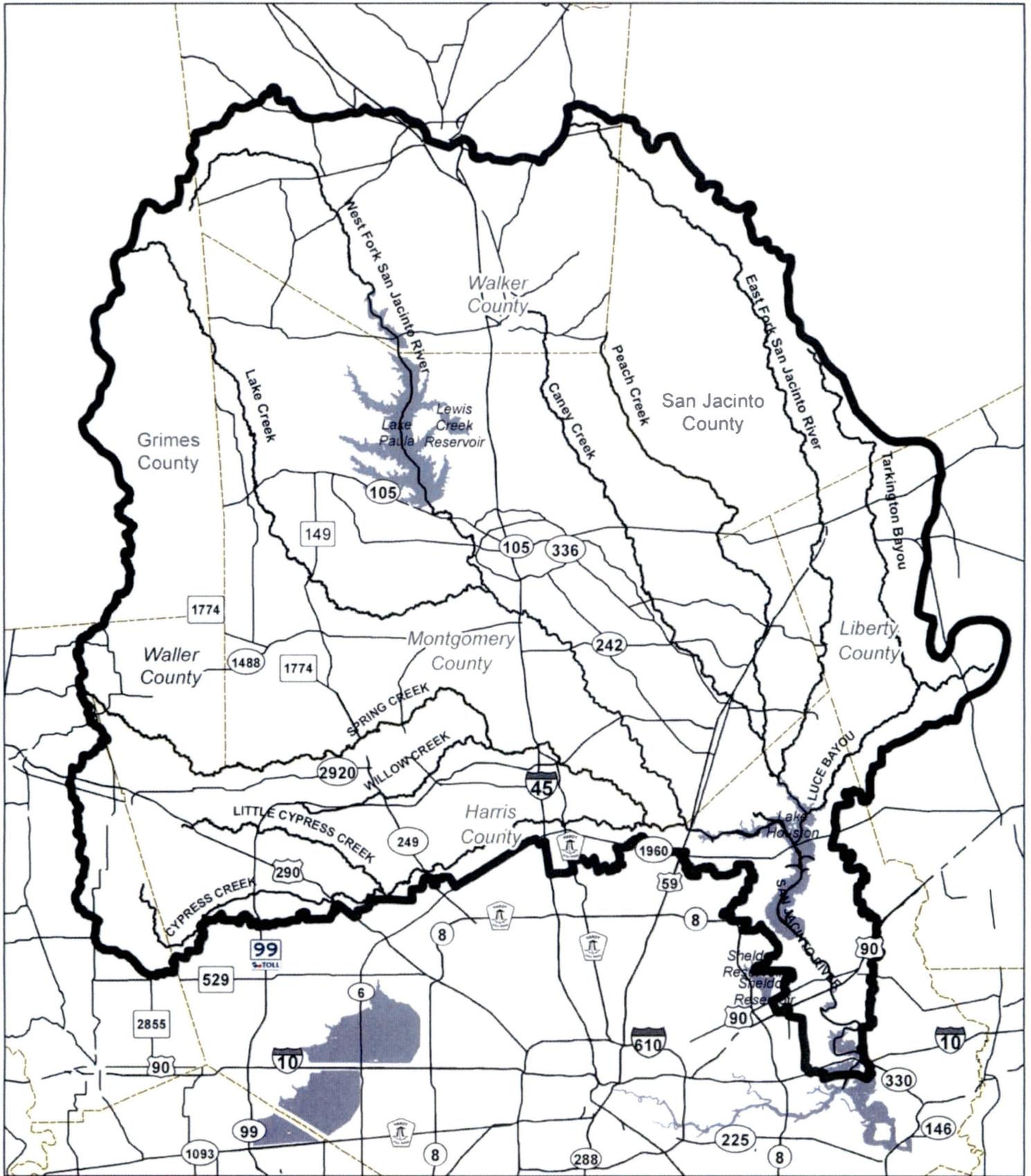
Dena Green  
Signature of Authorized Official/Project Officer

4/02/2018  
Date

Dena Green  
Printed Name

Feasibility Studies Department Manager  
Title

Please submit completed form(s) with the application email as an attachment.



**San Jacinto River Regional Watershed Study**  
**Study Area Map**  
**Disaster Declaration #: FEMA-4332-DR-TX**

**San Jacinto River Regional Watershed Study  
Preliminary Scope of Services**

April 2, 2018

## **INTRODUCTION**

### **BACKGROUND**

In August 2017, Hurricane Harvey struck the Texas coast, bringing a historic amount of rainfall to the Houston region. The storm produced never-before-seen precipitation depths in Harris and Montgomery Counties, as well as several surrounding counties. As was the case with most of the watersheds in the region, the San Jacinto River basin experienced widespread flooding, which resulted in significant damage. In the wake of the storm, the Harris County Flood Control District (HCFCD), San Jacinto River Authority (SJRA), Montgomery County (MCO), and City of Houston (COH) recognized that steps needed to improve coordination, communication, and response among the responsible agencies along the San Jacinto River during major flooding events. In addition, a comprehensive plan of improvements aimed at reducing flood risk in the basin was also recognized as a key piece of the overall recovery plan. The scope provided below is intended to be the first step in addressing each of these elements for the San Jacinto River Basin.

### **GOALS AND OBJECTIVES**

The overall goal of the San Jacinto River Regional Watershed Study is to:

***Perform a hydrologic and hydraulic analysis of the San Jacinto River Basin's major streams during extreme rainfall events, develop approaches to enhance the flood warning and flood response planning capabilities during a disaster, and evaluate flood mitigation strategies that can be implemented both near-term and over the long-term to reduce the flood risk to people and property.***

As such, the study specific objectives include the following:

- Coordinate with flood responders including Harris County Office of Emergency Management (OEM), Montgomery County OEM, SJRA, City of Houston, and potentially others, such as the Harris County Flood Control District's Hydrologic Operations Department, to develop a consistent communications protocol and action plan. This plan should help facilitate a consistent approach across all agencies to locate and protect critical facilities, deploy emergency services, and communicate evacuation routes and shelters to the public.
- Work with HCFCD, SJRA, MCO, and COH to develop strategy to gather and shared flood warning information that can be utilized by all parties to make informed decisions. This strategy will also include recommendations for adding to the existing Harris County Flood Warning System gage network and recommendations for addition additional gages at recommended locations throughout the San Jacinto River Basin.

- Recommend strategies to reduce flood risk and prepare a plan to implement the recommendations. Flood damage reduction options will likely include large regional detention ponds, channel improvements, vegetation and sedimentation removal, and property buy-outs.
- Develop programs and/or materials that educate the decision makers and the public on the extent of the San Jacinto River Basin, general drainage patterns, maintenance programs for the San Jacinto River and its tributaries, potential flood reduction projects, and where to find information relating major stream flooding in the San Jacinto River.

## STUDY LOCATION

The study area will include the entire San Jacinto River (SJR) Basin, including its major tributaries, from the headwaters to the crossing at Interstate 10. The attached study area map shows the extent of the SJR Basin that will be included in this study. While an updated hydrology model for the entire study area will be prepared using HEC-HMS, hydraulic models of the San Jacinto River and twelve (12) of its major tributaries will be included in the study. Existing hydrologic and hydraulic modeling data that has already been developed for the study area will be incorporated into the proposed regional watershed study “as is” when practical, and others will be updated from the existing Base Level Engineering (BLE) models currently being developed through FEMA. The table below provides a list of the streams to be analyzed during the study. In addition to the 13 channels that will be included in the study, water supply reservoirs located at Lake Conroe and Lake Houston will also be included in the study.

**Table 1. Streams that will be Included in the San Jacinto Regional Watershed Study**

<b>Stream Name</b>	<b>Stream Length (Miles)</b>
West Fork San Jacinto River	61.4
East Fork San Jacinto River	73.2
San Jacinto River	16.3
Lake Creek	58.9
Cypress Creek	60.5
Little Cypress Creek	20.8
Spring Creek	69
Willow Creek	19.8
Caney Creek	49.3
Peach Creek	53.5
Luce Bayou	31.2
Tarkington Bayou	17.1
Jackson Bayou	4.6
<b>Total</b>	<b>535.6</b>



## **STUDY PARTNERS**

There are several partners that will contribute to the study in a variety of ways. The primary funding partners are anticipated to be:

- Harris County Flood Control District (Lead Agency)
- Montgomery County
- San Jacinto River Authority
- City of Houston

Other potential partners may provide support during the grant study process. These partners may include:

- Texas Department of Transportation (TXDOT)
- City of Conroe
- Woodlands Township
- The community of Kingwood
- Liberty County (Luce Bayou)
- San Jacinto County (East Fork SJR)
- Walker County (Upper West Fork SJR)
- United States Geological Survey (USGS)
- National Weather Service (NWS) River Forecast Center (RFC)
- Other communities in the study watershed

## SCOPE OF SERVICES

### I. PROJECT MANAGEMENT AND COORDINATION

- A. Project Management and Administration – Based on an estimated schedule of 12 - 18 months, the Project Manager will be responsible for project management and coordination services consisting of internal team management and subconsultant management, as well as regular communication with the Harris County Flood Control District (HCFCFCD) and the other study partners. Specific tasks include:
1. Internal project management including task leadership, internal communication, and data management as specified in the Project Management Plan (PMP).
  2. Subconsultant management and coordination including contracting, invoicing, review of deliverables, and communication.
  3. Administration of the contract, including preparation of invoices and progress reports on monthly basis and requests for authorization as needed. Authorizations will be based on the scope of services and justification will be provided as needed.
  4. Provide a project schedule indicating tasks, critical dates, and deliverables, and prepare regular updates.
- B. Study Kickoff Meeting – Attend the initial study kickoff meeting to discuss study goals and objectives, review the project schedule, and discuss deliverables and other relevant items. Meeting will be attended by the Project Manager and a Project Engineer at a minimum.
- C. Weekly Conference Calls – Participate in weekly coordination calls with HCFCFCD.
- D. Monthly Project Coordination Meetings – Prepare for and attend a monthly project progress meeting with the project team (18 meetings). This includes preparation of the meeting agenda and any necessary meeting materials (maps, documents, etc.). Minutes documenting the discussion will be provided summarizing the discussion and action items. All meetings will be attended by the Project Manager and one (1) additional team member at a minimum.
- E. HCFCFCD Executive Briefings – Prepare for and attend up to two (2) executive briefings for HCFCFCD. The appropriate time for these briefings will be determined by the project team.
1. Attend two (2) Executive Briefings to present study findings (to date) as well as the steps moving forward.
  2. Prepare a PowerPoint presentation as well as necessary exhibits for the meetings. Draft versions of both the presentations and materials will be provided to HCFCFCD for review and comments. Make adjustments to the materials based on comments.
  3. Participate in up to two (2) pre-meetings for each Executive Briefing. These meetings are intended to discuss the presentation and exhibit content as well as to vet the study findings to be presented.

- F. San Jacinto River Authority (SJRA), City of Houston (COH) and Montgomery County (MCO) Briefings – Prepare for and present at up to two additional meetings for SJRA, COH and MCO in addition to the HCFCF executive briefings. These meetings will share the same information as the HCFCF executive briefings and should be conducted after the HCFCF meetings have been held.
- G. Coordination Meetings with Supporting Partners – Attend up to five (5) meetings with supporting partners as listed in the **STUDY PARTNERS** section on Page 2 of this scope. Provide general information relating to the study. Materials to be provided will be at the discretion of HCFCF but it is assumed they would not vary significantly from the materials developed for the Executive Briefings or SJRA/MCO/COH meetings.

## II. DATA COLLECTION AND REVIEW

- A. Data Collection – Collect relevant items to be reviewed and utilized in the study. Data includes, but is not limited to, existing studies, plans, models, GIS data, gage information, etc.
- Terrain Information (Updated LiDAR, available survey data, limited field survey including bridges and culverts)
  - Gage Information (HCFWS, USGS, SJRA, MC Gages, etc.) to include rainfall, WSEL, and Discharge (if applicable)
  - Historical High-Water Marks (HWM)
  - Existing Hydrologic and Hydraulic models for San Jacinto River and tributaries will also be gathered. Models and Sources for this information may include:
    - HCFCF M3 Models for the San Jacinto River, Spring Creek, Willow Creek, Cypress Creek, Little Cypress Creek, Luce Bayou, and Jackson Bayou
    - SJRA Models for the drainage area upstream of Lake Conroe, as well as a HEC-RAS dam breach model of the West Fork San Jacinto River downstream of Lake Conroe.
    - Base Level Engineering (BLE) FEMA Models for East Fork San Jacinto, Peach Creek, and Caney Creek (Bridges may need to be added to these models)
    - Available FEMA Effective models including Lake Creek and others
  - Precipitation Data – Multi-sensor Precipitation Estimate (MPE) rainfall from the NWS for Hurricane Harvey, TS Allison, 2016 storm, and historical rainfall information for October 1994 from available gages
  - Historical flood complaints that can be provided by the study partners
  - Sedimentation data and reports for the SJR Watershed
  - Available reports detailing previous model development efforts and mitigation planning.

- Existing flood response communication protocols from Harris County, Montgomery County, City of Houston, CWA, and SJRA.
- B. **Field Reconnaissance Visits** –Conduct site visits along each of the major streams at to familiarize the project team with the conditions. These site visits will focus on viewing the channel at major roadway crossings to view the conditions at the crossing as well as the channel conditions upstream and downstream. Visits to Lake Conroe and Lake Houston will also be included to verify the dam configuration is consistent with the modeling. Site visits will be documented in a field observation report that includes photographs and notes detailing our findings.
- C. **Model Evaluation and Data Review** –Review the collected data and leverage the information provided for model updates, potential flood reduction project recommendations, identifying locations for potential flood gages, updating flood response protocols, and developing educational materials. Specific tasks include the following:
1. Review all reports provided and determine additional data needs.
  2. Evaluate gage information for completeness and period of record as well as comparison to the historical HWM and flood complaint information to determine consistency.
  3. Evaluate available H&H models to determine additional model construction needs.
  4. Evaluate available terrain information for modeling and mapping purposes.
  5. Provide a comprehensive summary of the review of available reports and data.
- D. **Field Survey Data (as needed)** –Determine the locations needed for field survey based on the data collected in previous tasks. Survey may include high water marks after storm events, up to (25) stream crossings and up to (15) channel cross sections.
- E. **Task Deliverables**
1. Catalog of Data Collected including name, date, and source of information
  2. Field Observation Reports for site visits
  3. Comprehensive Summary of reports and data
  4. Field survey text files and field notes

### III. EXISTING CONDITIONS H&H MODEL DEVELOPMENT

- A. **Hydrologic Modeling** –Update the available hydrologic modeling to provide an improved baseline condition and verify calculated flows for frequency storms. The available HEC-HMS model will be updated to incorporate all the stream watersheds into a single, consistent model. The model will be updated to utilize consistent precipitation, loss parameters, and hydrograph transform parameters. Existing detailed HEC-HMS models provided by HCFCD will not be updated. Specific tasks include:
1. Hydrologic Model for Steady Analysis –Prepare a comprehensive hydrologic model to be utilized in conjunction with unsteady HEC-RAS modeling.
    - a. Convert existing HEC-HMS model to the most current version (v. 4.2.1 or later)
    - b. Confirm and/or update reservoir information for Lake Conroe and Lake Houston

- c. Subdivide or combine drainage areas to ensure adequate computational points and consistency with the existing gage network. Drainage areas for HCFCD models will not be altered. Drainage areas for other areas will be delineated such that major changes in discharges are captured at tributary confluence as well as significant hydrologic features such as bridges, culverts, detention basins, major outfalls, and other features. Future potential gage locations will also be considered as break points for the drainage area delineation.
  - d. Develop hydrologic loss and transform parameters using a consistent methodology. The new hydrology will utilize the Initial and Constant loss method and the Clark UH transform method. Hydrologic parameters for HCFCD models (Spring, Cypress, Luce, Jackson) will not be altered and will maintain the HCFCD specific parameters.
  - e. Update or develop hydrologic loss (Initial & Constant) and transform (Clark UH) parameters for the watershed using appropriate hydrologic methodology.
  - f. If needed, develop storage routing using available hydraulic models (utilize Muskingum-Cunge in areas where no HEC-RAS modeling exists). Unsteady state HEC-RAS will be utilized for the study and it is anticipated that hydrographs generated in HEC-HMS will be routed with the unsteady state HEC-RAS model. However, certain instances may arise when some routing will be required in HEC-HMS. Hydraulic models will be discussed in subsequent sections.
  - g. Update, if appropriate, the HEC-HMS model to include any regional detention ponds, diversions, or other flood control structure that is not in the current model.
  - h. Execute model for a range of storms including the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year storm and review/compare the data to the effective modeling (where available)
- B. **Hydraulic Modeling** –Update the available hydraulic (HEC-RAS) models to reflect the desired level of detail. The models are intended to be used for planning purposes and will not meet standards, specifically with respect to survey of cross sections and hydraulic structures, for a FEMA Letter of Map Revision (LOMR) or Physical Map Revision (PMR). However, they will provide sufficient information to identify flood risks along the streams included in the study, and to develop inundation data sufficient for local communities to utilize when updating their Hazard Mitigation Plans, as well as information that can be utilized for communities in the study area to refer to when planning for future capital projects or the location of critical facilities. Models will be developed or updated using multiple sources including: existing effective steady state models, base level engineering (BLE) models, and existing planning level unsteady modeling. Existing modeling will be leveraged as much as is deemed appropriate. **Table 1** shows the streams to be studied.
1. **Unsteady State Hydraulic Analysis** – Develop unsteady state modeling for the tributaries listed in Table1.
    - a. Convert all HEC-RAS models to the most current version (v 5.0.3 or later)
    - b. Update HEC-RAS models to reflect most current terrain data and field survey

- i. Adjust cross section alignments and update elevations from the terrain data. The hydraulic models will be updated using the most recent terrain with the exception of the effective HCFCF models, which will not be altered
- ii. Add bridge and culvert crossings as needed to the HEC-RAS models. These will be based on field survey data where it is available or field observation and measurements if survey data is unavailable.
- c. Review and update model parameters, including roughness values, obstructions, and ineffective flow areas, as needed based on site visits and/or aerial imagery.
- d. Update flow data and apply inflow hydrographs. Consideration for flow change locations will include (at a minimum) roadway crossings where there are currently gages or future potential gage locations, confluences of tributaries, or other locations where there are significant changes in stormwater discharge when inflow hydrographs are applied.
- e. Execute the model for an array of storms including the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year storm and review/compare the data to the effective modeling (where available). It is understood that the development of the combined unsteady HEC-RAS model will require multiple run iterations for each of the streams at various stages of completion to construct a stable model.
- f. Inundation mapping will be provided once the models are calibrated and the existing conditions finalized (Task IV.C.3). The inundation mapping will be used to illustrate the extent and depth of the floodplain along the studied streams for the analyzed storm events. Additionally, this information will also be used to estimate the number of structures located within the analyzed floodplains, as well as the acres of land and miles of roadway that become inundated by the floodplain generated by the analyzed storm events.

#### C. Task Deliverables

1. Technical memorandum detailing the methodology, development, and results of the existing conditions modeling effort including related exhibits and results tables
2. Hydrologic Models in HEC-HMS
3. Hydraulic Models for steady state and combined unsteady state model in HEC-RAS
4. GIS data supporting modeling efforts in geodatabase format
5. Supporting parameter calculation spreadsheets or other related files

#### IV. ANALYSIS OF HISTORICAL STORMS AND MODEL CALIBRATION

- A. Analysis of Historical Storms –Conduct an analysis that includes the evaluation of several historical storms. Precipitation data gathered from multiple sources will be entered in the existing conditions models to compare modeled results to observed data.
  1. Apply the Multi-sensor Precipitation Estimate (MPE) rainfall data for Hurricane Harvey (2017), T.S. Allison (2001), and the Tax Day Flood (2016) to the updated existing conditions HEC-HMS model.

2. For the October 1994 storm, the rainfall data for each subbasin will be developed using the Isohyetal contours and the available gage data from the San Jacinto River Basin and contributing tributaries. Gages outside the basin will be used to ensure the most accurate rainfall distribution possible. Apply the rainfall to the updated existing HEC-HMS model.
  3. Execute HEC-HMS model for each of the historical storm(s) listed and review results compared to available discharge gages. Compare estimated elevations and discharges for Lake Conroe and Lake Houston.
  4. Apply historical storm(s) discharges to available HEC-RAS models and evaluate calculated WSELs to available gage data and High-Water Marks (HWM) data.
- B. Model Calibration – Utilize the gage data, HWMs, and modeled historical storms to evaluate the validity of the existing conditions models and adjust the models to provide a more consistent result between the modeled and observed results.
1. Document and compare total volume, peak discharges, hydrograph shape, and calculated WSEL for each of the historical storms in the HEC-HMS model vs. the observed gage data at gages and other HWM locations.
  2. Adjust R/TC+R and Modified-Puls (MP) subreaches as necessary to reasonably approach observed gage data. If there is a significant volume difference some of the infiltration loss parameters may require adjustment.
- C. Final Existing Conditions Model – Execute the calibrated HEC-HMS and HEC-RAS models for the range of flows
1. Execute HEC-HMS model with adjusted parameters; Interpolate discharges from HEC-HMS using HCFCD criteria and enter steady flow data into HEC-RAS models.
  2. Execute HEC-RAS model for an array of storms including the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year storm with adjusted parameters and review model results
  3. Prepare inundation mapping for the 100- and 500-year events on all modeled streams. Mapping will be based on RAS Mapper; no additional editing or cleanup will be performed on the mapping. Depth grids may also be provided if requested.
  4. Prepare water surface profiles for the 2-, 5-, 10-, 25-, 50-, 100-, and 500-year storms
  5. Provide comparison tables of the calculated WSEL to the effective modeling (if applicable) to show the changes and provide a discussion of any significant changes.

#### Task Deliverables

1. Technical memorandum detailing the collection and application of historical rainfall and the calibration effort and results
2. Gage information for historical storms
3. Final Hydrologic Model in HEC-HMS
4. Final Hydraulic Model for steady state and combined unsteady state model in HEC-RAS
5. Inundation Mapping for historical storms and (if requested) depth grids
6. GIS data supporting calibration efforts in geodatabase format
7. Supporting parameter calculation spreadsheets or other related files

**V. Future Condition Without Flood Mitigation Measures Hydrologic and Hydraulic Model Development**

- A. Development of future condition hydrologic and hydraulic models – Update the existing conditions hydrologic and hydraulic models developed in Task III to estimate a future condition within the watershed if no new flood mitigation measures were pursued. Future conditions will be estimated by utilizing available population growth projections, and regional growth/development patterns, drainage criteria that has been adopted by appropriate relevant agencies within the watershed, among other information. Consideration of the future conditions analysis will aid in the evaluation of long-term flood mitigation measures.
- B. Task Deliverables
1. Technical memorandum detailing the methodology, development, and results of the future conditions modeling effort including related exhibits and results tables.
  2. Hydrologic Models
  3. Hydraulic Models
  4. GIS data supporting modeling efforts in geodatabase format.
  5. Supporting parameter calculation spreadsheets or other related files.

**VI. FLOOD WARNING SYSTEM**

- A. Flood Warning Coordination – Coordinate with responsible agencies within the study area, including HCFCD, MCO, SJRA and TxDOT, to discuss the current Harris County Flood Warning System (FWS) and a potential expansion to be identified as part of this study. Recommended locations for additional ALERT 2 Rain and WSEL gages within the San Jacinto River Basin will be identified. This includes potential gages along major tributaries. It is expected that at least 5 gages will be installed during this effort.
- B. Task Deliverables
1. Agenda and meeting minutes detailing the discussion, decisions and action items for the meetings with Harris County Hydrologic Operations Division, HCFCD Planning, Montgomery County, and SJRA
  2. Memorandum detailing the specific gage improvements including gages previously identified for installation, additional gages to be considered, and associated budget and schedule for implementation

## VII. FLOOD RESPONSE PLANNING

- A. Flood Response Coordination – Meet with responsible agencies to discuss existing plans/protocols and strategies to improve flood response. Agencies include but are not limited to the Harris County Hydrologic Operations Division, Harris County Office of Emergency Management (OEM), Montgomery County OEM, SJRA, City of Houston, and TxDOT
- B. Communications Plan/Protocol Update – Develop a communications plan/protocol for the responsible agencies (listed above in Task VI.A) that will facilitate information sharing in a timely manner. This includes a review of existing protocols, discussion about the pros/cons of the current protocols, and recommendations for future response coordination.
- C. Locate Critical Infrastructure – Provide an exhibit and related GIS shapefile that locates critical facilities along the modeled streams. This could include government buildings, water and wastewater treatment facilities, police and fire stations, major utility crossings, and others. The level of risk for each of the facilities will also be established based on the frequency of inundation as determined by the updated existing conditions modeling and mapping.
- D. Identify Evacuation Routes – Determine major roadway (TxDOT) accessibility during flood events and evaluate potential evacuation routes.
  1. Identify roadways that overtop for a range of rainfall frequencies
  2. Using the modeling and gage information, set target gage elevations where inundation at nearby road crossings is likely
  3. Identify evacuation routes along major roads based on frequency of inundation and traffic capacity.
  4. Consider potential improvements to major roadways that could reduce the risk of inundation and provide a more reliable evacuation route. Recommendations for this task will be limited to identifying crossings that should be raised. Recommendations for flood reduction projects will be addressed in Task VII.A.
- E. Task Deliverables
  1. Agenda and meeting minutes detailing the discussion, decisions and action items for the meetings with Harris County Hydrologic Operations Division, HCFCF Planning, Montgomery County, and SJRA, or other organizations that coordination with is necessary to perform the flood response planning.
  2. Memorandum detailing the updated communications plan/protocol. This includes specific exhibits, tables, etc. that clarify the communications process to be followed in the event of a flood event. Explicit information about responsible parties and updated contact information will be included in the revised protocol.
  3. Exhibit and GIS Shapefile for critical facilities and infrastructure

4. Memorandum detailing the evacuation routes on major highways and potential improvements to reduce inundation frequency. Include related exhibits and tables identifying evacuation routes for multiple rainfall frequencies.

## VIII. FLOOD MITIGATION PLANNING

### A. Primary Flood Mitigation Alternatives

1. Review previous studies across the SJR watershed and develop a comprehensive list of major projects that were previously proposed as well as any public feedback related to the proposed projects.
2. Develop screening criteria and rank the previously proposed major projects with consideration to metrics such as project cost, design life, maintenance, feasibility, constructability, public benefit, and public safety.
3. Score the projects and identify the top four (4) for detailed H&H evaluation and benefit-cost evaluation.
4. Proposed Alternatives H&H Analysis
  - a. Update the relevant hydrologic and hydraulic model based on the proposed improvements.
  - b. Evaluate the effectiveness of the proposed improvements by comparing flows, WSELs, and inundation limits. Changes in peak flows and WSEL will be evaluated throughout the entire model to ensure no negative impacts.
  - c. Identify project right-of-way needs, environmental constraints, utility challenges, and other potential issues that may hinder implementation

### B. Secondary Flood Mitigation Alternatives

1. Develop additional alternative projects that were not previously identified. Projects may include large regional detention facilities, channel modifications, sedimentation removal, and home buyouts.
2. Rank alternatives based on the screening criteria developed in Task VII.A.2
3. Score the projects and identify the top five (5) for detailed H&H evaluation and benefit-cost evaluation
4. Proposed Alternatives H&H Analysis
  - a. Update the relevant hydrologic and hydraulic model based on the proposed improvements. If the proposed project is along the West Fork SJR, Spring Creek, or Lake Creek, the unsteady models will be utilized. If the proposed improvement is along one of the other modeled streams, the steady state models will be used.
  - b. Evaluate the effectiveness of the proposed improvements by comparing flows, WSELs, and inundation limits. Changes in peak flows and WSEL will be evaluated throughout the entire model to ensure no negative impacts.
  - c. Identify project ROW needs, environmental constraints, utility challenges, and other potential issues that may hinder implementation



- C. Benefit Cost Analysis
1. Estimate expected annual flood damages using HEC-FDA for the existing conditions as well as the proposed alternative scenarios; the analysis will focus on the studied streams only and depth-damage information will be based on USACE curves.
  2. Prepare a conceptual level cost estimate for each of the flood reduction projects modeled.
  3. Determine estimated costs associated with buyout areas; utilize available County Appraisal District information.
  4. Identify potential benefits by subtracting the alternative flood damages from the existing (without project) damages. The difference between the two will be considered the benefit.
- D. Alternative Funding Opportunities – Identify potential alternative funding opportunities using grant or loan programs (HMGP, CDBG, CWA-SRF, etc.), evaluate the funding source requirements and applicability to specific projects, and provide recommendations for funding candidates
- E. Project Implementation – Provide HCFCF, SJRA, and MCO with a list of recommended flood reduction projects and/or strategies and specific information related to implementation.
1. Provide project description, costs, Right-of-way needs, potential project constraints (environmental, utility, etc.), and a timeframe for implementation.
  2. Develop a plan to implement recommended projects and/or buyout programs within the basin.
  3. Identify the highest priority project and develop a preliminary scope of work for a Preliminary Engineering Report; Cite critical tasks such as environmental assessment and permitting, right-of-way acquisition, utility relocation, and additional detailed H&H analysis that will be required to implement the project in a timely fashion.
- F. Vegetation and Sediment Control – One of the key strategies that will be evaluated to help reduce flood risk is the development and implementation of a maintenance plan to help control sedimentation and vegetative growth along the major streams included in this study, particularly along the West Fork of the San Jacinto.
1. Coordinate with SJRA and HCFCF Facilities Maintenance Department.
  2. Review and update the *Lake Houston Watershed Flood Program* report prepared by Brown & Root Services (June 2000).
  3. Review previous sedimentation reports and update as necessary.
  4. Leverage the Lake Houston report and others to develop a sediment management strategy for during and after flood events for West Fork San Jacinto River and Spring Creek.
  5. Determine the agency or agencies that are responsible for desilting and vegetative debris removal efforts in the West Fork San Jacinto River. Develop a draft memorandum of understanding for the agencies to consider.
  6. Develop a document discussing the history of sand mining operations in the basin.

- a. Review aerial photography and available topography to observe changes in the stream alignments for the West Fork San Jacinto River and Spring Creek.
  - b. Identify potential sources of sedimentation in Spring Creek and West Fork San Jacinto River.
  - c. Review changes in sand mining operations along the West Fork San Jacinto River, including changes in regulations that the sand mining operations are required to follow.
  - d. Submit technical report detailing the process and findings.
7. Determine the floodplain impacts of desilting and debris removal.

**G. Task Deliverables**

1. Technical memorandum detailing the alternatives identified for evaluation.
2. Technical memorandum detailing the alternatives evaluated; include project type and configuration, comparison to existing model, expected reduction in damages, expected implementation costs, ROW needs, and constraints.
3. Inundation maps will be prepared to illustrate the extent and depth of the floodplain along the studied streams for the analyzed storm events with the proposed alternatives in place.
4. Additionally, estimates of the number of structures located within the analyzed floodplains, as well as the acres of land and miles of roadway that become inundated by the floodplain generated by the analyzed storm events with the recommended flood mitigation measures in place.
5. Memorandum discussing potential alternative funding sources.
6. Memorandum detailing the proposed implementation plan for recommended projects and identification of the highest priority project with a preliminary scope of work.
7. Document discussing history of mining operations along the West Fork San Jacinto River.
8. Document detailing the proposed sediment management strategy.

**IX. COMMUNITY OUTREACH AND EDUCATION**

- A. Public Education –Assist with the development of educational materials specifically related to the San Jacinto River Basin including, but not limited to, the following:
1. Preparing basic exhibits showing the contributing drainage area and streams, inundation mapping based on the effort completed in Tasks III and IV, roadway crossings, etc.
  2. Prepare narratives for educational materials which provide a general description of the watershed characteristics, area, history of flooding, intent of the study, etc.
  3. Provide graphics for websites, social media, and video preparation.
  4. It is understood that HCFC, SJRA, and MCO will provide guidance and the ultimate decision about what material is presented in the educational materials.
- B. Task Deliverables
1. Exhibits, graphics, narratives and other materials generated as part of the public education effort



## **X. FINAL DELIVERABLES**

- A. **Draft Report** – Three copies (3) of a draft report detailing each of the tasks included in the scope will be provided and will include the following components:
1. Executive Summary providing an overview of the study tasks, findings and recommendations
  2. Study narrative detailing each of the tasks listed in the scope including assumptions, procedures, findings, and recommendations. A section including preliminary recommendations for implementation of projects and tasks will be provided
  3. Figures and Tables within the narrative providing graphic information relevant to the associated narrative section
  4. Exhibits showing necessary information including, but not limited to project location, FEMA mapping, existing and revised drainage areas, land uses, parameter development, existing inundation for frequency and historical storms, potential flood mitigation projects, critical facilities and evacuation routes, and other information
  5. Each of the technical memorandums provided will be included as an Appendix and referenced throughout the narrative. These include information about the data collection and review, model development, model calibration, flood warning system enhancements, flood response planning, lake operations, vegetation and sediment control, and public education efforts
- B. **Final Report** – Three (3) copies of the final report will be submitted following a review and comment period by HCFCD, SJRA, and MCO. Comments on the draft report will be addressed and incorporated into the final report before submittal.
- C. **Supporting Data** – The following data will be provided with the Final Report delivery
1. Provide a complete PDF copy of the final report with bookmarks
  2. Provide individual PDF versions of all exhibits and appendices
  3. Provide spreadsheets used for parameter calculation, results tables, cost estimates, etc. in Microsoft Excel 2016
  4. Provide final versions of the HEC-HMS and HEC-RAS models in the most current versions
  5. Provide supporting GIS data in geodatabase format
  6. Provide photographs in a digital format converted to JPEG. Images shall have a resolution not lower than 1024 X 768.

# ENVIRONMENTAL AND HISTORICAL PRESERVATION CHECKLIST

Please provide the following information as it appears on your application.

Disaster Declaration #: FEMA-4332-DR-TX

Name of Sub-Applicant Organization/Agency: Harris County Flood Control District

Project Title: San Jacinto River Regional Watershed Study

## MAINTENANCE ASSURANCE DESCRIPTION:

1. Identify any maintenance activities required to preserve the long-term mitigation effectiveness of the project. Below provide the annual cost of maintenance before mitigation and what the maintenance will include. Not needed if project is not tied to an existing capital improvement. (Either describe in 1,500 characters or less or attach a separate Word document).
2. Attach a maintenance schedule, estimated costs, and a signed maintenance commitment letter, if required, to the application submission. (See sample Maintenance letter on page 8 of this document).

The proposed project consists of a planning study. As part of the study objectives, flood mitigation projects for the study area will be identified. Appropriate maintenance activities, as well as environmental and historical investigations will be identified and pursued when the projects that are identified during the San Jacinto River Regional Watershed Study are pursued at a later date.

## NATIONAL FLOOD INSURANCE PROGRAM (NFIP)

1. Is the community where the project is located participating in the NFIP?  YES  NO  
If "YES", are they in good standing?  YES  NO  
NFIP Community ID Number: 480287, 480296
2. Is this project located in a floodplain/floodway designated on a FEMA Flood Insurance Rate Map (FIRM)?  YES  NO  
(Note: Maps can be obtained from the Map Service Center at <https://msc.fema.gov/portal/>)

If "YES", please mark the project location(s) and structure(s) on the FIRM and attach with the application and provide the following information:

A. FIRM Panel Number(s): numerous panels

B. FIRM Zone Designations:

Special Flood Hazard Area (SFHA):

A  AO  AH  A1-30  AE  A99  AR  AR/AE  
 AR/AO  AR/A1-30  AR/A  V  VE  V1-30

Moderate Flood Hazard Area (shaded):  B  X

Minimal Flood Hazard Area (unshaded):  C  X

Floodway:

Coastal Barrier Resource Act (CBRA) Zone:

(Federal regulations strictly limit Federal funding for projects in this Zone. Coordinate check with your state agency before submitting an application for a CBRA Zone project)

C. If a FIRM map is not available, please check the box:

**ENVIRONMENTAL QUESTIONNAIRE**

**SECTION I – REGULATIONS**

The Council on Environmental Quality (CEQ) has developed regulations to implement the National Environmental Policy Act (NEPA). These regulations, as set forth in Title 40, Code of Federal Regulations (CFR), Parts 1500-1508, require an investigation of the potential environmental impacts of a proposed federal action and an evaluation of alternatives as part of the environmental assessment process. The FEMA regulations that establish the agency-specific process for implementing NEPA are set forth in 44 CFR, Part 10. FEMA will assist in obtaining NEPA clearance.

Environmental data is required for project applications when submitting a project to the Texas Division of Emergency Management for the FEMA Hazard Mitigation Grant Program.

Please Note: Environmental review is typically the most time consuming aspect of project funding approval.

**SECTION II - ENVIRONMENTAL CHECKLIST**

**Environmental Checklist Instructions**

Select appropriate answer by clicking the appropriate box (an X should appear in the box).

Provide a detailed response to each question and attach supporting documentation in order to comply with FEMA's front loading requirements discussed in Hazard Mitigation Assistance Unified Guidance 2015.

**YES NO N/A NATIONAL HISTORIC PRESERVATION ACT**

Are any structures involved in the project? If yes, provide construction dates of all structures

Dates: \_\_\_\_\_

Was consultation with the State Historic Preservation Officer (SHPO) conducted?

If yes, provide date \_\_\_\_\_ and attach all formal correspondence with application.

Was consultation with the Tribal Historic Preservation Officer (THPO) conducted?

If yes, provide date \_\_\_\_\_ and attach all formal correspondence with application.

**Coordinating Agency: The SHPO and/or THPO**

**YES NO N/A ARCHEOLOGICAL RESOURCES PRESERVATION ACT**

Will there be any ground disturbance?

Will there be any potential disturbance to cultural resources?

Was consultation with SHPO/THPO conducted?

If yes, provide date \_\_\_\_\_ and attach all formal correspondence with application.

**Coordinating Agency: The SHPO and/or THPO**

**YES NO N/A ENDANGERED SPECIES ACT**

Will there be any disturbance to the physical environment?

Are any threatened or endangered species present in the project area?

Has critical habitat been identified in the project area?

Was consultation with U.S. Fish and Wildlife Service (USFWS) and Texas Parks and Wildlife Department (TPWD) conducted?

If yes, provide date \_\_\_\_\_ and attach all formal correspondence with application.

**Coordinating Agency: The USFWS and TPWD**

**YES NO N/A FISH AND WILDLIFE COORDINATION ACT**

- Is the project located in or near a waterway or body of water?
- Will the project cause any modification to the waterway or body of water?
- Was consultation with USFWS, National Marine Fisheries Service (NMFS), and TPWD conducted?  
If yes, provide date \_\_\_\_\_ and attach all formal correspondence with application.

**Coordinating Agency:** USFWS, TPWD and NMFS

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**YES NO N/A FARMLANDS PROTECTION POLICY ACT**

- Is the project located in or near designated prime and unique farmlands?
- Will the project convert any designated prime and or unique farmlands?
- Was consultation with Natural Resources Conservation Service (NRCS) conducted?  
If yes, provide date \_\_\_\_\_ and attach all formal correspondence with application.

**Coordinating Agency:** U.S. Dept. of Agriculture's NRCS, Dept. of Conservation (Division of Land Resource Protection)

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**YES NO N/A CLEAN AIR ACT**

- Will the project result in temporary or permanent air emissions?
- Was consultation Texas Commission on Environmental Quality (TCEQ) conducted?  
If yes, provide date \_\_\_\_\_ and attach all formal correspondence with application. **Coordinating**

**Agency:** Environmental Protection Agency (EPA) and TCEQ

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**YES NO N/A CLEAN WATER ACT (Section 404), RIVERS AND HARBORS ACT (Section 10)**

- Will the project involve dredging or disposal of dredged material, excavation, adding fill material or result in any modification to waters\* of the U.S.?
- Will the project involve bank stabilization or installing transmission in waters\* of the U.S.?
- Will the project be near or in navigable waters\*?
- Was consultation with the U.S. Army Corps of Engineers (USACE) conducted?  
If yes, provide date \_\_\_\_\_ and attach all formal correspondence with application.
- Will a permit be required?
- Have you submitted an application to the USACE?  
If yes, attach all formal correspondence with application.
- Does a nationwide permit apply?
- Does a general permit apply?

\* "waters" includes waters subject to ebb and flow of tide, wetlands, lakes, rivers, streams, mudflats, sloughs, prairie potholes, wet meadows, playa lakes, natural ponds, impoundments, tributaries, territorial seas, and wetlands adjacent to waters previously identified.

**Coordinating Agency:** USACE

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**YES NO N/A WILD AND SCENIC RIVERS ACT**

- Is the project located near or in a designated wild or scenic river?
- Was consultations TPWD ro USFWS conducted?

If yes, provide date \_\_\_\_\_ and attach all formal correspondence with application.

**Coordinating Agency:** *USFWS and the U.S. Forest Service within their jurisdiction and TPWD.*

**YES NO N/A WILDERNESS ACT**

- Is the project located near or in a designated wilderness or coastal wildlife area?
- Was consultations with TPWD or USFWS conducted?

If yes, provide date \_\_\_\_\_ and attach all formal correspondence with application.

**Coordinating Agency:** *USFWS, National Park Service and the Bureau of Land Management (BLM), General Land Office and TPWD.*

**YES NO N/A OTHER RELEVANT LAWS AND ENVIRONMENTAL REGULATIONS**

- Do any other laws and/or regulations apply to the project?

If yes, please reference the regulation below and attach proper documentation to application.

Regulation: \_\_\_\_\_

**Coordinating Agency:** *Applicable State Statutory Requirements, Executive and Administrative Orders and any local environmental requirements.*

**EXECUTIVE ORDERS**

**YES NO N/A E.O. 11988 – FLOODPLAINS**

- Is the project located in a FEMA-identified 100-year or 500-year floodplain?
- Is the project located in a FEMA-identified floodway?
- Is the project depicted on a FEMA Flood Insurance Rate Map (FIRM)?

If yes, attach the map with application

- Was consultation with local floodplain administrator and state water control agency conducted?

If yes, provide date \_\_\_\_\_ and attach all formal correspondence with application.

**Comments:** *A letter is required from the State Community Assistance Program Coordinator indicating the community is in good standing with the NFIP.*

**Coordinating Agency:** *Local community floodplain administrator and the Texas Water Development Board.*

**YES NO N/A E.O. 11990 – WETLANDS**

- Is the project in an area that is inundated or saturated by surface or ground water (e.g. swamps, marshes, bogs, etc.) or in or near identified wetlands\*?
- Is the project depicted on a National Wetlands Inventory (NWI) map?

If yes, attach the map and all formal correspondence with application

\* "Wetlands" are identified by obtaining a National Wetlands Inventory (NWI) map from the USFWS, the USACE, or their websites. The Natural Resource Conservation Service also has wetland maps for agricultural land.

**Coordinating Agency:** *USFWS, USACE and NRCS*

**YES NO N/A E.O. 12898 – ENVIRONMENTAL JUSTICE**

- Is the project in an area of low income or minority populations?
- Will the project disproportionately impact any low income or minority populations?
- Is any socio-economic data attached?

**Comments:** *If the project would disproportionately adversely affect low income or minority populations, or would disproportionately assist higher income populations at the exclusion of lower income or minority populations, then E.O. 12898 must be addressed.*

**Coordinating Agency:** *Local census office*

**EXTRAORDINARY CIRCUMSTANCES (FEMA 44 CFR §10.8 (d)(3))**

If Extraordinary Circumstances exist within an area affected by an action, such that an action that is categorically excluded from NEPA compliance may have a significant adverse environmental impact, an environmental assessment shall be prepared. Please answer "Yes" or "No" to the questions below:

**YES NO**

- Greater scope or size than normally experienced for a particular category of action;
- Actions with a high level of public controversy;
- Potential for degradation, even though slight, of already existing poor environmental conditions;
- Employment of unproven technology with the potential adverse effects or actions involving unique or unknown environmental risks;
- Presence of endangered or threatened species or their critical habitat, or archaeological cultural, historical or other protected resources;
- Presence of hazardous or toxic substances at levels which exceed Federal, State, or local regulations or standards requiring action or attention;
- Actions with the potential to affect special status areas adversely or other critical resources such as wetlands, coastal zones, wildlife refuge and wilderness areas, wild and scenic rivers, sole or principal drinking water aquifers;
- Potential for adverse effects on health or safety; and
- Potential to violate a Federal, State, local, or tribal law or requirement imposed for the protection of the environment.
- Potential for significant cumulative impact when the proposed action is combined with other past, present and reasonably foreseeable future actions, even though the impacts of the proposed action may not be significant by themselves.

**SECTION III - ALTERNATIVES NARRATIVE**

**Alternative #1 – No Action Alternative** - evaluates the consequences of taking no action and leaving conditions as they currently exist. Please describe the benefits of this action and the shortfalls or gaps associated with this action. *(Either describe in 1,500 characters or less or attach a separate Microsoft Word document)*

**ALTERNATIVE #2 - Proposed Action** – this is the sub-applicant’s proposed project. Explain why the proposed action is the preferred alternative. Identify how the preferred alternative would solve a problem, why the preferred alternative is the best solution and benefits the community, why and how the alternative is environmentally preferred and why the project is the economically preferred alternative. Also include the shortfalls or gaps associated with the proposed action. *(Either describe in 1,500 characters or less or attach a separate Microsoft Word document)*

**ALTERNATIVE #3 – Second Alternative** - is the second alternative to the Proposed Project above and would also solve the problem. It would be a viable project that could be substituted in the event the proposed project is not chosen. Identify how this project would solve the problem, the community benefits and why it is an environmental and economical alternative. Also include the shortfalls or gaps associated with this action. *(Either describe in 3,500 characters or less or attach a separate Microsoft Word document.)*

**SECTION IV – PUBLIC NOTICE PROCEDURES**

NEPA is a planning and disclosure process. Therefore both NEPA and EO 11988 require notification of the public

- A. when a project and its alternatives are initially being developed and scoped; and
- B. after the completion of the final draft environmental assessment, and before the signing of the Finding of No Significant Impacts (FONSI) and any action taken.

The requirements of (A), which is referred to as a NOTICE OF INTENT, can usually be met by one of the following:

- 1. Publishing at the beginning of a disaster FEMA's General Notice for a Presidential Declaration, which issues notification that funds will be provided under the Stafford Act to undertake projects.
- 2. Publishing a NOTICE OF INTENT in a local newspaper to undertake a project, providing the alternatives, and then giving the public 15 days to respond.
- 3. Holding one or more public meetings on the project to solicit public comments.

Exactly which of the above vehicles is used to meet the requirements of (A) will usually be determined by the scope of the proposed project, agency coordination, and previous notification and scoping work performed by the applicant. Any comments received during this phase of notification should be addressed in the Environmental Assessment (EA).

The requirements of (B), which is referred to as a FINAL NOTICE, can usually be met by the following:

- 1. Publishing a FINAL NOTICE in a local newspaper and giving the public 15 days to respond.
- 2. If no comments are received, the FONSI can be signed and the project can proceed.
- 3. If comments are received they can be addressed individually and/or in a rewrite of the EA.
- 4. If significant negative comments are received, the project should be put on hold until the issues are resolved.

An example of a Final Public Notice can be found on page 9.

*Note: The above requirements are also to be applied to a project deemed to be a categorical exclusion (CATEX) from the preparation of an EA, but involves EO 11988 (floodplains) and/or EO 11990 (wetlands) and/or potentially or existing contentious issues.*

**SECTION V – PROJECT CONDITIONS AND CERIFICATIONS**

Indicate by checking each box below that you will adhere to these listed project conditions.

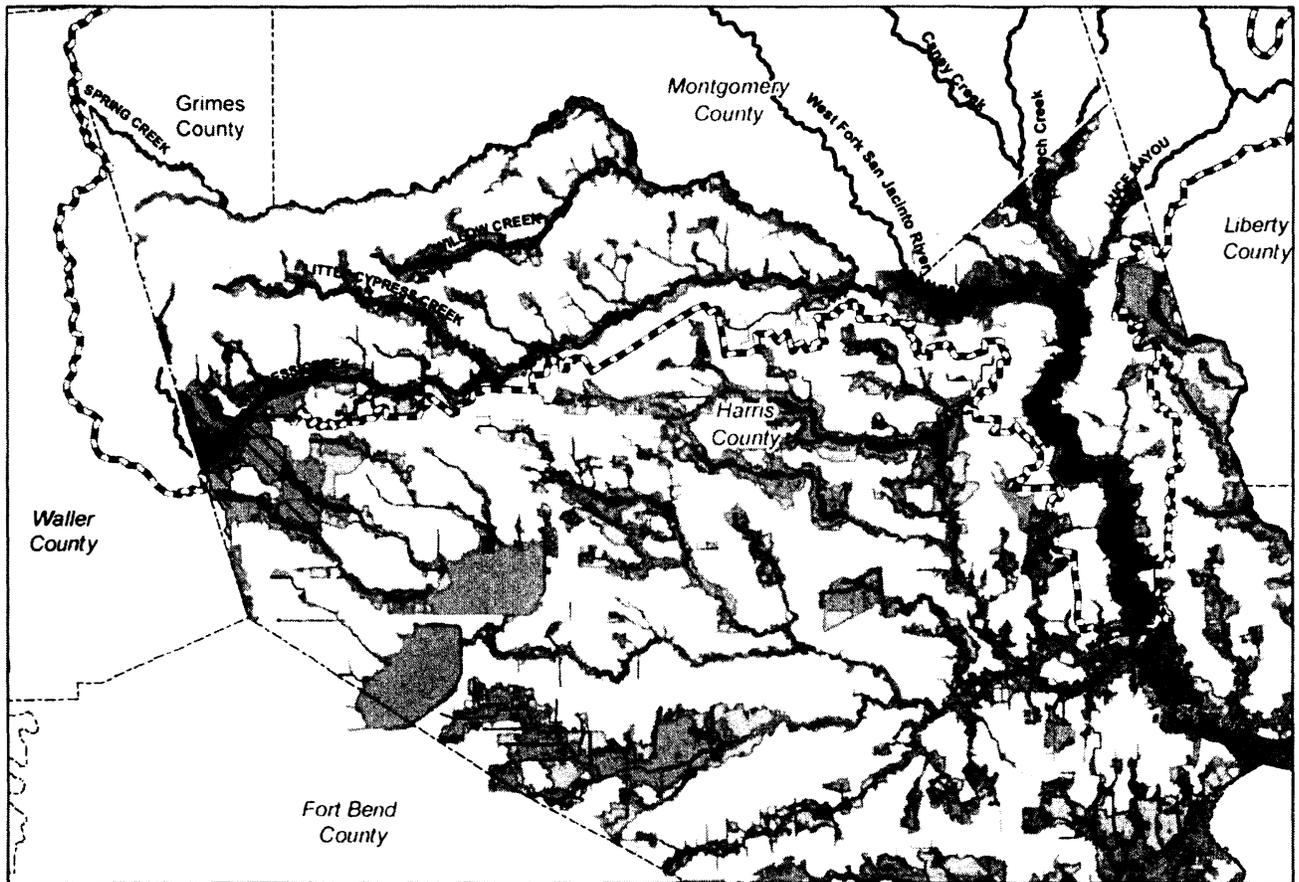
- If during implementation of the project, ground-disturbing activities occur and artifacts or human remains are uncovered, all work will cease and FEMA, TDEM, and the State Historic Preservation Officer (SHPO) will be notified.
- If deviations from the approved scope of work result in design changes, the need for additional ground disturbance, additional removal of vegetation, or will result in any other unanticipated changes to the physical environment, FEMA will be contacted and a re-evaluation under NEPA and other applicable environmental laws will be conducted.
- If wetlands or waters of the U.S. are encountered during implementation of the project, not previously identified during project review, all work will cease and FEMA will be notified.

Print Name: Russell Poppe  
(Name of Authorized Official/Project Officer)

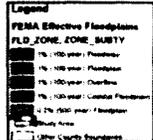
Title: Executive Director

Signature: 

Date: 4/3/2018



**San Jacinto River Regional Watershed Study  
FEMA Effective Floodplains - Harris County**



## APPLICANT INFORMATION

(Please enter the name of the organization and project title as is appears on the application form)

Name of Organization: **Harris County Flood Control District**

Project Title: **San Jacinto River Regional Watershed Study**

## BUDGET SUMMARY

(THE INFORMATION BELOW IS AUTO-CALCULATED - PLEASE FILL IN EACH TAB AT THE BOTTOM)

Materials and Equipment Total	\$0.00
Labor Costs Total	\$2,494,000.00
Other Costs Total	\$6,000.00
<b>Project Total</b>	<b>\$2,500,000.00</b>
Federal Percentage	75%
<b>Federal Amount</b>	<b>\$1,875,000.00</b>
Non-Federal ( <i>local Match</i> ) Percentage	25%
<b>Local Match Amount</b>	<b>\$625,000.00</b>

<b>Designation of Subrecipient Agent – Primary Contacts</b>	
Texas Department of Public Safety - Texas Division of Emergency Management	
Subrecipient: Harris County Flood Control District	
Disaster Number(s): DR-4332-TX	Grant Program: HMGP
<b>Primary Agent</b>	
Serves as the primary point of contact for projects.	
Name: Dena Green	Office Number: (713) 684-4252
Position/Job Title: Feasibility Studies Dept. Manager	Fax Number: (713) 684-4140
Organization/employer: Harris County Flood Control District	Cell Number:
Email* dena_belle@yahoo.com	The Primary Agent will have full GMS access
<b>Secondary Agent</b>	
Serves as the secondary point of contact for projects.	
Name: Matthew Zeve	Office Number: (713) 684-4055
Position/Job Title: Director of Operations	Fax Number: (713) 684-4140
Organization/employer: Harris County Flood Control District	Cell Number: (713) 806-6950
Email* matthew.zeve@hcfcd.org	The Secondary Agent will have full GMS access
<b>Primary Finance Agent</b>	
Serves as the primary point of contact for financial matters.	
Name: Richard McCullough	Office Number: (713) 684-4074
Position/Job Title: Grant Accounting Section Leader	Fax Number: (713) 684-4140
Organization/employer: Harris County Flood Control District	Cell Number:
Email* Richard.McCullough@hcfcd.org	The Primary Finance Contact will have full GMS access
<b>Certifying Official</b>	
Serves as the official representative of the organization. Must possess the authority to obligate funds & enter into contracts for the organization.	
Name: Honorable Judge Ed Emmett	Office Number: (713) 274-7000
Position/Job Title: Harris County Judge	Fax Number: (713) 755-8379
Organization/employer: Harris County	Cell Number:
Email* cjgrantsnotification@hctx.net	GMS Access (pick 1) Full <input type="checkbox"/> Read Only <input type="checkbox"/> None <input checked="" type="checkbox"/>
<i>The above Primary and Secondary Agents are hereby authorized to execute and file the application on behalf of this organization for the purpose of obtaining certain state and federal financial assistance under the Robert T. Stafford Disaster Relief &amp; Emergency Assistance Act, (Public Law 93-288 as amended) or otherwise available. Primary Financial Agent and the Certifying Official are authorized to represent and act for this organization in all financial operations pertaining to this grant with the State of Texas.</i>	
*Note: All email addresses must be unique to user	



APR 10 2018

**Signature of Certifying Official**

Honorable Judge Ed Emmett

Print Name

Date

(Must be a Mayor, Judge, or Executive Director with the authority to obligate funds & enter into contracts for the organization)

# Designation of Subrecipient Agent – Additional Contacts (Optional)

Texas Department of Public Safety - Texas Division of Emergency Management

Subrecipient: Harris County Flood Control District

Disaster Number(s): DR-4332-TX

Grant Program: HMGP

## Additional Contact

List any additional contact here

Name:	Office Number:
Position/Job Title:	Fax Number:
Organization/employer:	Cell Number:
Email*	GMS Access (pick 1) Full <input type="checkbox"/> Read Only <input type="checkbox"/> None <input type="checkbox"/>

If this contact replaces an existing contact, write their name below. Otherwise, leave blank or mark N/A

## Additional Contact

List any additional contact here

Name:	Office Number:
Position/Job Title:	Fax Number:
Organization/employer:	Cell Number:
Email*	GMS Access (pick 1) Full <input type="checkbox"/> Read Only <input type="checkbox"/> None <input type="checkbox"/>

If this contact replaces an existing contact, write their name below. Otherwise, leave blank or mark N/A

## Additional Contact

List any additional contact here

Name:	Office Number:
Position/Job Title:	Fax Number:
Organization/employer:	Cell Number:
Email*	GMS Access (pick 1) Full <input type="checkbox"/> Read Only <input type="checkbox"/> None <input type="checkbox"/>

If this contact replaces an existing contact, write their name below. Otherwise, leave blank or mark N/A

## Additional Contact

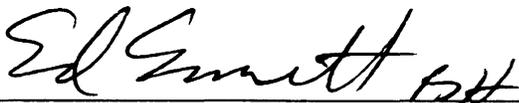
List any additional contact here

Name:	Office Number:
Position/Job Title:	Fax Number:
Organization/employer:	Cell Number:
Email*	GMS Access (pick 1) Full <input type="checkbox"/> Read Only <input type="checkbox"/> None <input type="checkbox"/>

If this contact replaces an existing contact, write their name below. Otherwise, leave blank or mark N/A

*Additional Contacts are authorized to represent and act for this organization in all operations pertaining to this grant with the State of Texas.*

\*Note: All email addresses must be unique to user



Honorable Judge Ed Emmett

APR 10 2018

**Signature of Certifying Official**

**Print Name**

**Date**

(Must be a Mayor, Judge, or Executive Director with the authority to obligate funds & enter into contracts for the organization)

**Application for Federal Assistance SF-424**

<b>* 1. Type of Submission:</b> <input type="checkbox"/> Preapplication <input checked="" type="checkbox"/> Application <input type="checkbox"/> Changed/Corrected Application	<b>* 2. Type of Application:</b> <input checked="" type="checkbox"/> New <input type="checkbox"/> Continuation <input type="checkbox"/> Revision	<b>* If Revision, select appropriate letter(s):</b> <input type="text"/> <b>* Other (Specify):</b> <input type="text"/>
---	---	--

<b>* 3. Date Received:</b> 03/16/2018	<b>4. Applicant Identifier:</b> Harris County Flood Control
--	--

<b>5a. Federal Entity Identifier:</b> <input type="text"/>	<b>5b. Federal Award Identifier:</b> <input type="text"/>
---	--

**State Use Only:**

<b>6. Date Received by State:</b> <input type="text"/>	<b>7. State Application Identifier:</b> <input type="text"/>
--	--

**8. APPLICANT INFORMATION:**

**\* a. Legal Name:** Harris County Flood Control District

<b>* b. Employer/Taxpayer Identification Number (EIN/TIN):</b> 74-6019452	<b>* c. Organizational DUNS:</b> 1740797560000
--	---

**d. Address:**

**\* Street1:** 9900 Northwest Freeway  
**Street2:**   
**\* City:** Houston  
**County/Parish:**   
**\* State:** TX: Texas  
**Province:**   
**\* Country:** USA: UNITED STATES  
**\* Zip / Postal Code:** 77092-8601

**e. Organizational Unit:**

<b>Department Name:</b> <input type="text"/>	<b>Division Name:</b> <input type="text"/>
---	---

**f. Name and contact information of person to be contacted on matters involving this application:**

**Prefix:** Ms. **\* First Name:** Dena  
**Middle Name:**   
**\* Last Name:** Green  
**Suffix:**

**Title:** Feasibility Studies Department Manager

**Organizational Affiliation:**  
Harris County Flood Control District

**\* Telephone Number:** 713-684-4252 **Fax Number:**

**\* Email:** Dena.Green@hcfcd.org

**Application for Federal Assistance SF-424**

**\* 9. Type of Applicant 1: Select Applicant Type:**

D: Special District Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

\* Other (specify):

**\* 10. Name of Federal Agency:**

Federal Emergency Management Agency

**11. Catalog of Federal Domestic Assistance Number:**

CFDA Title:

**\* 12. Funding Opportunity Number:**

FEMA-4332-DR-TX

\* Title:

San Jacinto River Regional Watershed Study

**13. Competition Identification Number:**

Title:

**14. Areas Affected by Project (Cities, Counties, States, etc.):**

Add Attachment

Delete Attachment

View Attachments

**\* 15. Descriptive Title of Applicant's Project:**

San Jacinto River Regional Watershed Study

Attach supporting documents as specified in agency instructions.

Add Attachments

Delete Attachments

View Attachments

**Application for Federal Assistance SF-424**

**16. Congressional Districts Of:**

\* a. Applicant

\* b. Program/Project

Attach an additional list of Program/Project Congressional Districts if needed.

**17. Proposed Project:**

\* a. Start Date:

\* b. End Date:

**18. Estimated Funding (\$):**

* a. Federal	<input type="text" value="1,875,000.00"/>
* b. Applicant	<input type="text" value="625,000.00"/>
* c. State	<input type="text"/>
* d. Local	<input type="text"/>
* e. Other	<input type="text"/>
* f. Program Income	<input type="text"/>
* g. TOTAL	<input type="text" value="2,500,000.00"/>

**\*19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- a. This application was made available to the State under the Executive Order 12372 Process for review on
- b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- c. Program is not covered by E.O. 12372.

**\* 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

Yes  No

If "Yes", provide explanation and attach

21. \*By signing this application, I certify (1) to the statements contained in the list of certifications\*\* and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances\*\* and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

\*\* I AGREE

\*\* The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

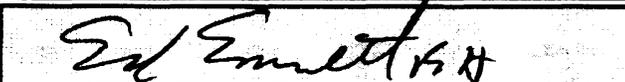
**Authorized Representative:**

Prefix:  \* First Name:   
Middle Name:   
\* Last Name:   
Suffix:

\* Title:

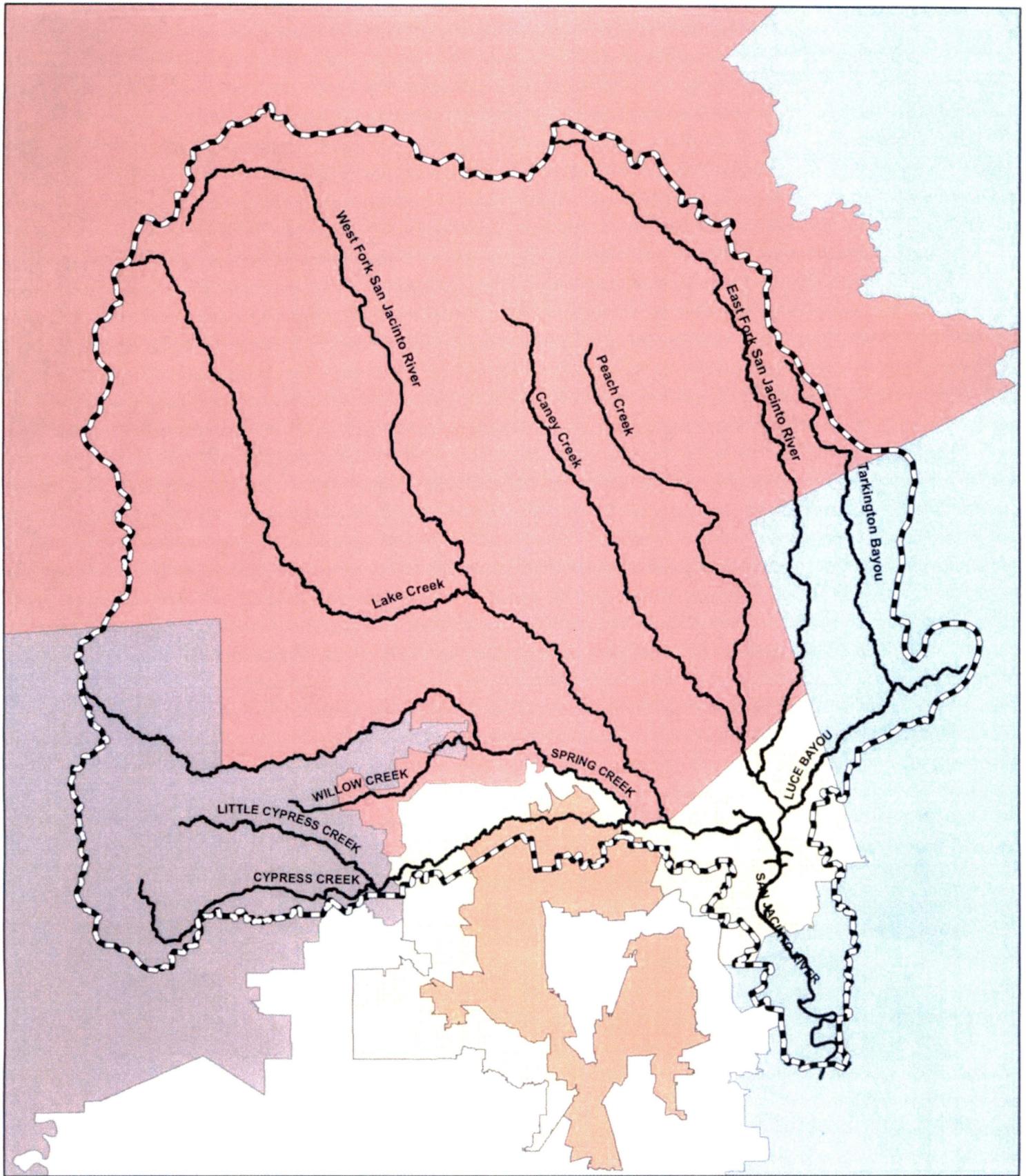
\* Telephone Number:  Fax Number:

\* Email:

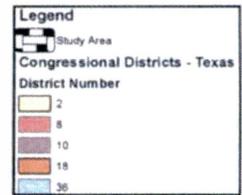
\* Signature of Authorized Representative: 

\* Date Signed:

APR 10 2018



**San Jacinto River Regional Watershed Study  
Congressional Dist: 2, 8, 10, 18, 36**



# TEXAS DEPARTMENT OF PUBLIC SAFETY

5805 N LAMAR BLVD • BOX 4087 • AUSTIN, TEXAS 78773-0001

512/424-2000

[www.dps.texas.gov](http://www.dps.texas.gov)



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A. CYNTHIA LEON  
JASON K. PULLIAM  
RANDY WATSON

March 16, 2018

Mr. Russell Poppe P.E.  
Executive Director  
Harris County Flood Control District  
9900 Northwest Freeway  
Houston, TX 77095  
[Russell.Poppe@hcfcd.org](mailto:Russell.Poppe@hcfcd.org)

Re: DR-4332 Notice of Intent DR-4332-58 – Harris County Flood Control District (HCFCD)

Dear Mr. Poppe:

This letter is in response to the Notice of Intent (NOI) for DR-4332 Hurricane Harvey Hazard Mitigation Grant Program (HMGP) funding, dated March 13, 2018, for the San Jacinto River Watershed Study.

The Texas Division of Emergency Management (TDEM), in coordination with the Federal Emergency Management Agency (FEMA), reviewed the NOI. The project has been identified as meeting funding priorities, and we support the submission of an application for funding under the HMGP for DR-4332. Please submit a completed HMGP application at your earliest convenience. TDEM and FEMA mitigation staff are available to answer any questions you may have or provide technical assistance to assist in the development of the application.

When the completed application is received, it will be reviewed jointly by TDEM and FEMA to verify that all essential aspects of the project have been addressed, and to ensure compliance with the HMGP program guidelines relevant to the project.

Please contact TDEM Mitigation staff at 512-377-0023 or by email at [TDEM-Mitigation@dps.texas.gov](mailto:TDEM-Mitigation@dps.texas.gov).

Respectfully,

A handwritten signature in black ink, appearing to read "W. Nim Kidd".

**W. Nim Kidd, CEM<sup>®</sup>**

Governor's Authorized Representative, DR-4332-TX  
Chief, Texas Division of Emergency Management  
Division Director, Texas Department of Public Safety

cc: Ed Emmett, Harris County Judge  
Dena Green, HCFCD Feasibility Studies Dept.

## ASSURANCES - CONSTRUCTION PROGRAMS

OMB Number: 4040-0009  
Expiration Date: 01/31/2019

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.

**PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.**

**NOTE:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progressive reports and such other information as may be required by the assistance awarding agency or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards of merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681 1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.
14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.
20. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL 	TITLE Executive Director
APPLICANT ORGANIZATION Harris County Flood Control District	DATE SUBMITTED 4/3/2018

## ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

**PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.**

**NOTE:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee- 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
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9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.
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14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.
19. Will comply with the requirements of Section 106(g) of the Trafficking Victims Protection Act (TVPA) of 2000, as amended (22 U.S.C. 7104) which prohibits grant award recipients or a sub-recipient from (1) Engaging in severe forms of trafficking in persons during the period of time that the award is in effect (2) Procuring a commercial sex act during the period of time that the award is in effect or (3) Using forced labor in the performance of the award or subawards under the award.

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