



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.

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.
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.

Project Eligibility - Continued

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)
8. FEMA Form Certifications Regarding Lobbying
9. FEMA Form Disclosure of Lobbying Activities

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)
13. FEMA Form Certifications Regarding Lobbying (also includes Debarment, Suspension and Other Responsibility Matters; and Drug Free Workplace Requirements)
14. FEMA Form Disclosure of Lobbying Activities (Complete to disclose lobbying activities pursuant to 31U.S.C.1352)

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: Fort Bend County

Address: 401 Jackson Street

City: Richmond County: Fort Bend State: TX Zip: 77469

Primary Contact Name: Doug Barnes Title: Deputy

Email: Douglas.Barnes@fortbendcountytexas.gov Office Phone: (281) 238-3417 Cell: (832) 361-9994

Secondary Contact Name: _____ Title: _____

Email: _____ Office Phone: _____ Cell: _____

Check One:

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

Tax ID #: 74-6001969 DUNS #: 081497075 FIPS Code: 157
(Data Universal Numbering System)

State Legislative House District(s): 26 State Legislative Senate District(s): 18

Congressional House District(s): 22

National Flood Insurance Program (NFIP) Community Identification #: 480228
(This number can be obtained from the FIRM map for your area)

NFIP Community Rating System Class # (if available): _____

PROJECT INFORMATION

Project Title: Harlem Road Elevation

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.

Harlem Road is located in Fort Bend County, Texas north of Highway 90 and west of Grand Parkway (SH 99). During Hurricane Harvey in September 2017, a section of Harlem Road was closed to traffic for over 24 hours due to flooded conditions. The section of Harlem Road that was inundated ranged from just north of the intersection of Harlem Road and Highway 90 (Tech Memo site photo 1) and continued north (Tech Memo site photo 2, Tech Memo site photo 3). The closure resulted in an approximate 11.4 mile detour and impacted emergency responders and disrupted travel for an estimated 10,000 vehicles per day (Tech Memo Figure 1). The proposed infrastructure project will address this flooding hazard by installing four additional culverts that will convey the 100-year (yr) flood and by raising an approximate 800 foot section of Harlem Road to an elevation of 81.75ft above the NAVD88 datum (Tech Memo Figure 3).

The project will include the design of the elevated road and additional culverts, which involves hydraulic modeling and analysis, contracting, two phases of construction, and project management and close out. The two phases of construction would be scheduled such that only one side of Harlem Road is closed at a time, which allows normal use of the road and avoids the need for a detour.

Federal Emergency Management Agency (FEMA) flood plain mapping and modeling show that the water surface elevation (WSEL) near Harlem Road during the 100-yr flood event is 80.74ft, also known as the base flood elevation (BFE), and that Harlem Road lies within this 100-yr flood plain (Tech Memo Figure 2). Based on review of drone footage provided by Fort Bend County and construction plans of Harlem Road, it was determined that the WSEL during Hurricane Harvey exceeded the BFE by approximately 0.03ft. The proposed project will install four additional 30 inch diameter reinforced concrete pipes (RCP) to convey the projected flow experienced during a 100-year event. The construction of the additional culverts will ensure that the next flood event similar to Hurricane Harvey, which was greater than the BFE, will be conveyed under Harlem Road and traffic can continue as usual. The road will be raised to the BFE (80.74ft) plus a foot of freeboard for a total elevation of 81.74ft. Elevating this section of Harlem Road to 81.74ft provides a level of safety of approximately a foot above the estimated flooding elevation during Hurricane Harvey and allows for the safe conveyance of larger events. Major milestones for the project include final engineering designs, permitting, construction site preparation, phase I of construction, phase II of construction, culvert construction, and project close out.

The project will include the design of the elevated road and additional culverts, which involves hydraulic modeling and analysis, contracting, two phases of construction (including culvert construction and project management and close out. The two phases of construction would be scheduled such that only one side of Harlem Road is closed at a time, which allows normal use of the road and avoids the need for a detour.

Major milestones for the project include final engineering designs, permitting, construction site preparation, phase I of construction, phase II of construction (including culvert construction), and project close out. The specific activities associated with these steps can be found in the Budget Worksheet, Outcome, Level of Effort and Milestones section below and the attached Technical Memo.

NOTE: Total materials and equipment costs were derived from TX DOT Houston average low bid units prices and budget includes labor costs.

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.

Federal Emergency Management Agency (FEMA) flood plain mapping and modeling show that the water surface elevation (WSEL) near Harlem Road during the 100-yr flood event is 80.74ft, also known as the base flood elevation (BFE), and that Harlem Road lies within this 100-yr flood plain (Tech Memo Figure 2). Based on review of drone footage provided by Fort Bend County and construction plans of Harlem Road, it was determined that the WSEL during Hurricane Harvey exceeded the BFE by approximately 0.03ft. The proposed project will install four additional 30 inch diameter reinforced concrete pipes (RCP) to convey the projected flow experienced during a 100-year event. The construction of the additional culverts will ensure that the next flood event similar to Hurricane Harvey, which was greater than the BFE, will be conveyed under Harlem Road and traffic can continue as usual. The road will be raised to the BFE (80.74ft) plus a foot of freeboard for a total elevation of 81.74ft. Elevating this section of Harlem Road to 81.74ft provides a level of safety of approximately a foot above the estimated flooding elevation during Hurricane Harvey and allows for the safe conveyance of larger events.

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.

Final Engineering Designs: \$94,472.54
Environmental Permitting and Outreach/Input: \$28,561.46
Bidding: \$10,252.83
Construction Site Preparation: \$203,373.28
Phase I Construction: \$523,224.06
Phase II Construction: \$523,224.06
Project Close Out: \$337,171.75

Costs above include Project Management. Total PM costs: \$105,457.72

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.	Final Engineering Designs	Month 1	6 months
2.	Environmental Permitting	Month 2	6 months
3.	Bidding	Month 8	2 months
4.	Construction Site Preparation	Month 10	2 months
5.	Phase I Construction	Month 12	3 months
6.	Phase II Construction (including culvert construction)	Month 15	3 months
7.	Project Close Out	Month 24	2 months
8.		Month #	# Mos to Comp
9.		Month #	# Mos to Comp
10.		Month #	# Mos to Comp

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.

Fort Bend County Engineering Department will be the primary department managing the Harlem Road Elevation project. Stacy Slawinski, Assistant County Engineer - Project, will serve as the overall project manager and Richard Stolleis, County Engineer, will support. The project will require Fort Bend County to engage an outside engineering consultants for the purpose of project management, project design, bidding, and construction monitoring services. All design and construction work will publicly bid with the expectation that the work will be completed by private contractors. The project will also require coordination with the Union Pacific Railroad as a portion of the project adjoins their facilities.

Damage History - Overview of Past Damage:

Provide a detailed past history of damages in the project area including approximate costs. Include information for Presidential 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
08/30/17	20-year	Road closures	\$ 3,379,668.00

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: 29.60049 Longitude: -95.79693

Description:

Harlem Road is located in Fort Bend County, Texas north of Highway 90 and west of Grand Parkway (SH 99). During Hurricane Harvey in September 2017, a section of Harlem Road was closed to traffic for over 24 hours due to flooded conditions. The section of Harlem Road that was inundated ranged from just north of the intersection of Harlem Road and Highway 90 (Tech Memo Site Photo 1) and continued north (Tech Memo Site Photo 2, Site Photo 3).

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.

- 13,610 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
- 13,610 Other (List): Vehicles per day

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 application, if any:

- | | |
|---|---|
| <input checked="" type="checkbox"/> Photographs | <input checked="" type="checkbox"/> Engineering Designs (including calculation and quantity determinations) |
| <input type="checkbox"/> Sketches/Drawings | <input type="checkbox"/> 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.

BUDGET INFORMATION

Please complete the Budget Worksheet attachment by following the attached "Budget Worksheet Instructions". You can access the attachment by clicking on the paper clip on the left side of the form.

Once the budget has been completed, provide the following information from the worksheet:

(Note: Enter numbers only (no \$ or comma's) as the fields is automatically formatted)

Total Project Costs:	<u>\$ 1,720,278.00</u>
Applicants Cost Share:	<u>\$ 430,069.00</u>
Federal Amount:	<u>\$ 1,290,209.00</u>

Reminder: Applicant must include the Budget Worksheet when submitting the application

BENEFIT COST ANALYSIS

Applicants must demonstrate mitigation projects are cost effective. The Benefit Cost Tool Version 5.3 is used to perform benefit cost analysis for applications submitted under FEMA's Hazard Mitigation Assistance Grant Programs. To use this tool, you must first download the file from the website (see link below). If you have any questions about the new BCA software program, please contact the BC Helpline at bchelp@dhhs.gov or at 1-855-540-6744.

<https://www.fema.gov/media-library/assets/documents/128334>

Once the BCA has been completed, provide following information from the BCA:

(Note: Enter numbers only (no \$ or comma's) as the fields is automatically formatted)

Total Project Cost:	<u>\$ 1,720,278.00</u>
Total Value of Project Benefits:	<u>\$ 1,988,040.00</u>
Benefit Cost Ratio:	<u>1.22</u>

Reminder: Applicant must include a zip file of the BCA when submitting the application

BCA Exceptions

- **Acquisition Projects** - The acquisition of structures that are declared Substantially Damaged (from any origin) and located in a riverine Special Flood Hazard Area (SFHA) on a preliminary or effective FIRM is considered cost effective.
- **Residential Safe Room Projects** - The pre-calculated benefit provides standardized Benefit-Cost Analysis (BCA) benefit values associated with residential safe rooms so that individual BCAs are not required, as long as the project costs do not exceed \$5,421.32 (in Texas).
- **Acquisition and Elevation Projects** - The national average for benefits for acquisition and elevation projects is \$276,000 for acquisition projects and \$175,000 for elevation projects. **FEMA determined the acquisition or elevation of a structure located in the 100-year floodplain for which costs are equal to or less than the amount of benefits noted above is cost effective.** For projects that contain multiple structures, the average cost of all structures in the project must meet this criterion. There is no need for recipients to conduct a separate BCA for a structure that meets this criterion.
- A wind retrofit project is considered cost effective as long as the total project costs are less than the costs listed below:

<u>Mitigation Package Type</u>	<u>Roof Replacement Project</u>	<u>Maximum Costs</u>
Intermediate Protection	No	\$13,153
Intermediate Protection	Yes	\$24,920
Advanced Protection	No	\$40,252
Advanced Protection	Yes	\$52,018

CERTIFICATION AND SIGNATURE OF AUTHORIZED AGENT FORM

The Chief Elected Official (jurisdiction) or Executive Director (non-jursdiction) 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)

Fort Bend County

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

Harlem Road Elevation

To certify, please check the boxes and sign below:

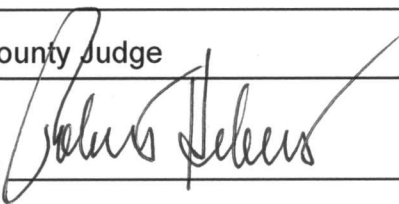
- ☒ The undersigned will ensure all State and Federal requirements related to the HMGP funding are fulfilled.
- ☒ The undersigned understands that the jurisdiction/non-jursdiction applying for this grant is liable for the required matching funds (local share) related to the project listed above.
- ☒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

Signature of the Authorized Agent

Name: Robert Hebert

Title: County Judge

Signature:



Date: 8-28-2018

FLOODPLAIN MANAGER AUTHORIZATION FORM

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

Date: 08/28/18

Sub-Applicant: Fort Bend County

Disaster Declaration: FEMA 4332-DR-TX

Project Title: Harlem Road Elevation

Project Number (if known): _____

Floodplain Manager Contact Information:

Name: Richard Stolleis Title: County Engineer

Organization: Fort Bend County

Address: 301 Jackson Street

City: Richmond State: TX Zip: 77469

Email: richard.stolleis@fortbendcountytexas.gov Office Phone: _____ Cell: _____

Floodplain Manager Certification Information:

CFM Certification Number: _____

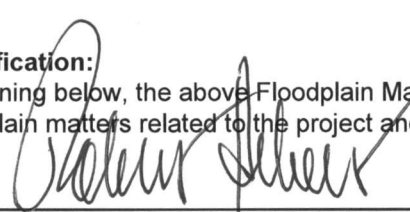
If not a CFM, please enter the date of attendance for:

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


Signature of Authorized Official/Project Officer

8-28-2018
Date

Robert Hebert

County Judge

Printed Name

Title

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

SUBMITTAL INSTRUCTIONS:

- Review the application and ensure all questions are answered and all documents are attached. Below is the minimum required documentation. **Note:** This is not an all inclusive list since requirements may vary depending on project type and the subgrantee.
 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. FIRM Map(s) 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)
- Upon completion of the application, save your file by clicking the Save As button below and name your file with the following structure:

Disaster# Grant - Jurisdiction/Organization Name - Project Type

Example: 4332 HMGP - Test, City of - Generator

Save As

- Submit completed application via email by clicking on this link: [**TDEM-Mitigation@dps.texas.gov**](mailto:TDEM-Mitigation@dps.texas.gov)



MEMORANDUM

To: Fort Bend County Staff

Date: 8/9/2018

From: Troy Dorman, Jenn Lenart --
Tetra Tech

Subject: Harlem Road Elevation BCA
Results (DR-4332, HMGP)

1.0 INTRODUCTION

Fort Bend County, Texas is submitting a Hazard Mitigation Grant Program (HMGP) application for funding available under DR-4332 for a flood prevention project called: Harlem Road Elevation. This project will address the flooding hazard by installing four additional culverts that will adequately convey the 100-year (yr) Return Interval flood along with the raising of an approximate 800-foot section of Harlem Road. The principle asset at risk within the project area is an 800-foot section of Harlem Road that falls within the Federal Emergency Management Agency (FEMA) 100-year floodplain and was inundated during Hurricane Harvey (Attachment A).

1.1 PURPOSE AND BACKGROUND

Harlem Road was closed to traffic for over 24 hours (approximately 2 days, according to Fort Bend County staff) during the Hurricane Harvey event due to rising water from the Brazos River. Harlem Road is classified as a major thoroughfare on the County's Major Thoroughfare Plan because it has a traffic volume of over 13,000 vehicles per day under normal conditions (Attachment B). Road closures on SH 99, FM 359, and FM 723 forced higher traffic volumes onto Harlem Road during Hurricane Harvey. However, once Harlem Road was closed, drivers were required to detour approximately 11.4 miles, severely impacting mobility within the County.

2.0 BCA DATA DOCUMENTATION

The analysis was performed by Jenn Lenart of Tetra Tech, Inc. under contract with Fort Bend County, TX. The damage frequency module of BCAR version 5.3.0 was utilized for this analysis. This memorandum has been prepared to explain and document those BCAR data entries that require an explanation and citation of data source, and acts as a guide for the technical review of this benefit-cost analysis.

2.1 HAZARD AND MITIGATION DATA

The hazard type selected for this assessment was flood, and the mitigation type selected was elevation. The basis for expected damages generated in this report was provided by two historical events (2016 and 2017). Only the latter event (i.e., Hurricane Harvey) caused inundation of Harlem Road at the location of interest.

2.2 COST ESTIMATION INFORMATION

The overall costs reflect current 2018 prices. A breakdown of these prices has been provided by the project engineers.

2.2.1.1 Project Useful Life

The analyst utilized a project useful life of 50-years for this project. FEMA Guidance provides recommendations for concrete infrastructure projects, but not specifically for road elevation projects. The FEMA Guidance suggests a range from 35-50 years for road infrastructure projects and the Project Engineers recommend that the useful life of the road elevation is around 50-years. Therefore, 50-years was incorporated into the analysis.

2.2.1.2 Mitigation Project Costs

A detailed project cost and scope of work has been provided and can be found in the Budget Worksheet and Technical Memo associated with the HMGP application.

2.2.1.3 Annual Maintenance Cost

According to Fort Bend County and the Project Design Engineer, this project will require little or no post-construction maintenance. However, to support the concept of a lower bound analysis, the analyst included a value of \$1,000/year under the assumption that county and city staff will need to monitor the project area periodically during high flow events to confirm project functionality over time. This \$1,000 was based on an estimate of 25 hours at \$40/hour.

2.3 TYPES OF SERVICES

The "roads/bridges" option was selected. The focus of this analysis was about reduction in road closures due to flood inundation in the project area. According to County Staff, the inundation event that occurred during Hurricane Harvey at Harlem Road caused the road to close for two days. Over 13,000 (approximately 13,610) one-way traffic trips needed to take an 11.4-mile detour to reach US HWY 90A.

The standard Federal Rate (i.e., \$0.540) was used in this analysis to determine the economic loss per day of loss of function.

2.4 EXPECTED DAMAGES BEFORE MITIGATION

The analysis year selected for the BCA is 2018. According to the Project Engineers and County Staff, this section of Harlem Road was built in 2014. The total focus of this analysis is the expected impacts for road closures due to flooding inundation if the problem is left unmitigated. There is only one event that shows historical damages associated to the closure of Harlem Road to support a damage frequency analysis. Therefore, the analyst chose to look into the future and ask the following question: "Based on what we know from the past, what damages could we expect to happen if nothing is done to mitigate future road closures?"

Based on best available data, the project analyst utilized Fort Bend County's 2014 Flood Insurance Study to determine the Return Interval (RI) for two events (i.e., flooding in 2016 and Hurricane Harvey in 2017). The flooding source and location closest to Harlem Road is the Brazos River at US 90A (Figure 1).

Figure 1. Screenshot of Table from Fort Bend County's Flood Insurance Study. Highlighted row indicates the data used in this analysis to determine the RIs of the 2016 event and Hurricane Harvey.

TABLE 5 – SUMMARY OF DISCHARGES

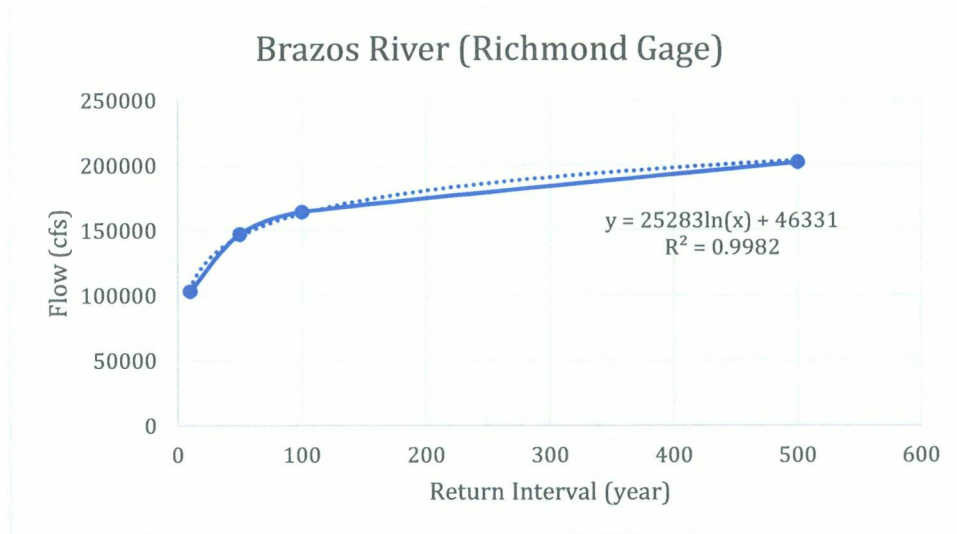
FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (CFS)			
		10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
ALCORN BAYOU					
Approximately 0.47 mile upstream of confluence with Brazos River	1.20	*	*	579	*
BRAZOS RIVER					
At the Brazoria / Fort Bend County Line	*	103,000	145,000	162,000	200,000
At US 90A (Richmond Gage)	35,541	103,000	147,000	164,000	202,000
Just upstream of FM 723	*	103,400	148,500	165,700	201,100
Just upstream of FM 1093	*	103,900	150,600	168,000	206,900
At the Waller / Fort Bend County line	*	105,400	153,900	171,700	211,500
BULLHEAD BAYOU					
At US 90A	N/A	*	*	2,191	*
CANE ISLAND BRANCH					
At River Mile 0.0	26.35	3,529	5,874	7,209	10,451
At River Mile 0.9	25.90	3,318	4,498	5,172	6,768
At River Mile 1.2	25.41	3,192	3,794	4,135	4,962
* Data not computed					

* Data not computed

County Staff and a technical analysis performed by the Project Engineers created a trendline using Figure 1 to determine the flood extents of the 2016 and Hurricane Harvey events at Harlem Road (Equation 1, Figure 2).

Equation 1. $y = 25283\ln(x) + 46331$, y = Flow (CFS), x = Return Interval (year)

Figure 2. Trendline derived from the Fort Bend County FIS data.



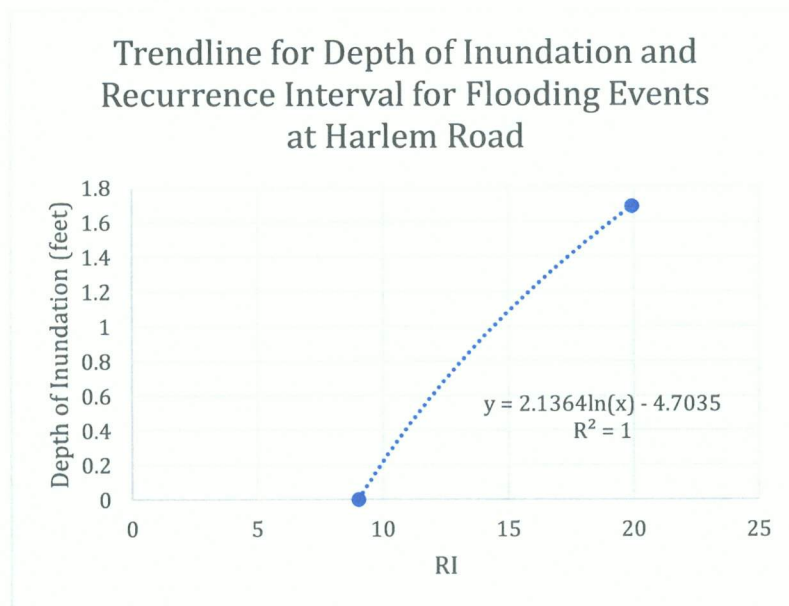
The trendline output from Fort Bend County's FIS indicates that the 2016 event was around a 9-year flood event and that Hurricane Harvey was around a 20-year flood event. Then, the analyst utilized gage data to calculate the depth of inundation at the road centerline to determine a relationship between depth of inundation and road closures. According to the gage readings at USGS Gage 0811400 in the Brazos River at Richmond, TX, the elevation of the 2016 flood was 81.76 ft and the elevation of the flood from Harvey was 82.21 ft. Next, the analyst adjusted for the height difference between the centerline of the road (i.e., 80.30 ft) and the USGS Gage water levels (i.e., 80.52 ft) to determine the depth of inundation (i.e., 80.52 ft – 80.30 ft = 0.22 ft). Since Harlem Road did not flood during the 2016 event according to County staff, the depth of inundation was 0. Equation 2 was used to determine the depth of inundation Harlem Road experienced during Hurricane Harvey:

Equation 2. 82.21 ft (flood elevation of Harvey) – 80.3 ft (road centerline elevation) – 0.22 ft (difference between road centerline height and USGS Gage water levels) = 1.69 ft

Next, a trendline was created using the relationship between the number of known days Harlem Road was closed and the depth of inundation associated with these closures to determine the number of expected days Harlem Road would be closed for various flood extents (Equation 3, Figure 3):

Equation 3. $y = 2.1364\ln(x) - 4.7035$; y = depth of inundation (ft), x = RI

Figure 3. Expected depth of inundation at Harlem Road based on historical events and known road elevation.



Since Hurricane Harvey was the first time Harlem Road was flooded, the analyst assumed that this event could be used to determine a depth of inundation to length of closure ratio to model expected length of closures for additional flood extents (i.e., 1.69 ft / 2 days = 1.18 ft / day). Knowing that the road has only flooded for Hurricane Harvey, and Harvey was a 20-year flood event, only flood extents greater than a 20-year event and their associated closures were used in the BCA analysis. The chosen RIs for this project are summarized in Table 1.

Table 1. RIs chosen for the BCA. Note that the 20-year event represents Hurricane Harvey.

RI	Pre-Mitigation
	Days Closed
20	2
25	2.6
30	3
35	3.4

2.5 DAMAGES AFTER MITIGATION

Since the project engineers stated that Harlem Road would be raised to mitigate the 100-year flood, all events used in the BCA were assumed to be completely mitigated because they are less than 100-years.

3.0 LOWER BOUND ANALYSIS

Reviewers of this memorandum should clearly understand that all facets of this analysis were performed following a lower-bound approach to benefit-cost analyses. A lower-bound approach is when an analyst purposely does not count eligible benefits in an analysis. The premise behind this approach is that if a project is determined to be cost effective following a lower-bound approach, you know the project is cost-effective and could likely absorb changes in costs or scope of the project. For this analysis, the following eligible benefits were not taken in to account:

- Potential damages associated with utility closures.
- Potential economic losses associated with hay pasture on property adjacent to road.

4.0 RESULTS

The resulting aggregate BCR for this project is **1.22**.

DOCUMENT PATH: C:\FORTBEND\HMPR_DELIVERABLES\67_HARLEM ROAD ELEVATION\GIS\MXD FILES\67_HARLEM RD_ELEVATION.MXD



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



TBPE FIRM NO. F-3924
www.tetrattech.com
700 N. SAINT MARY'S STREET, STE. 300
SAN ANTONIO, TEXAS 78205
PH 210.299.7900



FORT BEND COUNTY, TEXAS
EMERGENCY MANAGEMENT
307 FORT STREET
RICHMOND, TEXAS 77469

FORT BEND COUNTY - EMERGENCY MANAGEMENT - HURRICANE HARVEY HMGP GRANT
APPLICATION SERVICES FOR 15 INFRASTRUCTURE PROJECTS UNDER DR-4332-TX.

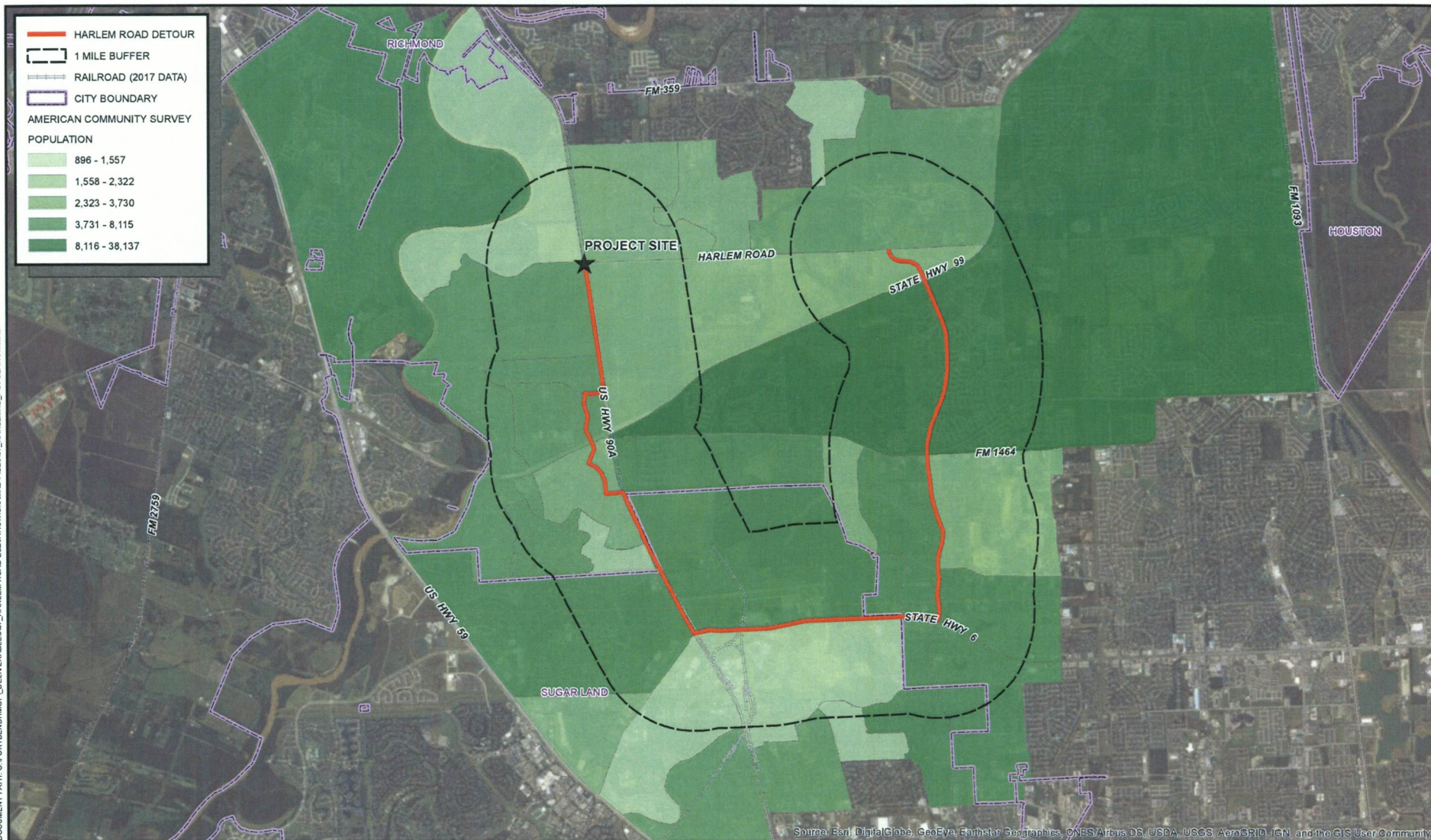
NOI 67 - HARLEM ROAD ELEVATION - SITE PLAN

NAD 1983 STATE PLANE TEXAS SOUTH CENTRAL FIPS 4204 FT

EXHIBIT

X

DOCUMENT PATH: O:\FORTBENDHMP\DELIVERABLES\67_HARLEM ROAD ELEVATION\GIS\MDX FILES\67_HARLEM RD_POPULATION.MXD



TBPE FIRM NO. F-3924
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SAN ANTONIO, TEXAS 78205
PH 210.299.7900



FORT BEND COUNTY, TEXAS
EMERGENCY MANAGEMENT
307 FORT STREET
RICHMOND, TEXAS 77469

FORT BEND COUNTY - EMERGENCY MANAGEMENT - HURRICANE HARVEY HMP GRANT
APPLICATION SERVICES FOR 15 INFRASTRUCTURE PROJECTS UNDER DR-4332-TX.
NOI 67 - HARLEM ROAD ELEVATION - US CENSUS DATA
NAD 1983 STATE PLANE TEXAS SOUTH CENTRAL FIPS 4204 FT

EXHIBIT
X

APPLICANT INFORMATION

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

Name of Organization:	Fort Bend County
Project Title:	Harlem Road Elevation Project

BUDGET SUMMARY

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

Materials and Equipment Total	\$1,318,221.45
Labor Costs Total	\$0.00
Other Costs Total	\$402,057.54
Project Total	\$1,720,278.99
Federal Percentage	75%
Federal Amount	\$1,290,209.24
Non-Federal (local Match) Percentage	25%
Local Match Amount	\$430,069.75

\$1,720,278.99

Name of Organization:	Fort Bend County
Project Title:	Harlem Road Elevation Project

Materials and Equipment Costs

[illegible]

Name of Organization:	Fort Bend County
Project Title:	Harlem Road Elevation Project

Materials and Equipment Costs

[illegible]

Name of Organization:	Fort Bend County
Project Title:	Harlem Road Elevation Project

Labor Costs

[illegible]

Name of Organization:	Fort Bend County
Project Title:	Harlem Road Elevation Project

Labor Costs

[illegible]

Name of Organization:	Fort Bend County
Project Title:	Harlem Road Elevation Project

Other Costs (including fees paid and other project costs)[illegible]

Name of Organization:	Fort Bend County
Project Title:	Harlem Road Elevation Project

Other Costs (including fees paid and other project costs)[illegible]

Cost Estimate Import

TDEM STAFF INSTRUCTIONS :
 THIS WORKSHEET IS AUTO-POPULATED FROM THE THREE COLORED TABS (MATERIALS & EQUIPMENT, LABOR COST AND OTHER COSTS). THE ONLY ACTION YOU CAN DO IS TO DELETE ROWS (see #2 below).

1. Check the Overall Total to make sure it matches the Total on the Budget Summary Page.
 Look at the blue box next to the Overall Total, if it is not \$0.00 there is an error between each sheet.
 Research the error and contact the applicant if change is needed.
2. Scroll down the list. The Red highlights indicate a field was left blank or 0.
 Ensure the information is correct. If correct, you can delete the Red rows to make import into NEMIS easier.
3. When copying the informaiton below into NEMIS you will select the all rows and columns without highlighting (Item/Description, Quantity, Unit of Measure and Cost Per Unit).

CHECK
 If number below is not 0
 there is an error

OVERALL TOTAL (should match total on Summary)	\$1,720,278.99	\$0.00
---	-----------------------	---------------

Item/Description	Quantity	Unit of Measure	Cost Per Unit	Total Cost	From Worksheet
	100	8.0536 STA	\$1,741.35	\$14,024.14	M&E
	104	318.33302 SY	\$6.50	\$2,069.50	M&E
	105	76767.368 SY	\$3.56	\$273,596.06	M&E
	132	10261.678 CY	\$11.61	\$119,127.82	M&E
	400	328.86367 CY	\$1.38	\$454.32	M&E
	402	165.12 LF	\$1.34	\$220.44	M&E
	403	1183.9104 SF	\$2.01	\$2,377.71	M&E
	452	200 LF	\$3.26	\$652.43	M&E
	152	8.0536 STA	\$171.38	\$1,380.26	M&E
	162	318.33302 SY	\$3.41	\$1,086.49	M&E
	164	5905.9674 SY	\$0.14	\$822.75	M&E
	260	76767.368 SY	\$2.70	\$207,647.82	M&E
	260	35.0175 TON	\$183.92	\$6,440.47	M&E
	292	2073.68 TON	\$72.06	\$149,423.29	M&E
	341	528.08 TON	\$87.45	\$46,180.91	M&E
	341	301.07 TON	\$87.07	\$26,213.41	M&E
	354	75958.924 SY	\$4.18	\$317,450.57	M&E
	450	200 LF	\$63.85	\$12,769.90	M&E
	450	2 EA	\$754.59	\$1,509.17	M&E
	529	411 LF	\$68.64	\$28,212.69	M&E
	530	2 EA	\$213.61	\$427.21	M&E
	464	370.24 LF	\$85.72	\$31,737.29	M&E
	662	680.6275 LF	\$0.28	\$189.63	M&E
	662	16.905 LF	\$2.55	\$43.18	M&E
	662	1149.1375 LF	\$0.28	\$320.17	M&E
	662	342.5275 LF	\$0.62	\$210.75	M&E
	662	684.6525 LF	\$0.66	\$453.04	M&E

Name of Organization:	Fort Bend County
Project Title:	Harlem Road Elevation Project

[illegible]

Name of Organization:	Fort Bend County
Project Title:	Harlem Road Elevation Project

[illegible]

Name of Organization: Fort Bend County

Project Title:	Harlem Road Elevation Project
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[illegible]

Name of Organization: Fort Bend County

Project Title:	Harlem Road Elevation Project
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[illegible]

Name of Organization: Fort Bend County

Project Title:	Harlem Road Elevation Project
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[illegible]

Name of Organization: Fort Bend County
Project Title: Harlem Road Elevation Project

[illegible]

Name of Organization:	Fort Bend County
Project Title:	Harlem Road Elevation Project

	0	0	0	\$0.00	\$0.00	Other
	0	0	0	\$0.00	\$0.00	Other
	0	0	0	\$0.00	\$0.00	Other
	0	0	0	\$0.00	\$0.00	Other
	0	0	0	\$0.00	\$0.00	Other
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	0	0	0	\$0.00	\$0.00	Other
	0	0	0	\$0.00	\$0.00	Other
	0	0	0	\$0.00	\$0.00	Other
	0	0	0	\$0.00	\$0.00	Other

Designation of Subrecipient Agent – Primary Contacts

Texas Department of Public Safety - Texas Division of Emergency Management

Subrecipient: Fort Bend County

Disaster Number(s): DR 4332

Grant Program: HMGP

Primary Agent

Serves as the primary point of contact for projects.

Name: Doug Barnes

Office Number: (281) 342-6185

Position/Job Title: Sr. Coordinator

Fax Number: (281) 342-4798

Organization/employer: Fort Bend County

Cell Number:

Email* doug.barnes@fortbendcountytexas.gov

The Primary Agent will have full GMS access

Secondary Agent

Serves as the secondary point of contact for projects.

Name: Mark Vogler

Office Number: (281) 342-2863

Position/Job Title: Drainage District Engineer

Fax Number:

Organization/employer: Fort Bend County

Cell Number:

Email* mark.vogler@fortbendcountytexas.gov

The Secondary Agent will have full GMS access

Primary Finance Agent

Serves as the primary point of contact for financial matters.

Name: Ed Sturdivant

Office Number: (281) 341-3760

Position/Job Title: County Auditor

Fax Number:

Organization/employer: Fort Bend County

Cell Number:

Email* ed.sturdivant@fortbendcountytexas.gov

The Primary Finance Contact will have full GMS access

Certifying Official

Serves as the official representative of the organization.

Must possess the authority to obligate funds & enter into contracts for the organization.

Name: Robert Hebert

Office Number: (281) 344-3994

Position/Job Title: County Judge

Fax Number:

Organization/employer: Fort Bend County

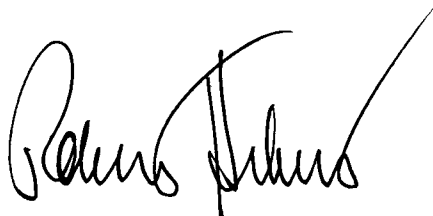
Cell Number:

Email* jenetha.jones@fortbendcountytexas.gov

GMS Access (pick 1) Full ☒ Read Only ☐ None ☐

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 & 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.

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



Robert Hebert, County Judge

8-28-2018

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)

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: Fort Bend County

Project Title: NOI 67 Harlem Road Elevation

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 project is expected to require regular roadway maintenance. Additional maintenance is not anticipated given that the project would raise the existing roadway profile approximately two (2) feet.

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: _____

☒ YES ☐ NO

2. Is this project located in a floodplain/floodway designated on a FEMA Flood Insurance Rate Map (FIRM)?

(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): 48157C0255L

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: The existing roadway was constructed in 2011.

☐ ☒ ☐ 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

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)

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

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

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)*

Future flooding at Harlem Road would be expected following rain fall similar to what occurred during Hurricane Harvey. The roadway would be expected to be closed to traffic for over 24 hours along this major thoroughfare. Closures would be expected to impact residents and emergency vehicles

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)*

The Proposed Action will address the flooding hazard that would be expected by the No Action Alternative by installing four additional culverts that will convey the 100-year (yr) flood and by raising an approximate 800 foot section of Harlem Road to an elevation of 81.75ft above the NAVD88 datum.

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.)*

NA

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: Robert Hebert

(Name of Authorized Official/Project Officer)

Title: County Judge

Signature: 

Date: 8-28-2018

Texas Water Development Board

P O Box 13231, 1700 N Congress Ave
Austin, TX 78711-3231, www.twdb.texas.gov
Phone (512) 463-7847, Fax (512) 475-2053

June 22, 2018

Sean Eglinton, P.E., CFM
Assistant County Engineer
Fort Bend County Engineering
301 Jackson Street
Richmond, Texas 77469

Re: Fort Bend County, Hazard Mitigation Grant Program Application

Dear Mr. Eglinton:

This is in response to your request on June 19, 2018, regarding Fort Bend County's Hazard Mitigation Grant Program application.

After review of the information provided, our findings indicate that, Fort Bend County is an active participant in the National Flood Insurance Program as verified on June 22, 2018. Fort Bend County is not listed as being on probation nor suspended from the Nation Flood Insurance program. Please ensure all project activities are in accordance with the local flood damage prevention court order requirements.

Thank you for bringing this matter to our attention.

Sincerely,



Michael Segner
State Coordinator, National Flood Insurance Program

NOI 67 Harlem Road Elevation Supporting Documentation for Environmental and Historical Required Information

June 22, 2018

PREPARED FOR

Fort Bend County
Doug Barnes
401 Jackson Street
Richmond, TX 77469
Tel 832-361-9994

PREPARED BY

Tetra Tech, Inc.
700 N. St. Mary's Street
Suite 300
San Antonio, TX 78205
Tel 210-299-7900
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INTRODUCTION

The following template follows Mitigation Job Aid #7: Instructions for Coordinating Environmental and Historical Preservation Compliance for HMGP Project Applications. The intent of this document is to support the EHP Checklist by detailing available data to ensure compliance with Federal environmental/historic preservation laws and Executive Orders.

ITEM 10. ENVIRONMENTAL AND HISTORICAL REQUIRED INFORMATION

1. A DISCUSSION OF EXISTING RESOURCES IN THE PROJECT AREA.

The project area (29.59927, -95.71357) is a five lane north/south road in Fort Bend County, Texas (Attachment 1 Project Area Map). Harlem Road was constructed in 2011 and is maintained by the County with vegetated easements on both the east and west sides. Approximately 1,150 feet north of Highway 90, outside the project area, the road crosses an unnamed intermittent stream that discharges to the Brazos River. As previously described, Harlem Road was closed for more than 24 hours following Hurricane Harvey during peak flood stage of the Brazos River. The closure required drivers and emergency responders to detour approximately 11.4 miles. The County considers Harlem Road a major thoroughfare and the closure severely impacted mobility in the County. Under normal conditions an estimated 10,000 vehicles per day use the Harlem Road. Prior to closure during Hurricane Harvey, Harlem Road was carrying significantly more traffic due to road closures on SH 99, FM 359, and FM 723.

2. AN ANALYSIS OF THE ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT AND ALTERNATIVES.

The proposed action alternative will address this flooding hazard by installing four additional culverts that will convey the 100-year (yr) flood and by raising an approximate 800-foot section of Harlem Road to an elevation of 81.75ft above the NAVD88 datum.

The no action alternative would leave Harlem Road at its current elevation. Closures of the road would be expected in the future under the no action alternative consistent with what occurred during Hurricane Harvey in 2017. Peak flood stage of the Brazos River closed Harlem Road for more than 24 hours. The closure required drivers and emergency responders to detour approximately 11.4 miles. As a major thoroughfare, the closure severely impacted mobility in the County, particularly because of other road closures in the area (SH 99, FM 359, and FM 723). Under normal conditions an estimated 10,000 vehicles per day use the Harlem Road and with other road closures significantly more traffic would have depended on this north/south thoroughfare. Therefore, the no action alternative would be expected to negatively affect the safety of residents during future flooding events because of limited access for emergency responders.

Elevating the existing roadway, along the current footprint, and adding additional culverts under the road would be expected to have no effect on environmental or cultural resources in the project area. Additional culverts would be installed to allow for peak flow events to flow under the road. Under current conditions the elevated roadway acts as a levee for high flows, holding back water and flooding land west (upstream) of Harlem Road.

The sections to follow detail the effects on the proposed action on environmental and cultural resources.

A. LAND USE AND SOCIOECONOMIC ISSUES:

1) *Determine whether or not the proposed project is consistent with land use in the area.*

Elevating the existing Harlem Road is consistent with current use of the project area.

2) *Identify and describe effects of the relocation of any structures due to the project.*

No structures will be relocated.

3) Describe how the project might have a significant effect on the economic activities of the area.

The project would allow emergency responders north/south access during flooding events in the area. Additional information on the effect on economic activities is included with the Benefit Cost Analysis (BCA) completed for this application.

4) Describe the project effects on any parks or recreational areas.

No effects on parks or recreational areas would be expected.

5) Does the proposed activity or project require a Coastal Zone Consistency Determination? Indicate how the project is consistent with the State coastal zone management plan.

A Coastal Zone Consistency Determination is not needed. The project area is outside the Coastal Zone Boundary defined by the Texas General Land Office.

6) Identify the project effects on any prime and unique farmlands, or farmlands with statewide or local importance.

The project would not be expected to affect prime or unique farmland. Under conditions similar to what occurred following Hurricane Harvey, farmland to the east of Harlem Road would still be expected to flood. The installation of culverts to alleviate road flooding would be expected to allow more water to flow downstream. No change in flooding of farmland to the east of the road would be expected with the proposed action alternative compared with the no action alternative.

7) Is the project located in a floodway or floodplain? If so, hydrologic analysis may be required. For documentation, attach a letter from the chief elected official or floodplain administrator stating that the community participates in the National Flood Insurance Program and that the requirements of your floodplain management ordinance will be implemented regarding this project; and if any structures will be built as part of the project, state what steps will be taken to ensure that the 100-year flood elevation requirements will be met.

The project is located in a floodway illustrated in the FIRM Panel 48157C0255L, Attachment 2 FIRMette Map. The Technical Memo prepared for this HMGP Application describes the hydrologic analysis completed for the project design.

B. AIR AND WATER QUALITY ISSUES:

1) What effect will the project have on air quality?

No long-term effects on air quality would be expected compared with the no action alternative. Increasing the elevation of the road would not affect normal traffic patterns. Short-term negligible effects would be expected from the operation of construction equipment to elevate the road.

2) Will the project require any dredging and/or disposal of any material (including construction) in any wetlands or waterways? Does the project require a Corps of Engineers (USACE) Section 11 and/or Section 404 permit? The Nationwide Permit Program under 33 CFR 330.5 automatically covers some activities. Those discharges not covered require more formalized authorizations. Please consult the regulation or call the appropriate Corps office for more information. NOTE: If you need to call the USACE office to obtain the above information, please provide the date and the name and phone number of the person contacted.

The project would not require dredging and/or disposal of any material in any wetlands or waterways. The addition of culverts under the existing road would be placed in intermittent channel. Culverts would be installed under the road to allow for peak flow events to flow under the road. Therefore, a USACE nationwide permit may be required. The USACE would be contacted following selection of this project at the State level. Attachment 3 illustrates the National Wetlands Inventory for the area effected by the proposed action alternative.

3) Describe the project scope of work activities that will modify streambeds and banks or remove streambed or bank material in the project area.

No project activities will occur in waters of the US.

4) How will the project affect any declared current wild and scenic river or any river being studied for inclusion as a wild and scenic river?

No wild and scenic rivers are located in the area effected by the proposed action alternative.

C. NATURAL RESOURCES ISSUES:

1) Describe the vegetation communities present in the project area, emphasizing the identification (species) and quantification (acreage) of dominant vegetation cover types (vegetation map of project area). Also, identify sensitive ecosystems which occur in the project area, such as springs, natural waterways, floodplains, riparian vegetation corridors, wetlands, bays, estuaries, native grasslands, etc.

The roadway easements are natural grasses that are mowed as regular roadway maintenance.

2) Describe areas within the project area defined as wetlands by the U.S. Army Corps of Engineers.

Attachment 3 illustrates the National Wetlands Inventory for the area effected by the proposed action alternative.

3) Describe the occurrence of threatened or endangered species (or their habitats) as listed by the U.S. Fish and Wildlife Service and the Texas Natural Heritage Program. The 'Green Book' published by the FEMA environmental staff for each disaster can be of great use in this.

No critical habitat exists in the project area. The US Fish and Wildlife Service Species List for the project area is included as Attachment 4.

4) Identify public use and open space areas in the vicinity of the proposed project, such as parks, natural areas, wildlife preserves and management areas, and designated wild and scenic areas. Identify areas of high recreational significance, such as hiking trails, river systems used by float or canoe enthusiasts, or areas known for high quality hunting and fishing.

Harlem Road Park, also known as Bob Lutts Park, is located approximately 2,000 feet north of the project area. Construction of the proposed action would not be expected to affect access or use of the park.

D. ARCHAEOLOGICAL AND HISTORICAL ISSUES:

1) Identify historical resources likely to be impacted by the proposed project.

The proposed action alternative would not be expected to affect historical resources. The existing road water constructed in 2011 and impacts to historical resources would have been mitigated at that time. Therefore, no effect would be expected to historical resources from the proposed action alternative.

2) Contact any local historical societies or authorities to determine if the project site is located in any area of archaeological, cultural, or historical significance.

NOTE: a letter from the State Historical Preservation Officer (SHPO) is required on all project applications, but should not be requested until the project is selected at the State level.

As noted, a letter from the SHPO would be obtained following selection of this project at the State level.

E. FOR ACQUISITION PROJECTS:

1) Describe the infrastructure in the area; typical lot size, type of wastewater discharge (septic or community plant), and neighborhood drainage method (none, roadside ditch, underground storm sewer, swales, and presence of retention features). Identify the type of local drainage systems the neighborhood systems discharge

into. (fully concrete lined, open channel with rock stabilization, sculpted grass lined channel, unmodified native stream)

No acquisitions would be required by the proposed action alternative. The project area includes an existing road and railroad. Adjacent land is used for agriculture.

2) Identify the degree of disturbance of occurring native vegetation, especially trees, and the degree to which residential landscaping has modified vegetation and landform throughout the community.

The landscaping will remain unchanged by the proposed action alternative. Under the proposed action alternative, the roadway will be maintained consistent with the no action alternative.

F. HAZARDOUS MATERIAL ISSUES:

1) Discuss any hazardous materials present including any underground storage tanks, hazardous building materials such as asbestos and lead that are present, or hazardous waste sites.

No hazardous materials would be expected to be present in the area of the proposed action alternative. The existing road water constructed in 2011 and the presence of hazardous materials would have been mitigated at that time.

G. PUBLIC INVOLVEMENT ISSUES:

Depending on the type of project, there may be minimal public notification (e.g., newspaper announcement) or there may be considerable public involvement (e.g., public hearings or town hall or neighborhood meetings). The level of public notification should be included in the documentation, including dates and copies of any notices.

No public notification has occurred as of June 2018, prior to the acceptance of this project in the HMGP at the State level.

ITEM 11. RECORD OF ENVIRONMENTAL CONSIDERATIONS

Project Name/Number: NOI 67 – Harlem Road Elevation

Project Location: 29.59927, -95.71357; Harlem Road north of the intersection with Highway 90 near Richmond, Texas

Project Description: The proposed action alternative will address this flooding hazard by installing four additional culverts that will convey the 100-year (yr) flood and by raising an approximate 800-foot section of Harlem Road to an elevation of 81.75ft above the NAVD88 datum (Attachment 1 Project Area Map).

I. COMPLIANCE REVIEW FOR ENVIRONMENTAL LAWS (OTHER THAN NEPA)**A. National Historic Preservation Act**

☒ Not type of activity with potential to affect historic properties. **(Review Concluded)**

HISTORIC BUILDINGS AND STRUCTURES

☒ No historic properties that are listed or 45/50 years or older in project area. **(Review Concluded)**

ARCHEOLOGICAL RESOURCES

☒ Project affects only previously disturbed ground. **(Review Concluded)**

Comments: The existing roadway, that would be elevated under the proposed action alternative, was constructed in 2011.

B. Endangered Species Act

☒ No listed species and/or designated critical habitat present in areas affected directly or indirectly by the Federal action. **(Review Concluded)**

C. Coastal Barrier Resources Act

☒ Project is not on or connected to CBRA Unit or Otherwise Protected Area **(Review Concluded)**.

D. Clean Water Act

☐ Project would not affect any waters of the U.S. **(Review Concluded)**

☒ Project would affect waters, including wetlands, of the U.S.

☐ Project exempted as in kind replacement or other exemption. **(Review Concluded)**

☒ Project requires Section 404/401/or Section 9/10 (Rivers and Harbors Act) permit, including qualification under Nationwide Permits.

Are project conditions required? ☐ YES (see section V) ☐ NO **(Review Concluded)**

Comments: A USACE nationwide permit may be required. The USACE would be contacted following selection of this project at the State level. The additional culverts would be installed adjacent to existing culverts as illustrated in the Technical Memo.

E. Coastal Zone Management Act

☒ Project is not located in a coastal zone area and does not affect a coastal zone area **(Review concluded)**

F. Fish and Wildlife Coordination Act

☒ Project does not affect, control, or modify a waterway/body of water. **(Review Concluded)**

Comments: The placement of culverts under the existing roadway would allow for water to travel downstream in the floodplain during peak flood events. The culverts would be placed outside of defined US waters in the floodplain.

G. Clean Air Act

☒ Project will not result in permanent air emissions. **(Review Concluded)**

H. Farmland Protection Policy Act

- ☒ Project does not affect designated prime or unique farmland. **(Review Concluded)**

I. Migratory Bird Treaty Act

- ☐ Project not located within a flyway zone. **(Review Concluded)**
- ☒ Project located within a flyway zone.
- ☒ Project does not have potential to take migratory birds. **(Review Concluded)**

J. Magnuson-Stevens Fishery Conservation and Management Act

- ☒ Project not located in or near Essential Fish Habitat. **(Review Concluded)**

K. Wild and Scenic Rivers Act

- ☒ Project is not along and does not affect Wild or Scenic River (WSR) - **(Review Concluded)**

L. Other Relevant Laws and Environmental Regulations

No additional relevant law or regulations were identified.

II. COMPLIANCE REVIEW FOR EXECUTIVE ORDERS**A. E.O. 11988 - Floodplains**

- ☐ No Effect on Floodplains/Flood levels and project outside Floodplain - **(Review Concluded)**
- ☒ Located in Floodplain or Effects on Floodplains/Flood levels
- ☐ No adverse effect on floodplain and not adversely affected by the floodplain. **(Review Concluded)**

Are project conditions required? ☐ Yes (see section V) ☐ No **(Review Concluded)**

- ☒ Beneficial Effect on Floodplain Occupancy/Values **(Review Concluded)**.

Comments: The proposed action alternative would be expected to have a beneficial effect on floodplain occupancy by allowing flood water to flow under the existing roadway. Under the no action alternative flood water is held to the east of Harlem Road and travels over the major thoroughfare causing road closures.

B. E.O. 11990 - Wetlands

- ☒ No Effects on Wetland(s) and project located outside Wetland(s) - **(Review Concluded)**

C. E.O. 12898 - Environmental Justice For Low Income and Minority Populations

- ☐ No Low income or minority population in, near or affected by the project - **(Review Concluded)**
- ☒ Low income or minority population in or near project area
- ☒ No disproportionately high and adverse impact on low income or minority population- **(Review Concluded)**

Comments: Attachment 5 provides the US Environmental Protection Agency (EPA) Environmental Justice Screen (EJSCREEN) Report. This report indicates that approximately 39% of the population within a 1-mile buffer of the project area are minority populations. This is less than the State average of 56%. The report also indicates that 16% of the population is defined as low income; the State average low-income population is 38%. The proposed action alternative would not be expected to adversely affect these low income or minority populations.

III. OTHER ENVIRONMENTAL ISSUES

No additional environmental issues were identified.

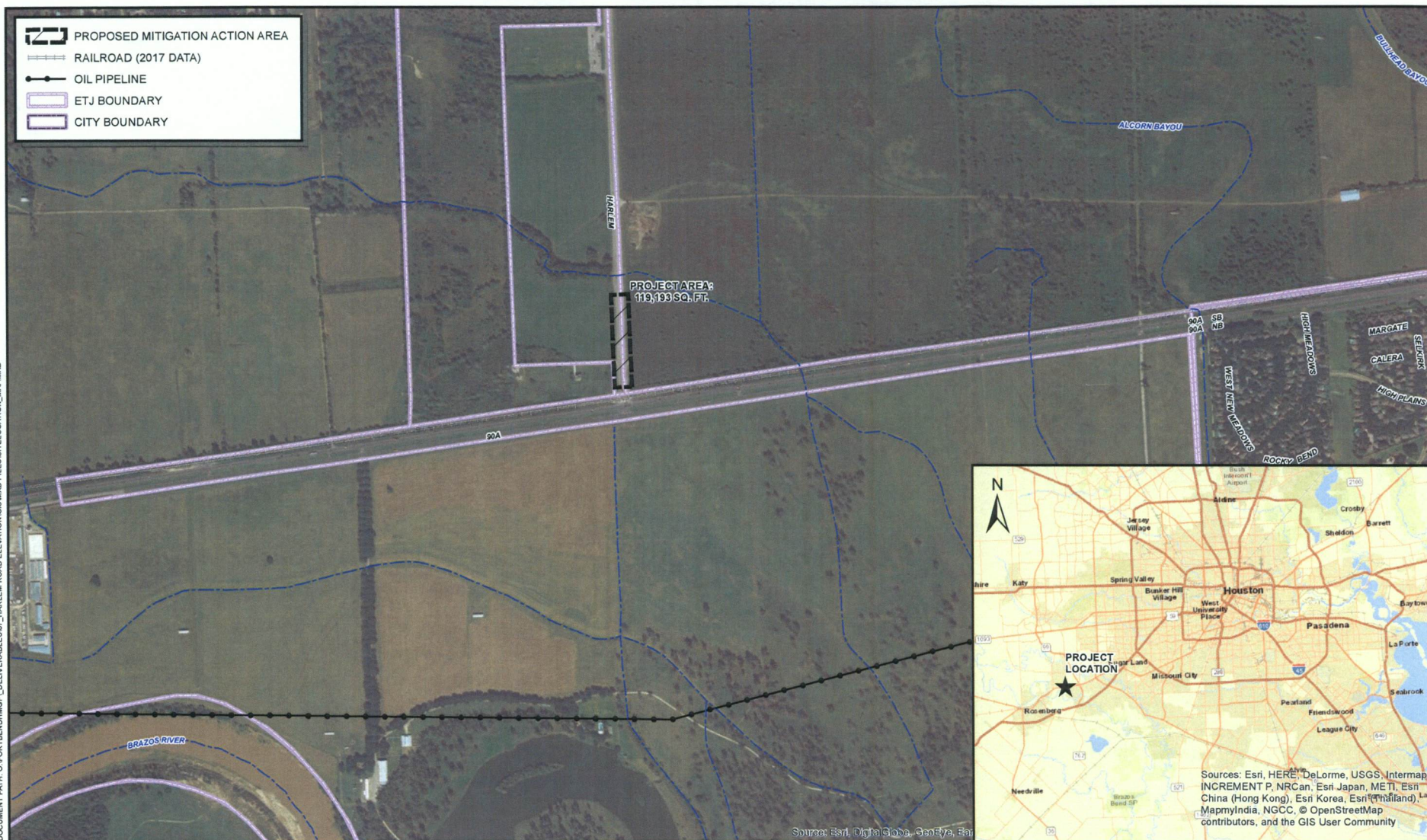
IV. EXTRAORDINARY CIRCUMSTANCES

Based on the review of compliance with other environmental laws and Executive Orders, and in consideration of other environmental factors, review the of project for extraordinary circumstances found "No" circumstance where an Environmental Assessment (EA) would be required as follows where a blank box indicates "No".

Check if "Yes"

- ☐ (i) Greater scope or size than normally experienced for a particular category of action;
- ☐ (ii) Actions with a high level of public controversy;
- ☐ (iii) Potential for degradation, even though slight, of already existing poor environmental conditions;
- ☐ (iv) Employment of unproven technology with potential adverse effects or actions involving unique or unknown environmental risks;
- ☐ (v) Presence of endangered or threatened species or their critical habitat, or archaeological, cultural, historical or other protected resources;
- ☐ (vi) Presence of hazardous or toxic substances at levels which exceed Federal, state or local regulations or standards requiring action or attention;
- ☐ (vii) 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;
- ☐ (viii) Potential for adverse effects on health or safety; and
- ☐ (ix) Potential to violate a federal, state, local or tribal law or requirement imposed for the protection of the environment.
- ☐ (x) 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.

DOCUMENT PATH: O:\FORTBEND\MGP_DELIVERABLES\67_HARLEM ROAD ELEVATION\GIS\MXD FILES\SITE LOCATION_MAP.MXD



National Flood Hazard Layer FIRMeTte



29°36'14.28"N

95°43'8.16"W



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 250 500 1,000 1,500 2,000 Feet 1:6,000

29°35'43.00"N

Legend

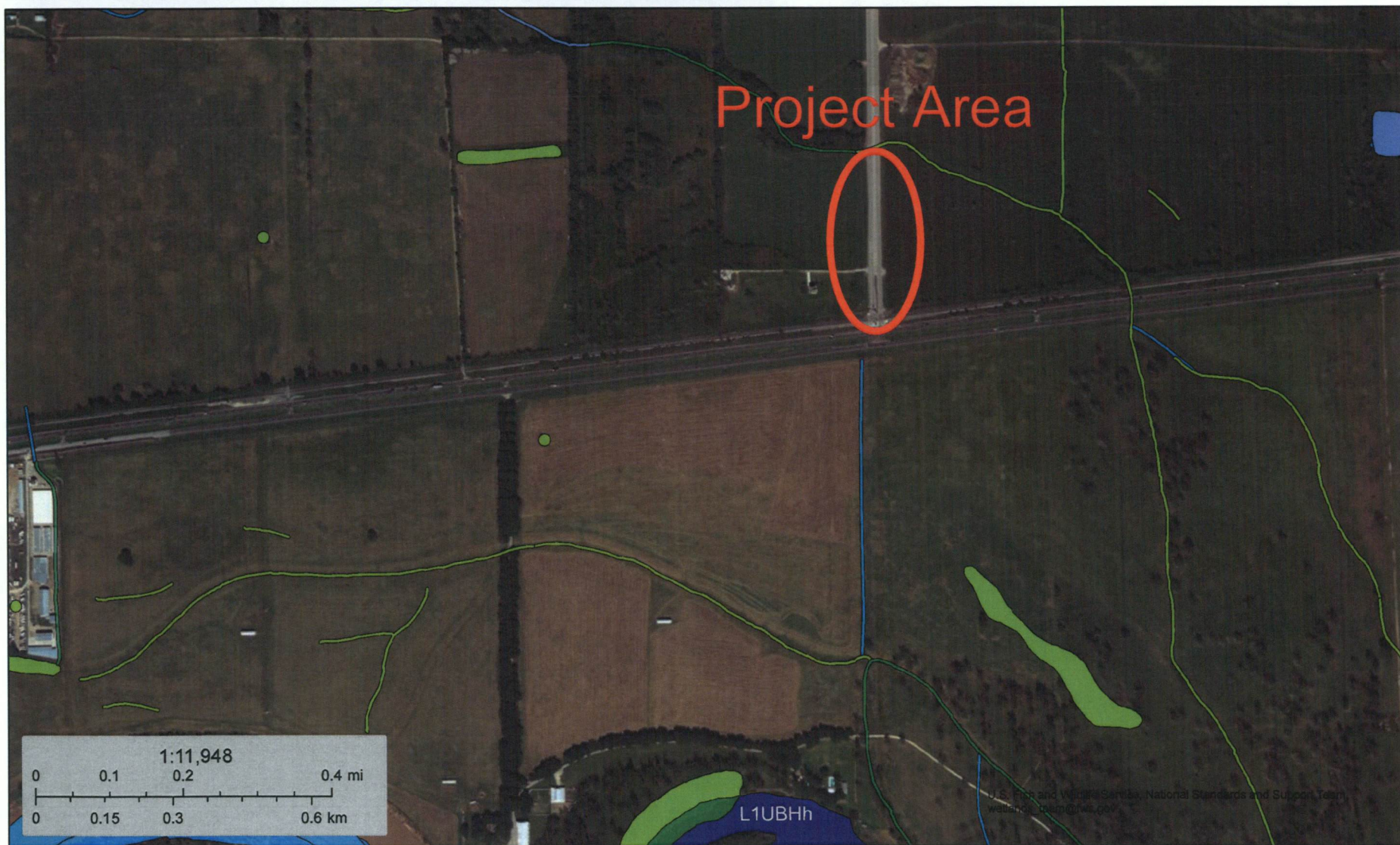
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth
		Regulatory Floodway Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes, Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The base map shown complies with FEMA's base map accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/13/2018 at 11:10:40 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



June 6, 2018

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Texas Coastal Ecological Services Field Office

17629 El Camino Real #211

Houston, TX 77058

Phone: (281) 286-8282 Fax: (281) 488-5882

<http://www.fws.gov/southwest/es/TexasCoastal/>

http://www.fws.gov/southwest/es/ES_Lists_Main2.html



In Reply Refer To:

June 08, 2018

Consultation Code: 02ETTX00-2018-SLI-1687

Event Code: 02ETTX00-2018-E-03491

Project Name: Harlem Road Elevation

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The U.S. Fish and Wildlife Service (Service) field offices in Clear Lake, Tx, and Corpus Christi, Tx, have combined administratively to form the Texas Coastal Ecological Services Field Office. A map of the Texas Coastal Ecological Services Field Office area of responsibility can be found at: <http://www.fws.gov/southwest/es/TexasCoastal/Map.html>. All project related correspondence should be sent to the field office responsible for the area in which your project occurs. For projects located in southeast Texas please write to: Field Supervisor; U.S. Fish and Wildlife Service; 17629 El Camino Real Ste. 211; Houston, Texas 77058. For projects located in southern Texas please write to: Field Supervisor; U.S. Fish and Wildlife Service; P.O. Box 81468; Corpus Christi, Texas 78468-1468. For projects located in six counties in southern Texas (Cameron, Hidalgo, Starr, Webb, Willacy, and Zapata) please write: Santa Ana NWR, ATTN: Ecological Services Sub Office, 3325 Green Jay Road, Alamo, Texas 78516.

The enclosed species list identifies federally threatened, endangered, and proposed to be listed species; designated critical habitat; and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project.

New information from updated surveys, changes in the abundance and distribution of species, changes in habitat conditions, or other factors could change the list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website <http://ecos.fws.gov/ipac/> at regular intervals during project planning and implementation for updates to species list and information. An updated list may be

requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Candidate species have no protection under the Act but are included for consideration because they could be listed prior to the completion of your project. The other species information should help you determine if suitable habitat for these listed species exists in any of the proposed project areas or if project activities may affect species on-site, off-site, and/or result in "take" of a federally listed species.

"Take" is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. In addition to the direct take of an individual animal, habitat destruction or modification can be considered take, regardless of whether it has been formally designated as critical habitat, if the activity results in the death or injury of wildlife by removing essential habitat components or significantly alters essential behavior patterns, including breeding, feeding, or sheltering.

Section 7

Section 7 of the Act requires that all Federal agencies consult with the Service to ensure that actions authorized, funded or carried out by such agencies do not jeopardize the continued existence of any listed threatened or endangered species or adversely modify or destroy critical habitat of such species. It is the responsibility of the Federal action agency to determine if the proposed project may affect threatened or endangered species. If a "may affect" determination is made, the Federal agency shall initiate the section 7 consultation process by writing to the office that has responsibility for the area in which your project occurs.

Is not likely to adversely affect - the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effects. The Federal agency or the designated non-Federal representative should seek written concurrence from the Service that adverse effects have been eliminated. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.

Is likely to adversely affect - adverse effects to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species but also is likely to cause some adverse effects to individuals of that species, then the proposed action "is likely to adversely affect" the listed species. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal section 7 consultation with this office.

No effect - the proposed action will not affect federally listed species or critical habitat (i.e., suitable habitat for the species occurring in the project county is not present in or adjacent to the action area). No further coordination or contact with the Service is necessary. However, if the

project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

Regardless of your determination, the Service recommends that you maintain a complete record of the evaluation, including steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related articles.

Please be advised that while a Federal agency may designate a non-Federal representative to conduct informal consultations with the Service, assess project effects, or prepare a biological assessment, the Federal agency must notify the Service in writing of such a designation. The Federal agency shall also independently review and evaluate the scope and contents of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

The Service's Consultation Handbook is available online to assist you with further information on definitions, process, and fulfilling Act requirements for your projects at: http://www.fws.gov/endangered/esa-library/pdf/esa_section7_handbook.pdf

Section 10

If there is no federal involvement and the proposed project is being funded or carried out by private interests and/or non-federal government agencies, and the project as proposed may affect listed species, a section 10(a)(1)(B) permit is recommended. The Habitat Conservation Planning Handbook is available at: http://www.fws.gov/endangered/esa-library/pdf/HCP_Handbook.pdf

Service Response

Please note that the Service strives to respond to requests for project review within 30 days of receipt, however, this time period is not mandated by regulation. Responses may be delayed due to workload and lack of staff. Failure to meet the 30-day timeframe does not constitute a concurrence from the Service that the proposed project will not have impacts to threatened and endangered species.

Proposed Species and/or Proposed Critical Habitat

While consultations are required when the proposed action may affect listed species, section 7(a)(4) was added to the ESA to provide a mechanism for identifying and resolving potential conflicts between a proposed action and proposed species or proposed critical habitat at an early planning stage. The action agency should seek concurrence from the Service to assist the action agency in determining effects and to advise the agency on ways to avoid or minimize adverse effect to proposed species or proposed critical habitat.

Candidate Species

Candidate species are species that are being considered for possible addition to the threatened and endangered species list. They currently have no legal protection under the ESA. If you find you have potential project impacts to these species the Service would like to provide technical

assistance to help avoid or minimize adverse effects. Addressing potential impacts to these species at this stage could better provide for overall ecosystem health in the local area and avert potential future listing.

Several species of freshwater mussels occur in Texas and four are candidates for listing under the ESA. The Service is also reviewing the status of six other species for potential listing under the ESA. One of the main contributors to mussel die offs is sedimentation, which smothers and suffocates mussels. To reduce sedimentation within rivers, streams, and tributaries crossed by a project, the Service recommends that you implement the best management practices found at: <http://www.fws.gov/southwest/es/TexasCoastal/FreshwaterMussels.html>.

Candidate Conservation Agreements (CCAs) or Candidate Conservation Agreements with Assurances (CCAAs) are voluntary agreements between the Service and public or private entities to implement conservation measures to address threats to candidate species. Implementing conservation efforts before species are listed increases the likelihood that simpler, flexible, and more cost-effective conservation options are available. A CCAA can provide participants with assurances that if they engage in conservation actions, they will not be required to implement additional conservation measures beyond those in the agreement. For additional information on CCAs/CCAAs please visit the Service's website at <http://www.fws.gov/endangered/what-we-do/cca.html>.

Migratory Birds

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of migratory birds. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Many may nest in trees, brush areas or other suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals or eggs. If project activities must be conducted during this time, we recommend surveying for active nests prior to commencing work. A list of migratory birds may be viewed at <http://www.fws.gov/migratorybirds/regulationspolicies/mbta/mbtandx.html>.

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the Act on August 9, 2007. Both the bald eagle and the golden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For more information on bald and golden eagle management guidelines, we recommend you review information provided at <http://www.fws.gov/midwest/eagle/pdf/NationalBaldEagleManagementGuidelines.pdf>.

The construction of overhead power lines creates threats of avian collision and electrocution. The Service recommends the installation of underground rather than overhead power lines whenever possible. For new overhead lines or retrofitting of old lines, we recommend that project

developers implement, to the maximum extent practicable, the Avian Power Line Interaction Committee guidelines found at <http://www.aplic.org/>.

Meteorological and communication towers are estimated to kill millions of birds per year. We recommend following the guidance set forth in the Service Interim Guidelines for Recommendations on Communications Tower Siting, Constructions, Operation and Decommissioning, found online at: <http://www.fws.gov/habitatconservation/communicationtowers.html>, to minimize the threat of avian mortality at these towers. Monitoring at these towers would provide insight into the effectiveness of the minimization measures. We request the results of any wildlife mortality monitoring at towers associated with this project.

We request that you provide us with the final location and specifications of your proposed towers, as well as the recommendations implemented. A Tower Site Evaluation Form is also available via the above website; we recommend you complete this form and keep it in your files. If meteorological towers are to be constructed, please forward this completed form to our office.

More information concerning sections 7 and 10 of the Act, migratory birds, candidate species, and landowner tools can be found on our website at: <http://www.fws.gov/southwest/cs/TexasCoastal/ProjectReviews.html>.

Wetlands and Wildlife Habitat

Wetlands and riparian zones provide valuable fish and wildlife habitat as well as contribute to flood control, water quality enhancement, and groundwater recharge. Wetland and riparian vegetation provides food and cover for wildlife, stabilizes banks and decreases soil erosion. These areas are inherently dynamic and very sensitive to changes caused by such activities as overgrazing, logging, major construction, or earth disturbance. Executive Order 11990 asserts that each agency shall provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial value of wetlands in carrying out the agency's responsibilities. Construction activities near riparian zones should be carefully designed to minimize impacts. If vegetation clearing is needed in these riparian areas, they should be re-vegetated with native wetland and riparian vegetation to prevent erosion or loss of habitat. We recommend minimizing the area of soil scarification and initiating incremental re-establishment of herbaceous vegetation at the proposed work sites. Denuded and/or disturbed areas should be re-vegetated with a mixture of native legumes and grasses. Species commonly used for soil stabilization are listed in the Texas Department of Agriculture's (TDA) Native Tree and Plant Directory, available from TDA at P.O. Box 12847, Austin, Texas 78711. The Service also urges taking precautions to ensure sediment loading does not occur to any receiving streams in the proposed project area. To prevent and/or minimize soil erosion and compaction associated with construction activities, avoid any unnecessary clearing of vegetation, and follow established rights-of-way whenever possible. All machinery and petroleum products should be stored outside the floodplain and/or wetland area during construction to prevent possible contamination of water and soils.

Wetlands and riparian areas are high priority fish and wildlife habitat, serving as important sources of food, cover, and shelter for numerous species of resident and migratory wildlife. Waterfowl and other migratory birds use wetlands and riparian corridors as stopover, feeding, and nesting areas. We strongly recommend that the selected project site not impact wetlands and riparian areas, and be located as far as practical from these areas. Migratory birds tend to concentrate in or near wetlands and riparian areas and use these areas as migratory flyways or corridors. After every effort has been made to avoid impacting wetlands, you anticipate unavoidable wetland impacts will occur; you should contact the appropriate U.S. Army Corps of Engineers office to determine if a permit is necessary prior to commencement of construction activities.

If your project will involve filling, dredging, or trenching of a wetland or riparian area it may require a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers (COE). For permitting requirements please contact the U.S. Corps of Engineers, District Engineer, P.O. Box 1229, Galveston, Texas 77553-1229, (409) 766-3002.

Beneficial Landscaping

In accordance with Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping (42 C.F.R. 26961), where possible, any landscaping associated with project plans should be limited to seeding and replanting with native species. A mixture of grasses and forbs appropriate to address potential erosion problems and long-term cover should be planted when seed is reasonably available. Although Bermuda grass is listed in seed mixtures, this species and other introduced species should be avoided as much as possible. The Service also recommends the use of native trees, shrubs, and herbaceous species that are adaptable, drought tolerant and conserve water.

State Listed Species

The State of Texas protects certain species. Please contact the Texas Parks and Wildlife Department (Endangered Resources Branch), 4200 Smith School Road, Austin, Texas 78744 (telephone 512/389-8021) for information concerning fish, wildlife, and plants of State concern or visit their website at: http://www.tpwd.state.tx.us/huntwild/wild/wildlife_diversity/texas_rare_species/listed_species/.

If we can be of further assistance, or if you have any questions about these comments, please contact 281/286-8282 if your project is in southeast Texas, or 361/994-9005, ext. 246, if your project is in southern Texas. Please refer to the Service consultation number listed above in any future correspondence regarding this project.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Texas Coastal Ecological Services Field Office
17629 El Camino Real #211
Houston, TX 77058
(281) 286-8282

Project Summary

Consultation Code: 02ETTX00-2018-SLI-1687

Event Code: 02ETTX00-2018-E-03491

Project Name: Harlem Road Elevation

Project Type: LAND - FLOODING

Project Description: The proposed action alternative would elevate a section of Harlem Road by approximately two (2) feet between the Union Pacific Railroad north right of way line (north of US 90A) to 1000 feet north of the railroad right of way. Additional culverts under the roadway would also be installed.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/29.60447826212922N95.68596079060256W>



Counties: Fort Bend, TX

Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 3 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME

STATUS

Least Tern *Sterna antillarum*

Endangered

Population: interior pop.

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- Wind related projects within migratory route.

Species profile: <https://ecos.fws.gov/ecp/species/8505>

Piping Plover *Charadrius melodus*

Threatened

Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.

There is **final** critical habitat for this species. Your location is outside the critical habitat.

This species only needs to be considered under the following conditions:

- Wind related projects within migratory route.

Species profile: <https://ecos.fws.gov/ecp/species/6039>

Red Knot *Calidris canutus rufa*

Threatened

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- Wind related projects within migratory route.

Species profile: <https://ecos.fws.gov/ecp/species/1864>

Whooping Crane *Grus americana*

Endangered

Population: Wherever found, except where listed as an experimental population

There is **final** critical habitat for this species. Your location is outside the critical habitat.

Species profile: <https://ecos.fws.gov/ecp/species/758>

Clams

NAME

STATUS

Smooth Pimpleback *Quadrula houstonensis*

Candidate

No critical habitat has been designated for this species.

Species profile: <https://ecos.fws.gov/ecp/species/8967>

Texas Fawnsfoot *Truncilla macrodon*

Candidate

No critical habitat has been designated for this species.

Species profile: <https://ecos.fws.gov/ecp/species/8965>

Flowering Plants

NAME

STATUS

Texas Prairie Dawn-flower *Hymenoxys texana*

Endangered

No critical habitat has been designated for this species.

Species profile: <https://ecos.fws.gov/ecp/species/6471>

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

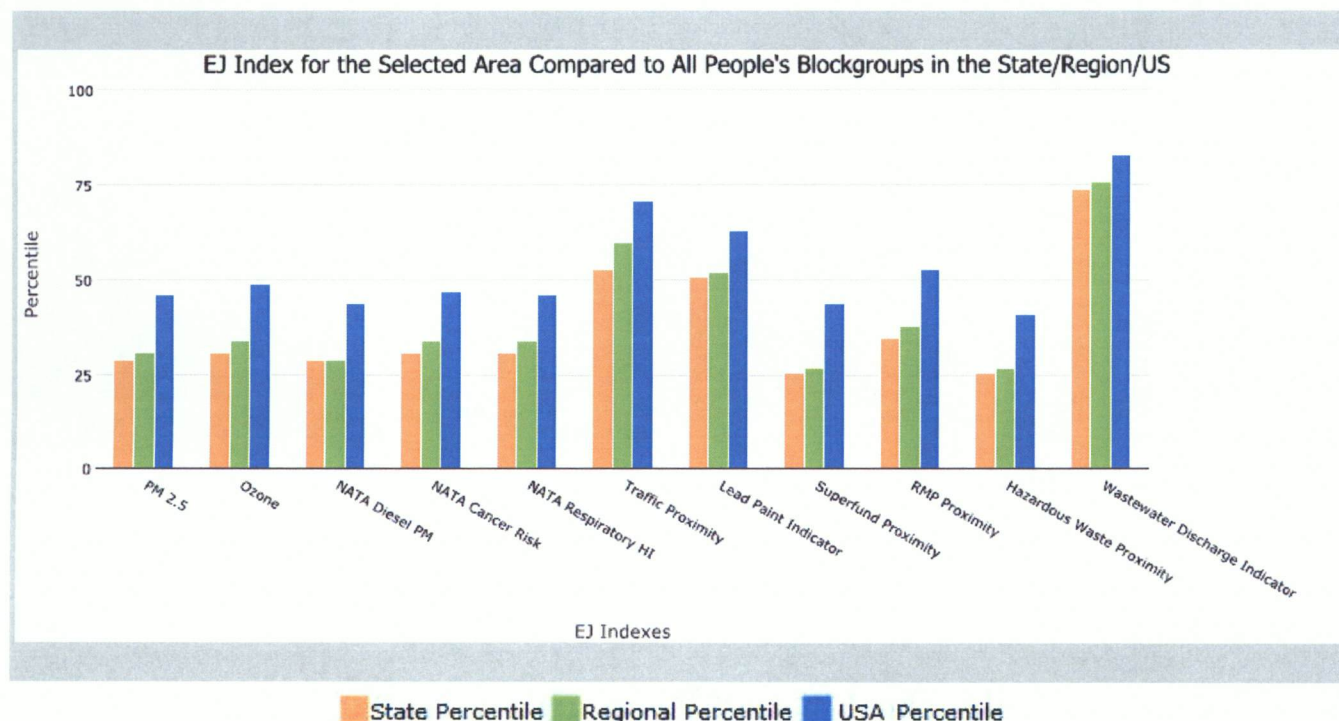
1 mile Ring around the Area, TEXAS, EPA Region 6

Approximate Population: 3,238

Input Area (sq. miles): 4.89

Harlem Road

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	29	31	46
EJ Index for Ozone	31	34	49
EJ Index for NATA* Diesel PM	29	29	44
EJ Index for NATA* Air Toxics Cancer Risk	31	34	47
EJ Index for NATA* Respiratory Hazard Index	31	34	46
EJ Index for Traffic Proximity and Volume	53	60	71
EJ Index for Lead Paint Indicator	51	52	63
EJ Index for Superfund Proximity	26	27	44
EJ Index for RMP Proximity	35	38	53
EJ Index for Hazardous Waste Proximity	26	27	41
EJ Index for Wastewater Discharge Indicator	74	76	83



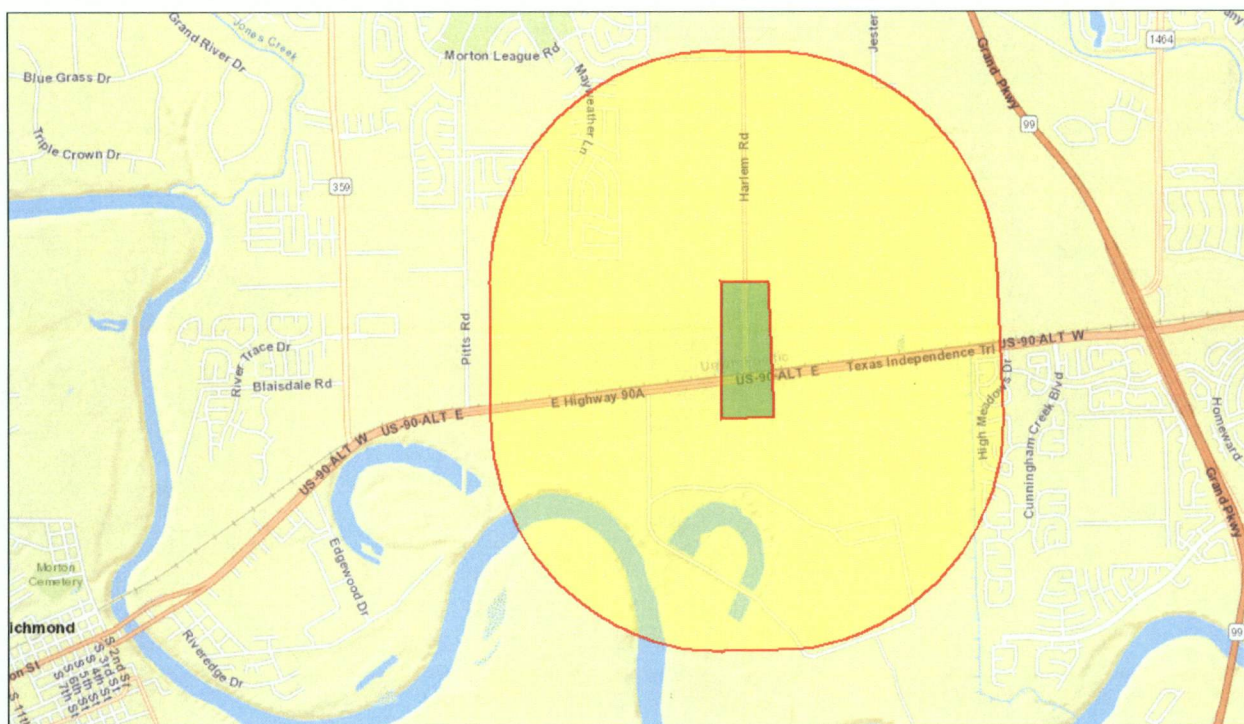
This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

1 mile Ring around the Area, TEXAS, EPA Region 6

Approximate Population: 3,238

Input Area (sq. miles): 4.89

Harlem Road



June 7, 2018

Yellow Buffer Area
Green Digitized Polygon

1:36,112
0 0.3 0.6 1.2 mi
0 0.5 1 2 km

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

Sites reporting to EPA

Superfund NPL

0

Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)

0

EJSCREEN Report (Version 2017)

1 mile Ring around the Area, TEXAS, EPA Region 6

Approximate Population: 3,238

Input Area (sq. miles): 4.89

Harlem Road



Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	10.5	9.38	83	9.15	88	9.14	82
Ozone (ppb)	37	39.7	25	40.2	23	38.4	37
NATA* Diesel PM ($\mu\text{g}/\text{m}^3$)	0.623	0.756	43	0.721	50-60th	0.938	<50th
NATA* Cancer Risk (lifetime risk per million)	35	41	18	42	<50th	40	<50th
NATA* Respiratory Hazard Index	1.4	1.8	31	1.8	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	76	390	41	320	47	590	46
Lead Paint Indicator (% Pre-1960 Housing)	0.013	0.16	31	0.18	25	0.29	14
Superfund Proximity (site count/km distance)	0.052	0.081	58	0.078	61	0.13	44
RMP Proximity (facility count/km distance)	0.14	0.89	17	0.8	23	0.73	26
Hazardous Waste Proximity (facility count/km distance)	0.058	0.088	53	0.083	57	0.093	54
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.0017	0.27	74	0.37	72	30	70
Demographic Indicators							
Demographic Index	30%	47%	29	45%	33	36%	49
Minority Population	39%	56%	33	50%	42	38%	59
Low Income Population	16%	38%	20	39%	17	34%	22
Linguistically Isolated Population	2%	8%	34	6%	45	5%	55
Population With Less Than High School Education	12%	18%	44	17%	43	13%	56
Population Under 5 years of age	5%	7%	27	7%	29	6%	37
Population over 64 years of age	10%	11%	53	12%	45	14%	35

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

To: Fort Bend County

From: Troy Dorman, Christy Williams, Jamie Childers, Ruben Martinez, Kim Truong, Jenn Lenart -- Tetra Tech

Date: Thursday, August 09, 2018

Subject: Harlem Road Flood Elevation Project Evaluation

The following memorandum describes the proposed flood mitigation project at Harlem Road in Fort Bend County, TX, and discusses the analysis and conclusion of the flood elevation at Harlem Road during Hurricane Harvey and historical events.

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1.0 PROJECT DESCRIPTION AND OBJECTIVE

Harlem Road is located in Fort Bend County, Texas north of Highway 90 and west of Grand Parkway (SH 99). During Hurricane Harvey in September 2017, a section of Harlem Road was closed to traffic for over 24 hours due to flooded conditions. The section of Harlem Road that was inundated ranged from just north of the intersection of Harlem Road and Highway 90 (Site Photo 1) and continued north (Site Photo 2, Site Photo 3). The closure resulted in an approximate 11.4 mile detour and impacted emergency responders and disrupted travel for an estimated 10,000 vehicles per day (Figure 1). The proposed infrastructure project will address this flooding hazard by installing four additional culverts that will convey the 100-year (yr) flood and by raising an approximate 800 foot section of Harlem Road to an elevation of 81.75ft above the NAVD88 datum (Figure 3).

The project will include the design of the elevated road and additional culverts, which involves hydraulic modeling and analysis, contracting, two phases of construction, and project management and close out. The two phases of construction would be scheduled such that only one side of Harlem Road is closed at a time, which allows normal use of the road and avoids the need for a detour.

Federal Emergency Management Agency (FEMA) flood plain mapping and modeling show that the water surface elevation (WSEL) near Harlem Road during the 100-yr flood event is 80.74ft, also known as the base flood elevation (BFE), and that Harlem Road lies within this 100-yr flood plain (Figure 2). Based on review of drone footage provided by Fort Bend County and construction plans of Harlem Road, it was determined that the WSEL during Hurricane Harvey exceeded the BFE by approximately 0.03ft. The proposed project will install four additional 30 inch diameter reinforced concrete pipes (RCP) to convey the projected flow experienced during a 100-year event. The construction of the additional culverts will ensure that the next flood event similar to Hurricane Harvey, which was greater than the BFE, will be conveyed under Harlem Road and traffic can continue as usual. The road will be raised to the BFE (80.74ft) plus a foot of freeboard for a total elevation of 81.74ft. Elevating this section of Harlem Road to 81.74ft provides a level of safety of approximately a foot above the estimated flooding elevation during Hurricane Harvey and allows for the safe conveyance of larger events.

Major milestones for the project include final engineering designs, permitting, construction site preparation, phase I of construction, phase II of construction, culvert construction, and project close out. The specific activities associated with these steps can be found in the cost estimate breakdown along with estimated dollar amounts.

Milestone	Month	Months to Complete
Final Engineering Designs	1	6
Environmental Permitting	2	6
Bidding	8	2
Construction Site Preparation	10	2
Phase I Construction	12	3
Phase II Construction	15	3
Culvert Construction	N/A	Part of roadway phases
Project Close Out	24	2

2.0 ANALYSIS BACKGROUND

On September 1, 2017 during Hurricane Harvey, USGS Gage 0811400 in the Brazos River at Richmond, TX recorded an elevation of 82.21 feet (ft). An analysis of a computer-aided design (CAD) of Harlem Road shows the lowest elevation of the road to be 80.30ft, which is 0.44ft lower than the FEMA modeled 80.74ft WSEL for the 100-yr flood event (Figure 4). The following evaluation was carried out to better determine the flooded extent and water elevation at Harlem Road and propose an engineered solution.

3.0 EVALUATION

Data from USGS Gage 08114000 at Brazos River - Richmond was used as reference for the area, which corresponds to Cross Section AH of the Brazos River in the 2014 Fort Bend County Flood Insurance Study (FIS). USGS Gage 08114000 is located approximately 3.5 miles southwest of the intersection of Harlem Road and Highway 90. The inundation map provided by Fort Bend County was used to determine the elevation in the Brazos River at which Harlem Road becomes inundated. The gage itself is located at 27.02ft above the NAVD88 datum; all data were adjusted to reflect the actual elevation. From the inundation maps, it was determined that Harlem Road begins to become inundated at a gage reading of 53.5ft, or 80.52ft from NAVD88. This elevation was considered the "topping elevation" (Figure 6) and estimated to have a return interval of approximately 43 years (Table 2). Return intervals are based on analysis of stream gage data at that location and vary from cross section to cross section based on channel geometry and topography. The inundation map data for a 53.5ft gage reading was unavailable, however, the map for a 54ft gage reading is presented as an example (Figure 5).

Elevation data was obtained for USGS Gage 08114000 for the time period around the 2017 flood event, from August 30, 2017 through September 4, 2017. The data was used to determine the period of time where the river was above the estimated topping elevation. The river was above the topping elevation from 9:00 am on August 30, 2017 to 1:45 am on September 3, 2017, estimating that Harlem Road was flooded for at least 3 days and 17 hours (Figure 6).

A desktop analysis was conducted with Fort Bend County drone footage from September 1, 2017 and imagery from Google Earth to verify the flooded extent of Harlem Road (Figure 7, Figure 8). An inundated segment of approximately 800ft was identified using a geographic information system (GIS) and the CAD elevation representation of Harlem Road (Figure 4). From the CAD image, it was concluded that the flood elevation at Harlem Road was 80.77ft in the area that was completely inundated, which is consistent with gage data and the 100-yr flood elevation determined by FEMA (Figure 2, Figure 4). A portion of the area that was completely inundated includes the property located at 129 Harlem Road (Site Photo 4)

The highest 15 crests at USGS Gage 08114000 were analyzed to determine the frequency of the historic elevations and the context for the event experienced during Hurricane Harvey. The 2014 Fort Bend County FIS determined the flood profile of Cross Section AH of the Brazos River to be 76.8ft, 81.4ft, 83ft, and 85ft for the 10-, 50-, 100-, and 500-year event, respectively (Table 1). The return interval of the 13 highest flows at USGS Gage 08114000 were estimated based on this data and found the Hurricane Harvey event to be approximately the size of a 20-year flood event (Table 2). The second highest elevation was recorded in June 2016 with an elevation of 81.76ft and had an estimated frequency of a 19-year event. The remaining 11 historic crests were estimated to have return intervals that did not exceed a 20-year flood event (Figure 9).

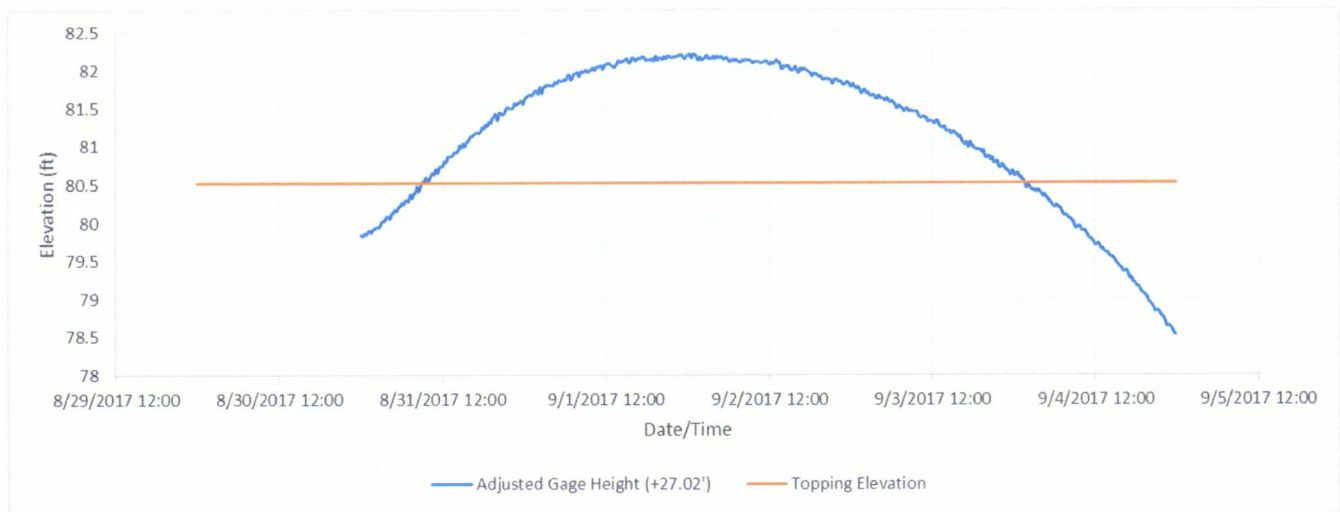


Figure 6. USGS Gage 08114000 water surface elevation data for 08/30/2017 to 09/04/2017 compared to estimated topping elevation determined from Fort Bend County inundation map.



FBC Drone Footage: Hwy 90 and Harlem Rd, Richmond, TX 9/1/17

Figure 7. Fort Bend County drone footage of Highway 90 and Harlem Road flooding from September 1, 2017. Red arrows represent extents of flooding over Harlem Road.

Table 1. 2014 Fort Bend County FIS flood elevation, flow and frequency at Cross Section AH of the Brazos River (USGS Gage 08114000).

Return Interval (year)	NAVD88 Elevation (ft)	Flow (cfs)
10	76.8	103,000
50	81.4	147,000
100	83	164,000
500	85	202,000

Table 2. Highest 13 flows at USGS Gage 08114000 in Brazos River at Richmond, TX and estimated return interval (highlighted event occurred during Hurricane Harvey).

Date	Flow (cfs)	Estimated Return Interval (year)
6/6/1929	123000	20.74765
9/1/2017	122000	19.94305
5/5/1957	119000	17.71167
11/28/1940	117000	16.36458
6/2/2016	102000	9.041592
5/25/1965	98800	7.966681
1/1/1992	94000	6.589102
5/8/1944	93800	6.537185
5/27/1935	90900	5.828764
5/14/1968	89600	5.536636
6/8/1979	88100	5.21771
10/21/1994	88100	5.21771
10/20/1957	87600	5.115538

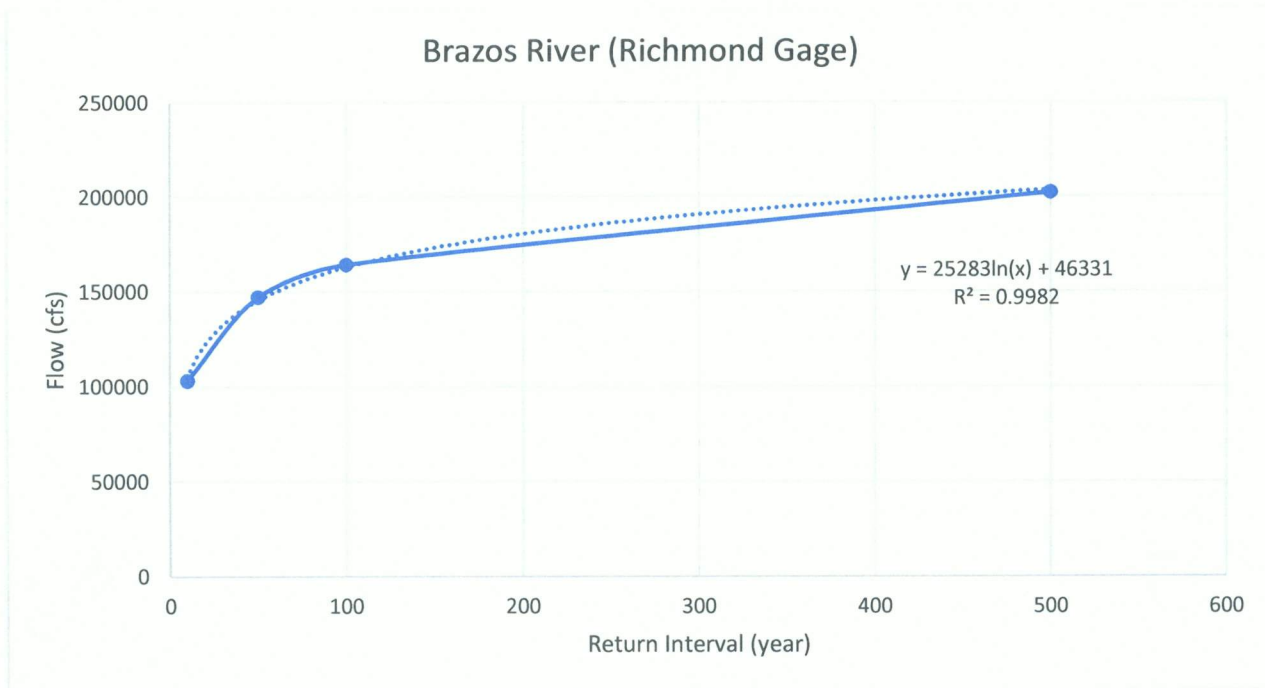


Figure 9. Estimated return intervals of from FEMA FIS FLOWS at USGS Gage 08114000 in the Brazos River at Richmond, TX.

4.0 CULVERT ANALYSIS

The culvert that crosses Harlem Road is located approximately 1,100ft from the intersection of Harlem Road and Highway 90 (Figure 4, Figure 8). The culvert inlet is protected from the road by a guardrail and has heavy vegetation to the west (Site Photo 5, Site Photo 6). Water flows from west to east through the culvert and across Harlem Road when the WSEL reaches an elevation higher than the road (Site Photo 7, Site Photo 8). Federal Highway Administration (FHWA) HY-8 software was used to analyze these culverts (Figure 4). Data for the channel cross section was obtained from digital elevation model (DEM) data TNRIS and roadway data were extracted from construction plans of Harlem Road from 2012. During a site visit on June 6, 2018, size and specifications of the culverts were identified. The culvert contains two 30" diameter RCPs, which have a grooved end and are projecting from the embankment (Figure 10).



Figure 10. Culverts at Harlem Road crossing.

The current road and culvert conditions were analyzed in HY-8 using the headwater elevation reached during Hurricane Harvey, which was determined to be approximately 80.77ft. An analysis of the culvert with existing road conditions resulted in an estimated total discharge of 246 cubic feet per second (cfs) during Hurricane Harvey. Of the total discharge, 104.52 cfs were conveyed through the culvert while the remaining 140.67 cfs overtopped Harlem Road (Figure 11). Construction of additional barrels and an increase in road elevation are required to discharge excess flows and keep the road from flooding for similar and larger events.

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
76.44	10.00	10.00	0.00	1
78.72	69.00	69.00	0.00	1
78.86	72.00	72.00	0.00	1
80.67	187.00	103.28	82.95	9
80.76	246.00	104.52	140.67	6
80.82	305.00	105.37	198.74	4
80.87	364.00	106.09	257.55	4
80.91	423.00	106.74	315.11	3
80.96	482.00	107.35	374.00	3
81.00	541.00	107.91	432.76	3
81.04	600.00	108.45	491.42	3
80.30	97.78	97.78	0.00	Overtopping

Figure 11. HY-8 results for existing culvert conditions analysis.

Analysis found that adding four new barrels of RCPs to the existing culvert would provide enough capacity to convey the 246 cfs experienced during Hurricane Harvey and keep the roadway from flooding (Figure 12). In addition to increasing the capacity of the culvert, minimum road elevation was raised to the BFE of 80.74ft plus an

additional 1ft of freeboard for a total elevation of 81.74ft. Approximately 800ft of Harlem Road would be raised to the new minimum elevation (Figure 3). HY-8 results show that with the proposed conditions, the headwater elevation would reach 79.91ft when total discharge is equal to 246 cfs, which leaves 0.83ft of freeboard on top of the 100-yr BFE. Additionally, the road would not experience overtopping until a WSEL of 81.75ft and total discharge through the culverts is greater than 329.41 cfs (Figure 12).

Headwater Elevation (ft)	Total Discharge (cfs)	Culvert 1 Discharge (cfs)	Roadway Discharge (cfs)	Iterations
76.05	10.00	10.00	0.00	1
77.30	69.00	69.00	0.00	1
77.33	72.00	72.00	0.00	1
78.84	187.00	187.00	0.00	1
79.91	246.00	246.00	0.00	1
81.16	305.00	305.00	0.00	1
81.82	364.00	332.09	30.82	20
81.88	423.00	334.46	86.75	5
81.92	482.00	336.29	143.72	4
81.96	541.00	337.88	202.16	4
82.00	600.00	339.28	260.30	4
81.75	329.41	329.41	0.00	Overtopping

Figure 12. HY-8 results for proposed culvert conditions analysis.

5.0 CONCLUSION

Aerial drone footage and CAD drawings were used to estimate the 80.77ft WSEL over Harlem Road during Hurricane Harvey. The existing two barrel 30" RCP culverts were analyzed using FHWA HY-8 software and resulted in an estimated 246cfs total flow over Harlem Road for this 2017 event. In order to convey the flows experienced during Hurricane Harvey without overtopping, four additional RCPs should be added to the existing culvert. Additionally, the minimum road surface elevation of Harlem Road should be raised to 81.75ft for approximately 800ft to ensure an appropriate level of safety. With the proposed improvements, flows similar to those during Hurricane Harvey will be fully discharged through the culvert with an available 1.83ft of freeboard until the road is overtopped.

Historical gage data and FIS data were analyzed to determine the return intervals for the 15 historic crests at USGS Gage 08114000. The flood event experienced at USGS Gage 08114000 during Hurricane Harvey was the highest recorded at the Richmond Gage, closely equivalent to the 100-year flood for that cross section. The second highest event was recorded only a year before, while the remaining historic events did not exceed an elevation equivalent to a 10-year flood. As higher intensity floods become more frequent, the need for appropriately sized culverts and roads above the BFE will become increasingly important for the resilience of Fort Bend County.



















TBPE FIRM NO. F-3924
www.tetratech.com
700 N. SAINT MARY'S STREET, STE. 300
SAN ANTONIO, TEXAS 78205
PH 210.299.7900



FORT BEND COUNTY, TEXAS
EMERGENCY MANAGEMENT
307 FORT STREET
RICHMOND, TEXAS 77469

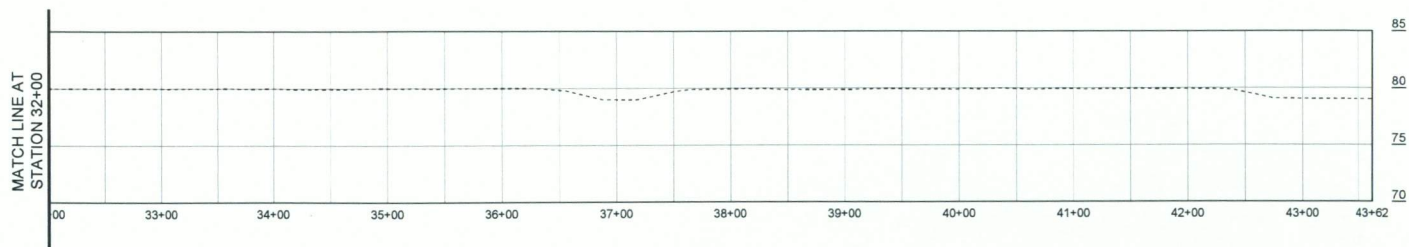
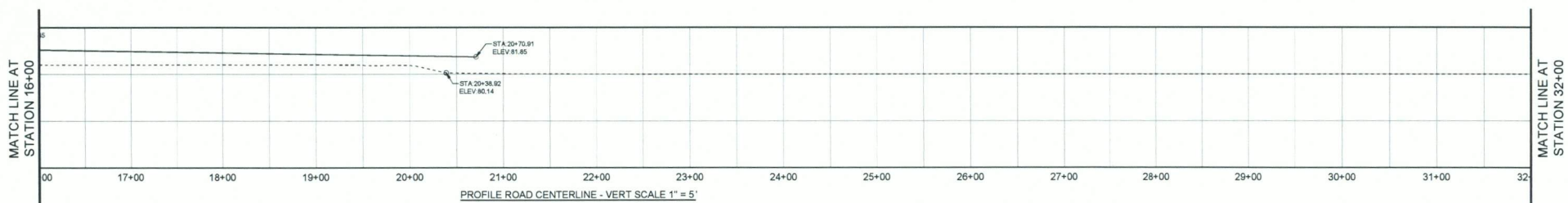
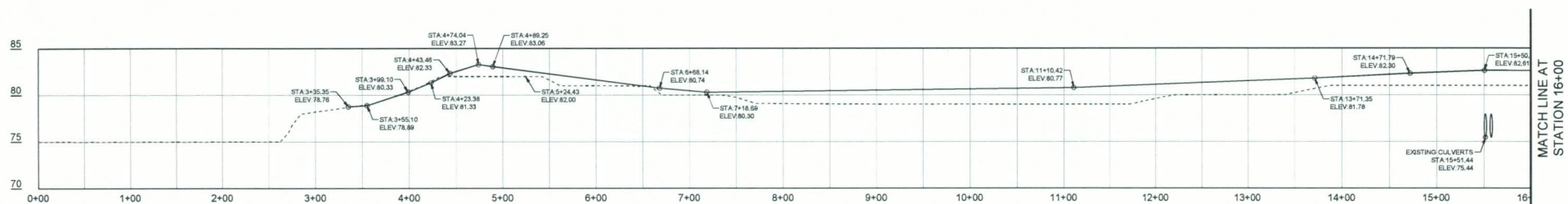
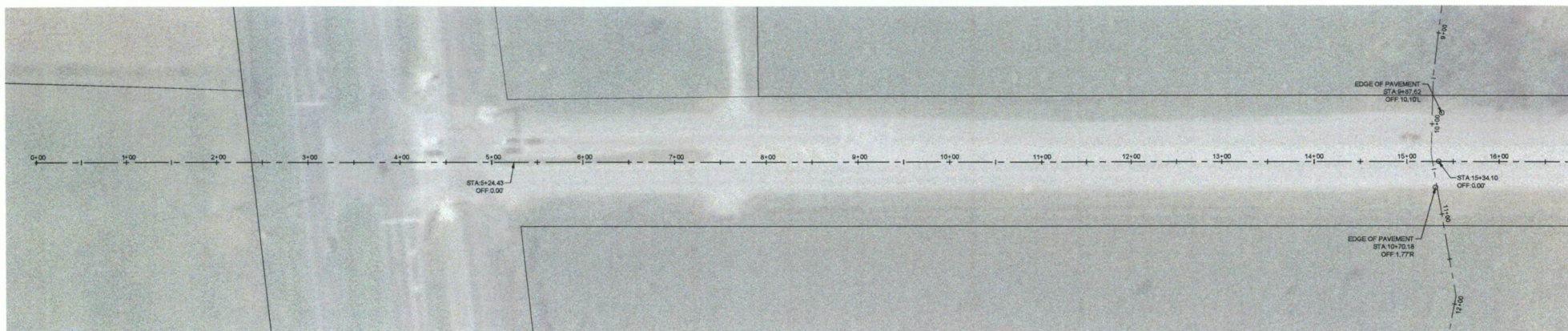
FORT BEND COUNTY - EMERGENCY MANAGEMENT - HURRICANE HARVEY HMGP GRANT
APPLICATION SERVICES FOR 15 INFRASTRUCTURE PROJECTS UNDER DR-4332-TX.

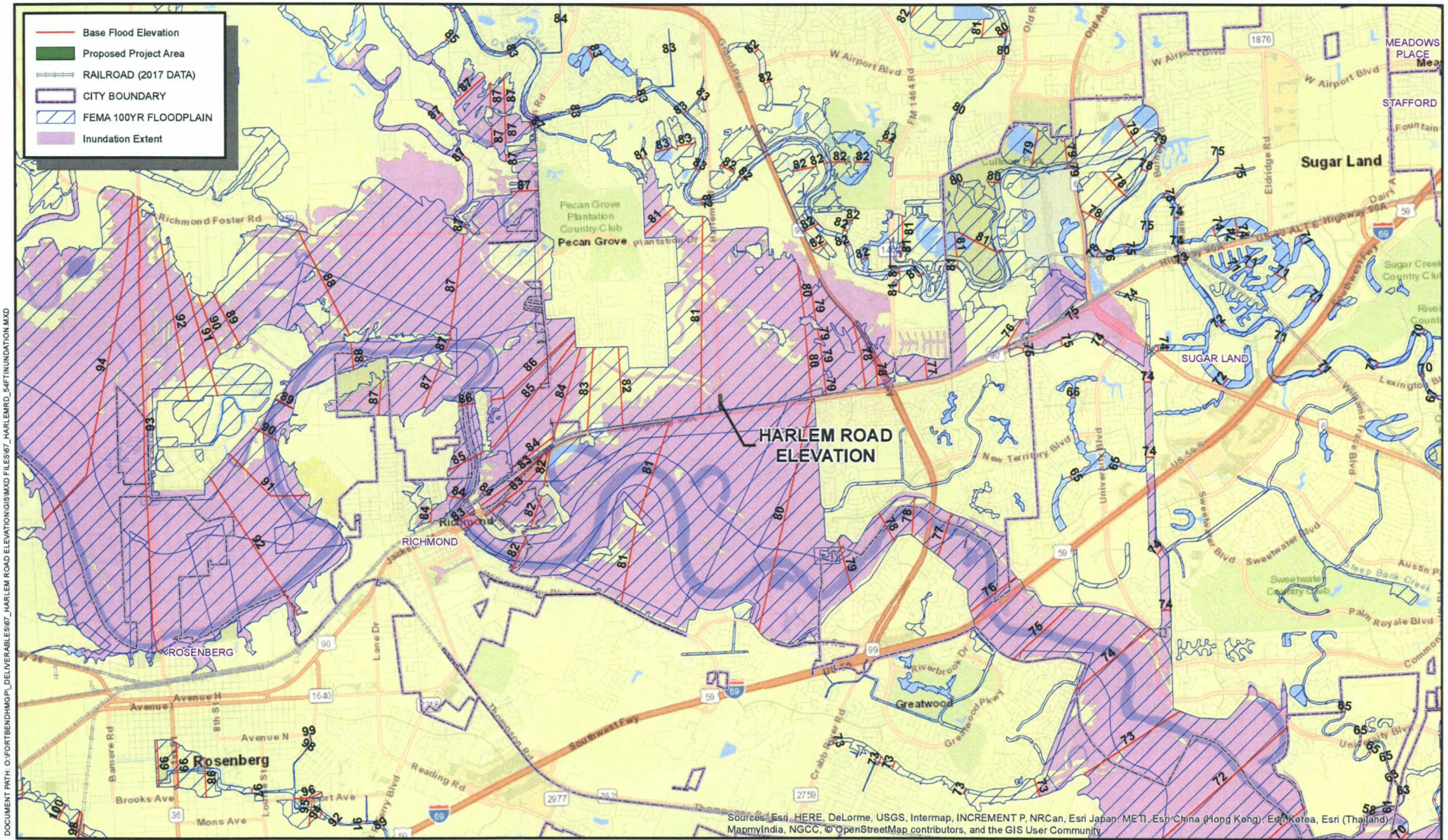
NOI 67 - HARLEM ROAD ELEVATION - SITE PLAN

NAD 1983 STATE PLANE TEXAS SOUTH CENTRAL FIPS 4204 FT

EXHIBIT

X

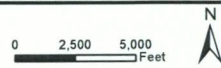




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TBPE FIRM NO. F-3924
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700 N. SAINT MARY'S STREET, STE. 300
SAN ANTONIO, TEXAS 78205
PH 210.299.7900



FORT BEND COUNTY, TEXAS
EMERGENCY MANAGEMENT
307 FORT STREET
RICHMOND, TEXAS 77469

FORT BEND COUNTY - EMERGENCY MANAGEMENT - HURRICANE HARVEY HMGP GRANT
APPLICATION SERVICES FOR 15 INFRASTRUCTURE PROJECTS UNDER DR-4332-TX.
NOI 67 - HARLEM ROAD ELEVATION - INUNDATION EXTENT AT 54 Ft.
GAGE READING AT USGS GAGE 0811400 BRAZOS RIVER AT RICHMOND, TX.
NAD 1983 STATE PLANE TEXAS SOUTH CENTRAL FIPS 4204 FT

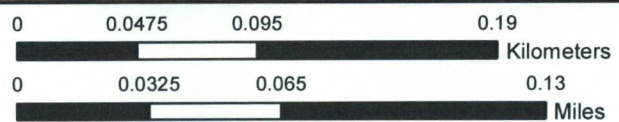
EXHIBIT
X

Legend

— Flood Extent

Culvert Inlet

**Estimated Flood Extent
Along Harlem Rd (~800 ft length)**



Application for Federal Assistance SF-424

* 1. Type of Submission:

- ☐ Preapplication
☒ Application
☐ Changed/Corrected Application

* 2. Type of Application:

- ☒ New
☐ Continuation
☐ Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received:

05/01/2018

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name:

Fort Bend County

* b. Employer/Taxpayer Identification Number (EIN/TIN):

74-6001969

* c. Organizational DUNS:

0814970750000

d. Address:

* Street1:

301 Jackson Street

Street2:

* City:

Richmond

County/Parish:

* State:

TX: Texas

Province:

* Country:

USA: UNITED STATES

* Zip / Postal Code:

77469-3108

e. Organizational Unit:

Department Name:

Fort Bend County OEM

Division Name:

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

Prefix:

Mr.

* First Name:

Doug

Middle Name:

* Last Name:

Barnes

Suffix:

Jr.

Title:

Sr. Coordinator

Organizational Affiliation:

Fort Bend County Emergency Management

* Telephone Number:

281-342-6185

Fax Number:

281-342-4798

* Email:

doug.barnes@fortbendcountytexas.gov

Application for Federal Assistance SF-424

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

B: County Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

* 10. Name of Federal Agency:

FEMA/DHS

11. Catalog of Federal Domestic Assistance Number:

CFDA Title:

* 12. Funding Opportunity Number:

4332

* Title:

Hazard Mitigation Grant Program

13. Competition Identification Number:

Title:

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

Add Attachment

Delete Attachment

View Attachment

* 15. Descriptive Title of Applicant's Project:

Harlem Road Elevation Project

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.

Add Attachment

Delete Attachment

View Attachment

17. Proposed Project:* a. Start Date: * b. End Date: **18. Estimated Funding (\$):**

* a. Federal	<input type="text" value="1,290,209.00"/>
* b. Applicant	<input type="text" value="430,069.00"/>
* 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="1,720,278.00"/>

*** 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

Add Attachment

Delete Attachment

View Attachment

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:

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.

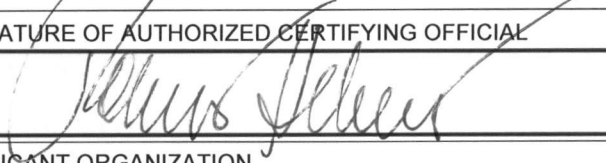
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NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If 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.
8. Will comply, as applicable, with 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.

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.
10. Will comply, if applicable, 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.
11. 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).
12. 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.
13. 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.).
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.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL 	TITLE County Judge
APPLICANT ORGANIZATION Fort Bend County	DATE SUBMITTED 8-28-2018

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.

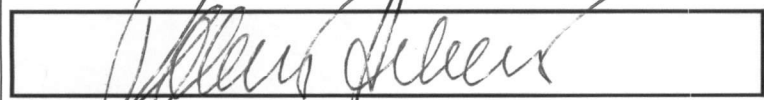
PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

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
	County Judge
APPLICANT ORGANIZATION	DATE SUBMITTED
Fort Bend County	8-28-2018

DEPARTMENT OF HOMELAND SECURITY
Federal Emergency Management Agency
**CERTIFICATIONS REGARDING LOBBYING; DEBARMENT, SUSPENSION
AND OTHER RESPONSIBILITY MATTERS; AND DRUG-FREE WORKPLACE
REQUIREMENTS**

O.M.B NO. 1660-0025
Expires September 30, 2017

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.7 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing, and submitting the form. This collection of information is required to obtain or retain benefits. You are not required to submit to this collection of information unless it displays a valid OMB control number. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to: Information Collections Management, Department of Homeland Security, Federal Emergency Management Agency, 500 C Street SW, Washington, DC 20472-3100, and Paperwork Reduction Project (1660-0025). **NOTE: Do not send your completed form to this address.**

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature of this form provides for compliance with certification requirements under 44 CFR Part 18, "New Restrictions on Lobbying" and 28 CFR Part 17, "Government-wide Debarment and Suspension (Nonprocurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Federal Emergency Management Agency (FEMA) determines to award the transaction, grant, or cooperative agreement.

1. LOBBYING

As required by section 1352, Title 31 of the U.S. Code, and implemented at 44 CFR Part 18, for persons entering into a grant or cooperating agreement over \$ 100,000, as defined at 44 CFR Part 18, the applicant certifies that:

(a) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the making of any Federal grant, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal grant or cooperative agreement.

(b) If any other funds than Federal appropriated funds have been paid or will be paid to any other person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or an employee of Congress, or employee of a member of Congress in connection with this Federal Grant or cooperative agreement, the undersigned shall complete and submit Stand Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(c) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subgrants, contracts under grants and cooperative agreements, and subcontracts) and that all subrecipients shall certify and disclose accordingly.

Standard Form-LLL "Disclosure of Lobbying Activities"
attached

☐ (This form must be attached to certification if non-appropriated funds are to be used to influence activities.)

**2. DEBARMENT, SUSPENSION, AND OTHER
RESPONSIBILITY MATTERS (DIRECT RECIPIENT)**

As required by Executive Order 12549, Debarment and Suspension, and implemented at 44 CFR Part 67, for prospective participants in primary covered transactions, as defined at 44 CFR Part 17, Section 17.510-A.

A. The applicant certifies that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, sentenced to a denial of Federal benefits by a State or Federal court, or voluntarily excluded from covered transactions by any Federal department or agency;

(b) Have not within a three-year period preceding this application been convicted of a or had a civilian judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or perform a public a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1) (b) of this certification; and

(d) Have not within a three-year period preceding this application had one or more public transactions (Federal, State, or local) terminated for cause of default; and

B. Where the applicant is unable to certify to any of the statements in this certification, he or she shall attach an explanation to this application.

**3. DRUG-FREE WORKPLACE (GRANTEE OTHER THAN
INDIVIDUALS)**

As required by the Drug-Free Workplace Act of 1988, and implemented at 44 CFR Part 17, Subpart F, for grantees, as defined at 44 CFR Part 17.615 and 17.620-

A. The applicant certifies that it will continue to provide a drug-free workplace by;

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an on-going drug free awareness program to inform employees about-

(1) The dangers of drug abuse in the workplace;

(2) The grantee's policy of maintaining a drug-free workplace;

(3) Any available drug counseling, rehabilitation, and employee assistance programs; and

(4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant to be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will-

(1) Abide by the term of the statement; and

(2) Notify the employee in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such convictions;

(e) Notifying the agency, in writing, within 10 calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position, title, to the applicable FEMA awarding office, i.e., regional office or FEMA office.

(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is convicted-

(1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation act of 1973, as amended; or

(2) Requiring such an employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g) Making a good faith effort to continue to maintain a drug free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

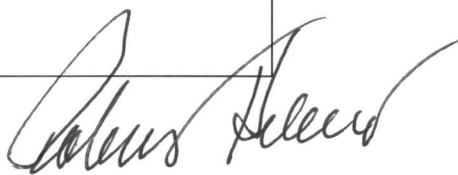
B. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, City, County, State, Zip code)

☐ There are workplaces on file that are not identified

Sections 17.630 of the regulations provide that a grantee that is a State may elect to make one certification in each Federal fiscal year. A copy of which should be included with each application for FEMA funding. States and State agencies may elect to use a state wide certification.

Signature of Applicant Agent


Robert Hebert, County Judge

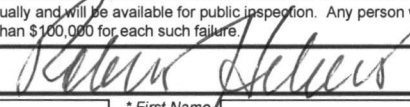
Date: 8-28-2018

DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C.1352

Approved by OMB

4040-0013

1. * Type of Federal Action: <input type="checkbox"/> a. contract <input checked="" type="checkbox"/> b. grant <input type="checkbox"/> c. cooperative agreement <input type="checkbox"/> d. loan <input type="checkbox"/> e. loan guarantee <input type="checkbox"/> f. loan insurance	2. * Status of Federal Action: <input type="checkbox"/> a. bid/offer/application <input checked="" type="checkbox"/> b. initial award <input type="checkbox"/> c. post-award	3. * Report Type: <input checked="" type="checkbox"/> a. initial filing <input type="checkbox"/> b. material change
4. Name and Address of Reporting Entity: <input checked="" type="checkbox"/> Prime <input type="checkbox"/> SubAwardee * Name <input type="text" value="Fort Bend County"/> * Street 1 <input type="text" value="301 Jackson Street"/> Street 2 <input type="text"/> * City <input type="text" value="Richmond"/> State <input type="text" value="TX: Texas"/> Zip <input type="text" value="77494"/> Congressional District, if known: <input type="text"/>		
5. If Reporting Entity in No.4 is Subawardee, Enter Name and Address of Prime: 		
6. * Federal Department/Agency: <input type="text" value="N/A"/>	7. * Federal Program Name/Description: <input type="text" value="N/A"/> CFDA Number, if applicable: <input type="text"/>	
8. Federal Action Number, if known: <input type="text" value="N/A"/>	9. Award Amount, if known: \$ <input type="text"/>	
10. a. Name and Address of Lobbying Registrant: Prefix <input type="text"/> * First Name <input type="text" value="N/A"/> Middle Name <input type="text"/> * Last Name <input type="text" value="N/A"/> Suffix <input type="text"/> * Street 1 <input type="text" value="N/A"/> Street 2 <input type="text"/> * City <input type="text" value="N/A"/> State <input type="text"/> Zip <input type="text"/>		
b. Individual Performing Services (including address if different from No. 10a) Prefix <input type="text"/> * First Name <input type="text" value="N/A"/> Middle Name <input type="text"/> * Last Name <input type="text" value="N/A"/> Suffix <input type="text"/> * Street 1 <input type="text" value="N/A"/> Street 2 <input type="text"/> * City <input type="text" value="N/A"/> State <input type="text"/> Zip <input type="text"/>		
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when the transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure. * Signature:  * Name: Prefix <input type="text" value="Mr."/> * First Name <input type="text" value="Robert"/> Middle Name <input type="text"/> * Last Name <input type="text" value="Hebert"/> Suffix <input type="text"/> Title: <input type="text" value="County Judge"/> Telephone No.: <input type="text"/> Date: <input type="text" value="8-28-2018"/>		
Federal Use Only:		Authorized for Local Reproduction Standard Form - LLL (Rev. 7-97)