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Flood Management Strategy (FMS)

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title **Floodplain Management and Regulation** ID# **102000001**

Sponsor (name of entity) **Lower Colorado-Lavaca RFPG** Commitment ☒ Yes ☐ No

Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Strategy Type Strengthen floodplain management practices and floodplain regulation

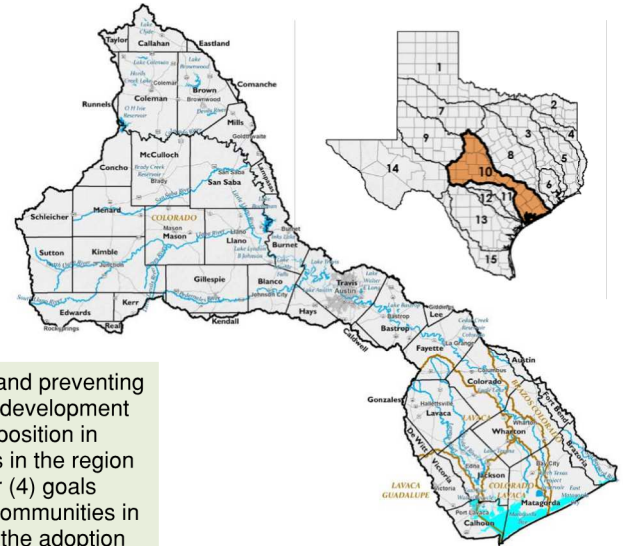
Problem Area

Regional **Lower Colorado-Lavaca RFPG**

Sub-regional

Counties

City



Need for Strategy

Flood risk reduction begins with prevention—preventing new problems from developing and preventing existing problems from becoming worse. One key to prevention is effective regulation of development and redevelopment in and near floodplains. Overall, the LC-LV Region is in an enviable position in terms of floodplain management and regulation, with only eight (8) of 135 eligible entities in the region not currently participating in the National Flood Insurance Program (NFIP). Keyed to four (4) goals adopted by the RFPG (see below) there is a need to provide direct assistance to these communities in becoming NFIP participants. There is also a need to also assist cities and counties with the adoption and implementation of enhanced floodplain, land development, land use, and drainage regulations. This is particularly important in smaller communities that are or are expected to experience significant land development.

Description of Strategy

This proposed regional flood management strategy will consist of education, outreach and direct technical assistance to cities and counties throughout Region 10, with a particular focus on providing targeted assistance to: 1) cities that are eligible but not currently participating in the NFIP; and 2) other cities and counties with the identification, evaluation, adoption, and implementation of enhanced floodplain management practices and regulations and land development, land use, and comprehensive drainage regulations. Communities that are experiencing or are expected to experience significant land development will be targeted for assistance with enhanced floodplain management. This will include consultation upon request with regard to FEMA requirements for NFIP participation, workshops for local officials, provision of model ordinances and regulations for NFIP participation or for adoption of enhanced floodplain, land development, and land use requirements and standards. Implementation of this strategy by the RFPG will require grant funding, preferably early in the second regional flood planning cycle. Delivery of technical assistance would be provided contractually through consultants, retained by the RFPG sponsor or alternatively through the TWDB or an outside organization such as the Texas Floodplain management Association.

Related Goals

4.1 Increase the number of cities and counties participating in the National Flood Insurance Program (NFIP). 4.2 Increase the number of cities and counties that have adopted higher standards over and above NFIP minimum standards, including regulating to one or more feet above the Base Flood Elevation (BFE) for existing 1% annual change event (100-year) conditions. 4.3 Increase the number of cities and counties that have adopted regulations to reduce the risk from localized flooding. 4.4 Increase the number of cities and counties which provide alternate compliance options.

Estimated Strategy Cost

Cost **TBD** Potential funding source(s) **TWDB, TXDEM, FEMA**

Lower Colorado-Lavaca
**REGIONAL FLOOD
PLANNING GROUP**

REGION 10

Problem Area

It is also important that information be provided to the public and key stakeholders on an ongoing basis with regard to the state and regional flood planning processes.

Note that this strategy is a companion to a legislative recommendation (Task 8/Chapter 8) that the State of Texas provide funding assistance for an ongoing educational campaign on flood awareness and preparation. This could include a seasonal media campaign, perhaps modeled on the Don't Mess with Texas campaign, development of education materials for use by local entities, and public school education curricula and materials akin to the TWDB Major Rivers school education program. Potential sources of funding include the TWDB Flood Infrastructure Fund and/or funding provided through the Texas Division of Emergency Management (TXDEM).

1.1 – Increase the number of public outreach and educational communications and activities conducted by the RFPG to improve awareness of flood hazards and benefits of flood planning in the flood planning region.

FMSv1 041822

Flood Management Strategy (FMS)

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title **Low Water Crossing Assessment, Prioritization, and Mitigation** ID# **102000003**

Sponsor (name of entity) **Lower Colorado-Lavaca RFPG** Commitment ☒ Yes ☐ No

Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Strategy Type Low water crossing flood risk assessment and mitigation

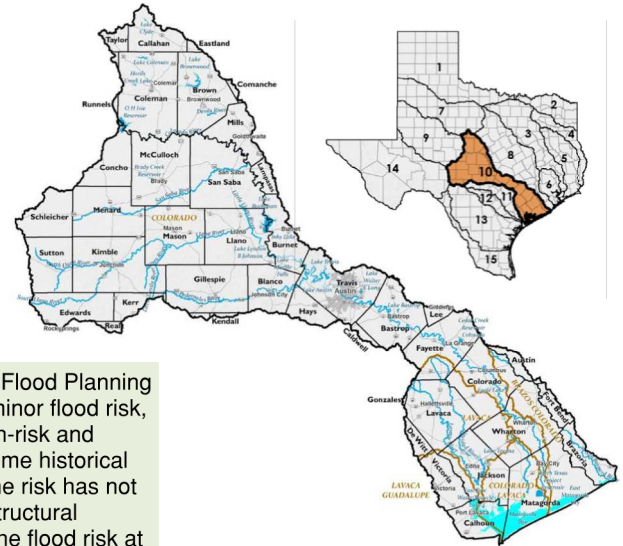
Problem Area

Regional **Lower Colorado-Lavaca RFPG**

Sub-regional

Counties

City



Need for Strategy

There are 1,352 low-water roadway crossings (LWC) within the Lower Colorado-Lavaca Flood Planning Region. Many of these crossings experience frequent flooding but may have relatively minor flood risk, in terms of public safety and/or the integrity of the roadway. Others, however, are at high-risk and experience flood depths and velocities that do pose a significant risk. While there are some historical records of fatalities at some LWCs, much of the available information is anecdotal and the risk has not been fully assessed. Furthermore, the cost to mitigate flood risk at high-risk LWC with structural solutions (e.g., bridges) is typically very high, often prohibitive. It is therefore important the flood risk at LWCs be systematically and fully evaluated in order to prioritize those LWCs in need of mitigation, either through structural measures or non-structural (e.g., closures) measures.

Description of Strategy

Some of the more urbanized areas in Region 10, specifically Travis County and the City of Austin, have relatively good information about LWCs within their jurisdictions, including flood risk and prioritization for improvements. Many other areas have little information other than the location, perhaps observations during floods, and perhaps historical and/or anecdotal information. Similar to the recommended regional strategy to conduct outreach and provide technical assistance to counties and cities with floodplain management and regulation, this strategy is to provide technical assistance with the assessment of flood risk at LWCs. This strategy will be implemented by the LC-LV RFPG during interim between flood planning cycles if the required funding is provided by TWDB or from other sources.

Note that this strategy is a companion to a legislative recommendation (Task 8/Chapter 8) that the State of Texas provide funding assistance both for assessment of flood risk at LWCs and for implementation of flood risk reduction measures, either structural or non-structural. Potential funding sources could include TXDOT, the TWDB Flood Infrastructure Fund, and/or funding provided through the Texas Division of Emergency Management.

Related Goals

6.2 – Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals, etc.).

Estimated Strategy Cost

Cost **TBD** Potential funding source(s) **TWDB, TXDOT, TDEM**

Flood Mitigation Project (FMP)

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title **Arroyo Doble/Twin Creeks Drainage Phases 3-7** ID# **103000014**
Sponsor (name of entity) **Travis County** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Project Type

STRUCTURAL

☐ Detention ☒ Channel modification ☒ Bridge/culvert ☒ Storm drain ☐ Levee/floodwall

Other

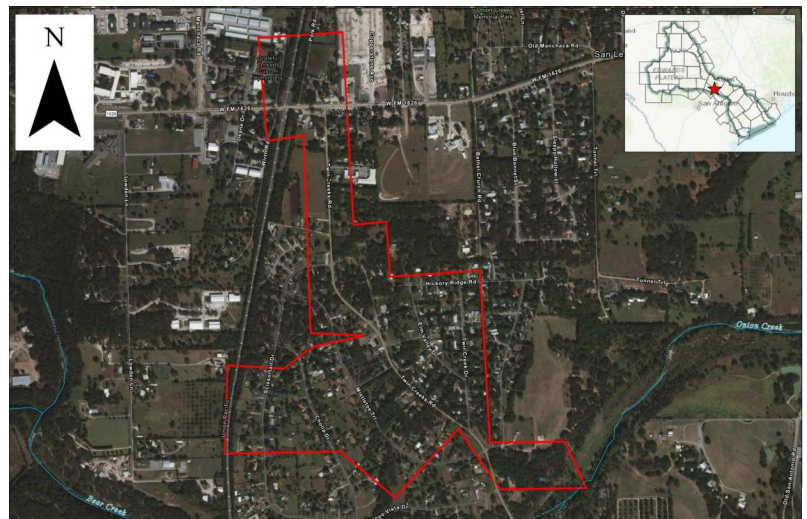
NON-STRUCTURAL

☐ Property buyouts ☐ Floodproofing ☐ Flood readiness/resilience ☐ Flood warning system/gauges

Other

Problem Area

City **N/A** County **Travis County**
Watershed name **Onion Creek**
Tributary(ies) **N/A**
HUC# **120902050407** Stream miles (est.) **N/A**
Drainage area: square miles, est or acreage, est **400**
Social vulnerability index **0.15**
Other **Arroyo Doble, Arroyo Doble Estates, Twin Creek Park Subdivisions, and the Wirth and Polk Road areas Adjacent to FM 1626.**



Flood Risk Description

Subdivisions generally lack defined drainage systems. Roadside ditches and culvert crossings are systematically undersized or not provided. Lack of existing drainage infrastructure, extremely flat terrain, and a history of flooding in the area with widespread flood damage occurring as recently as the October 31, 2015 flood event in the area of concern where it was reported that 336 properties were impacted, with 161 structures experiencing significant flood damage.

Proposed level-of-service **100-year** Status **30% design is complete** Atlas 14 rainfall used **Proxy**

Project Description

Provide flood risk reduction in 100-yr storm events with storm drainage improvements, increased stormwater storage, and channel modifications. Additional project activities may include, but not limited to easement acquisition, utility relocations, regrading existing ground surface conditions, and existing infrastructure repair.

Related Goal(s)

10000025 - Reduce the number of structures and critical facilities that are at high risk of repetitive loss through the implementation of structural flood mitigation projects.

Estimated Project Cost

Capital cost **\$5,626,000 (Year 2019)** Ongoing O&M Costs **Unknown**
Potential funding source(s) **Future Bond Program, Grants, or Loans**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title **Shiloh Road Bridge West of State HWY 304** ID# **101000002**
Sponsor (name of entity) **City of Bastrop** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type **Preliminary Project Engineering**

Problem Area

City **City of Bastrop** County **Bastrop County**
Watershed name **Lower Colorado - Cummins**
Tributary(ies) **Unnamed Tributaries**
HUC# **12090301** Stream miles (est.) **1.20 miles**
Drainage area: square miles, est **3.17** or acreage, est **2,030**
Social vulnerability index **0.61**
Other **Roadway/Crossing Improvements & Storm Drainage System**



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing/bridge class structure is a multi-box (2) culvert-bridge. The proposed improvements include an upgrade to the subject crossing. The existing road is a 2-lane road with an average daily traffic count of 547.

Population at risk **N/A** Structures at risk **N/A** Critical facilities at risk (number) **N/A**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **0.11 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$100,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

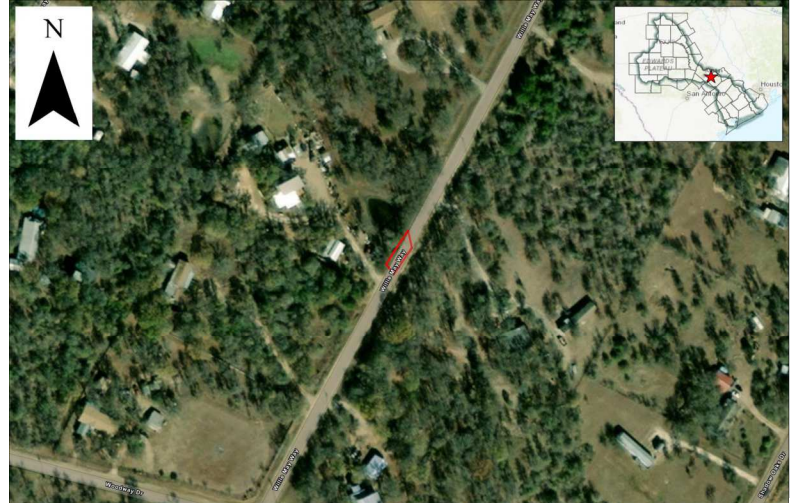
Title **Willie May Way in Precinct 4 at Trib** ID# **101000003**
Sponsor (name of entity) **City of Webberville** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type Preliminary Project Engineering

Problem Area

City **City of Webberville** County **Bastrop County**
Watershed name **Lower Colorado - Cummins**
Tributary(ies) **Unnamed Tributary**
HUC# **12090301** Stream miles (est.) **0.50 miles**
Drainage area: square miles, est **0.37** or acreage, est **238**
Social vulnerability index **0.61**
Other **Roadway/Crossing Improvements**



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing/bridge class structure is a corrugated metal pipe crossing. The proposed improvements include a multi-box (2) culvert-bridge. The existing road is a 2-lane road with an average daily traffic count of 341.

Population at risk **N/A** Structures at risk **N/A** Critical facilities at risk (number) **N/A**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **0.01 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$100,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title ID#
Sponsor (name of entity) Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type

Problem Area

City County
Watershed name
Tributary(ies)
HUC# Stream miles (est.)
Drainage area: square miles, est or acreage, est
Social vulnerability index
Other



Flood Risk Description

The existing crossing is undersized and overtops. There is no existing culvert at this location. The proposed improvements include a box culvert-bridge. The existing road is a 2-lane road with an average daily traffic count of 841.

Population at risk Structures at risk Critical facilities at risk (number)
Farm/Ranch land impacted (acres) Roadway(s) impacted (miles)

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost Potential funding source(s)

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca
**REGIONAL FLOOD
PLANNING GROUP**

Title **Old McDade Rd in Precinct 4 near Norwood Rd** ID# **101000007**
Sponsor (name of entity) **City of Bastrop** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type **Preliminary Project Engineering**

Problem Area

City **City of Bastrop** County **Bastrop County**
Watershed name **Lower Colorado - Cummins**
Tributary(ies) **Unnamed Tributary**
HUC# **12090301** Stream miles (est.) **1.00 miles**
Drainage area: square miles, est **1.05** or acreage, est **672**
Social vulnerability index **0.61**
Other **Roadway/Crossing Improvements & Storm Drainage System**



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing/bridge class structure is a multi-corrugated metal pipe (2) crossing. The proposed improvements include a box culvert-bridge replacement. The existing road is a 2-lane road with an average daily traffic count of 781.

Population at risk **N/A** Structures at risk **N/A** Critical facilities at risk (number) **N/A**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **0.21 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$100,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title **Old Sayers Rd & Little Sandy Creek** ID# **101000012**
Sponsor (name of entity) **City of Bastrop** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type Preliminary Project Engineering

Problem Area

City **City of Bastrop** County **Bastrop County**
Watershed name **Lower Colorado - Cummins**
Tributary(ies) **Big Sandy Creek**
HUC# **12090301** Stream miles (est.) **1.50 miles**
Drainage area: square miles, est **87.27** or acreage, est **55,855**
Social vulnerability index **0.61**
Other **Roadway/Crossing Improvements & Storm Drainage System**



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing/bridge class structure is a multi-box (2) culvert-bridge. The proposed improvements include upgrades to the subject crossing. The existing road is a 2-lane road with an average daily traffic count of 338.

Population at risk **N/A** Structures at risk **N/A** Critical facilities at risk (number) **N/A**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **0.01 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$100,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title **Paffen Rd & Grassy Creek Draw** ID# **101000013**
Sponsor (name of entity) **City of Giddings** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type Preliminary Project Engineering

Problem Area

City **City of Giddings** County **Bastrop County**
Watershed name **Lower Colorado - Cummins**
Tributary(ies) **Unnamed Tributary**
HUC# **12090301** Stream miles (est.) **1.25 miles**
Drainage area: square miles, est **1.00** or acreage, est **641**
Social vulnerability index **0.61**
Other **Roadway/Crossing Improvements & Storm Drainage System**



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing/bridge class structure is a corrugated metal pipe crossing. The proposed improvements include a multi-box (2) culvert-bridge. The existing road is a 2-lane road with an average daily traffic count of 17.

Population at risk **N/A** Structures at risk **N/A** Critical facilities at risk (number) **N/A**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **0.02 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$100,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title **Meduna Rd & Barton Oaks Draw 1** ID# **101000014**
Sponsor (name of entity) **City of Smithville** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type Preliminary Project Engineering

Problem Area

City **City of Smithville** County **Bastrop County**
Watershed name **Lower Colorado - Cummins**
Tributary(ies) **Unnamed Tributary**
HUC# **12090301** Stream miles (est.) **0.38 miles**
Drainage area: square miles, est **0.43** or acreage, est **273**
Social vulnerability index **0.61**
Other **Roadway/Crossing Improvements & Storm Drainage System**



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing/bridge class structure is a small one-lane bridge. The proposed improvements include a multiple box culvert-bridge. The existing road is a 2-lane road with an average daily traffic count of 65.

Population at risk **N/A** Structures at risk **N/A** Critical facilities at risk (number) **N/A**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **0.05 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$100,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

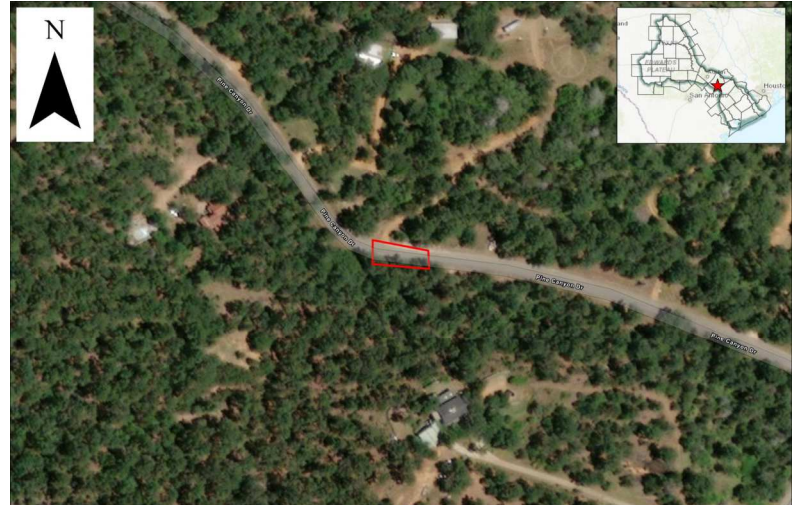
Title **Pine Canyon Dr & Wet Weather Creek** ID# **101000015**
Sponsor (name of entity) **City of Smithville** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type Preliminary Project Engineering

Problem Area

City **City of Smithville** County **Bastrop County**
Watershed name **Lower Colorado - Cummins**
Tributary(ies) **Unnamed Tributary**
HUC# **12090301** Stream miles (est.) **0.66 miles**
Drainage area: square miles, est **0.24** or acreage, est **150**
Social vulnerability index **0.61**
Other **Roadway/Crossing Improvements & Storm Drainage System**



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing/bridge class structure is a corrugated metal pipe crossing. The proposed improvements include a multi-box (2) culvert-bridge. The existing road is a 2-lane road with an average daily traffic count of 230.

Population at risk **N/A** Structures at risk **N/A** Critical facilities at risk (number) **N/A**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **0.02 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$100,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title **Hall Rd & Young's Branch** ID# **101000016**
Sponsor (name of entity) **City of Smithville** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type Preliminary Project Engineering

Problem Area

City **City of Smithville** County **Bastrop County**
Watershed name **Lower Colorado - Cummins**
Tributary(ies) **Unnamed Tributary**
HUC# **12090301** Stream miles (est.) **0.65 miles**
Drainage area: square miles, est **0.74** or acreage, est **470**
Social vulnerability index **0.61**
Other **Roadway/Crossing Improvements & Storm Drainage System**



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing/bridge class structure is a box-culvert-bridge. The proposed improvements include an upgrade of the subject culvert-bridge. The existing road is a 1-lane road with an average daily traffic count of 19.

Population at risk **N/A** Structures at risk **N/A** Critical facilities at risk (number) **N/A**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **0.03 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$100,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title **Friendship Rd & Turner Creek A and B** ID# **101000017**
Sponsor (name of entity) **City of Giddings** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type Preliminary Project Engineering

Problem Area

City **City of Giddings** County **Bastrop County**
Watershed name **Lower Colorado - Cummins**
Tributary(ies) **Unnamed Tributary**
HUC# **12090301** Stream miles (est.) **2.70 miles**
Drainage area: square miles, est **2.55** or acreage, est **1,632**
Social vulnerability index **0.61**
Other **Roadway/Crossing Improvements & Storm Drainage System**



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing appears to be a single box culvert. The proposed improvements include a multi-box (3) culvert-bridge. The existing road is a 2-lane road with an average daily traffic count of 35.

Population at risk **N/A** Structures at risk **N/A** Critical facilities at risk (number) **N/A**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **0.03 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$100,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title ID#
Sponsor (name of entity) Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type

Problem Area

City County
Watershed name
Tributary(ies)
HUC# Stream miles (est.)
Drainage area: square miles, est or acreage, est
Social vulnerability index
Other



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing/bridge class structure is a wooden bridge. The proposed improvements include a multi-box (2) culvert-bridge. The existing road is a 1-lane road with an average daily traffic count of 39.

Population at risk Structures at risk Critical facilities at risk (number)
Farm/Ranch land impacted (acres) Roadway(s) impacted (miles)

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost Potential funding source(s)

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title ID#

Sponsor (name of entity) Commitment ☒ Yes ☐ No

Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type

Problem Area

City County

Watershed name

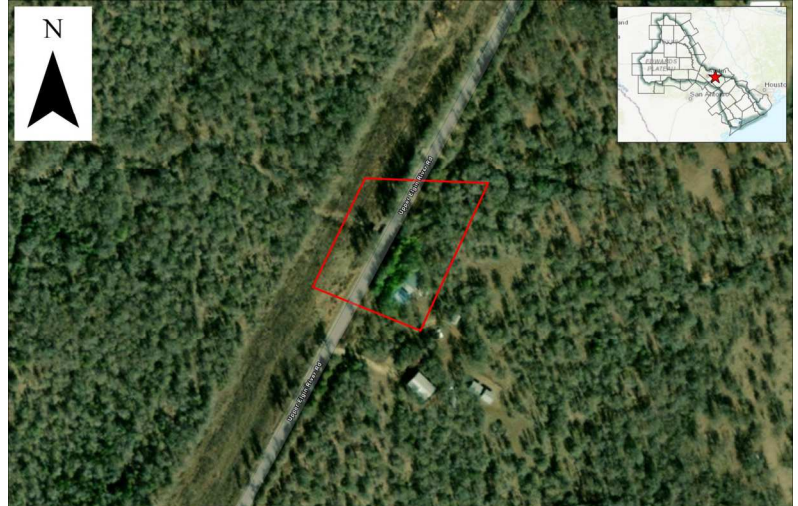
Tributary(ies)

HUC# Stream miles (est.)

Drainage area: square miles, est or acreage, est

Social vulnerability index

Other



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing is a corrugated metal pipe crossing. The proposed improvements include a multi-box (2) culvert-bridge. The existing road is a 2-lane road with an average daily traffic count of 398.

Population at risk Structures at risk Critical facilities at risk (number)

Farm/Ranch land impacted (acres) Roadway(s) impacted (miles)

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost Potential funding source(s)

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title ID#

Sponsor (name of entity) Commitment ☒ Yes ☐ No

Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type

Problem Area

City County

Watershed name

Tributary(ies)

HUC# Stream miles (est.)

Drainage area: square miles, est or acreage, est

Social vulnerability index

Other



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing is a corrugated metal pipe crossing. The proposed improvements include a multi-box (2) culvert-bridge. The existing road is a 2-lane road with an average daily traffic count of 302.

Population at risk Structures at risk Critical facilities at risk (number)

Farm/Ranch land impacted (acres) Roadway(s) impacted (miles)

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost Potential funding source(s)

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title **Caldwell Rd & Wet Weather Creek** ID# **101000021**
Sponsor (name of entity) **City of Mustang Ridge** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type Preliminary Project Engineering

Problem Area

City **City of Mustang Ridge** County **Bastrop County**
Watershed name **Lower Colorado - Cummins**
Tributary(ies) **Cedar Creek**
HUC# **12090301** Stream miles (est.) **0.50**
Drainage area: square miles, est **20.10** or acreage, est **12,860**
Social vulnerability index **0.61**
Other **Roadway/Crossing Improvements & Storm Drainage System**



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing is a corrugated metal pipe crossing. The proposed improvements include a multi-box (2) culvert-bridge. The existing road is a 2-lane road with an average daily traffic count of 411.

Population at risk **N/A** Structures at risk **N/A** Critical facilities at risk (number) **N/A**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **0.02 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$100,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

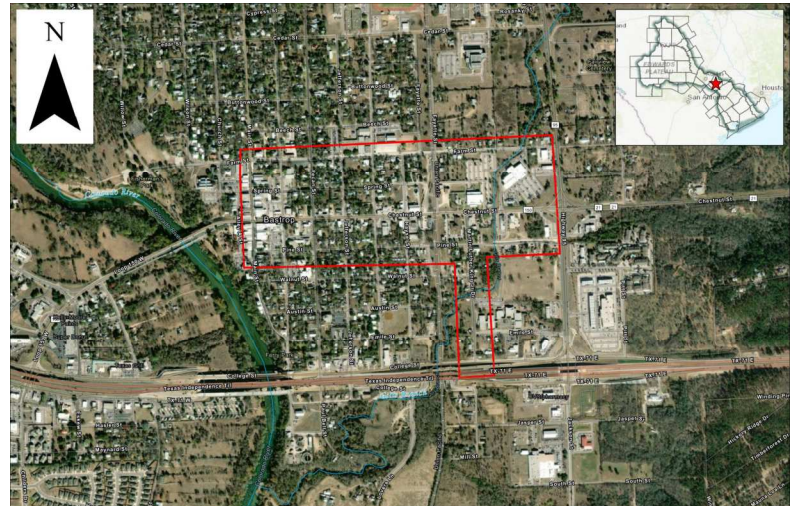
Title **Farm Street, Pine Street, Chestnut Road, MLK Drive** ID# **101000022**
Sponsor (name of entity) **City of Bastrop** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type **Preliminary Project Engineering**

Problem Area

City **City of Bastrop** County **Bastrop County**
Watershed name **Lower Colorado - Cummins**
Tributary(ies) **Gill's Branch and Unnamed Tributaries**
HUC# **12090301** Stream miles (est.) **2.30 miles**
Drainage area: square miles, est **2.23** or acreage, est **1426.4**
Social vulnerability index **0.61**
Other **Roadway/Crossing Improvements & Channel Improvements**



Flood Risk Description

The existing crossings are undersized and overtop. Overtopping flood flows result in structural flood risk. The existing crossing/bridge class structures identified include box culverts and other bridge openings. The proposed improvements include upgrades to the subject crossings along with channel modifications. The existing main stem road is a 2-lane road with an average daily traffic count of 8,488.

Population at risk **TBD** Structures at risk **TBD** Critical facilities at risk (number) **TBD**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **29 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossings and channel modifications. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$250,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title ID#

Sponsor (name of entity) Commitment ☒ Yes ☐ No

Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type

Problem Area

City County

Watershed name

Tributary(ies)

HUC# Stream miles (est.)

Drainage area: square miles, est or acreage, est

Social vulnerability index

Other



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing is a multi-corrugated metal pipe (4) crossing. The proposed improvements include structural flood damage repair. The existing road is a 2-lane road with an average daily traffic count of 109.

Population at risk Structures at risk Critical facilities at risk (number)

Farm/Ranch land impacted (acres) Roadway(s) impacted (miles)

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost Potential funding source(s)

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title **Edison & Creek Street** ID# **101000043**
Sponsor (name of entity) **City of Fredericksburg** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type Preliminary Project Engineering

Problem Area

City **City of Fredericksburg** County **Gillespie County**
Watershed name **Pedernales**
Tributary(ies) **Unnamed Tributary**
HUC# **12090206** Stream miles (est.) **0.25 miles**
Drainage area: square miles, est **0.06** or acreage, est **36**
Social vulnerability index **0.10**
Other **Roadway/Crossing Improvements**



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing/bridge class structure is a multi-box (2) culvert-bridge. The proposed improvements include upgrades to the subject crossing. The existing road is a 2-lane road with an average daily traffic count of 117.

Population at risk **N/A** Structures at risk **N/A** Critical facilities at risk (number) **N/A**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **0.05 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$100,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title **Downtown Fredericksburg Storm Drainage Improvements** ID# **101000047**
Sponsor (name of entity) **City of Fredericksburg** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type Preliminary Project Engineering

Problem Area

City **City of Fredericksburg** County **Gillespie County**
Watershed name **Headwaters Pedernales River**
Tributary(ies) **Town Creek**
HUC# **120902060110** Stream miles (est.) **N/A**
Drainage area: square miles, est **0.56** or acreage, est **360**
Social vulnerability index **0.10**
Other **Downtown flooding bounded by W. College St, N. Llano St, E College St, and N Sycamore St. Storm Drainage System**



Flood Risk Description

The area of concern lacks a storm drain system and stormwater is conveyed via streets. Level of service is less than a 2-yr storm. The area has experienced excessive flow depth and velocity, has structures at risk, historical flood damages, and channel erosion.

Population at risk **~650** Structures at risk **~700** Critical facilities at risk (number) **1**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **2.7 miles**

Scope of Study

Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000025 - Reduce the number of structures and critical facilities that are at high risk of repetitive loss through the implementation of structural flood mitigation projects.

Estimated Study Cost

Cost **\$1,500,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

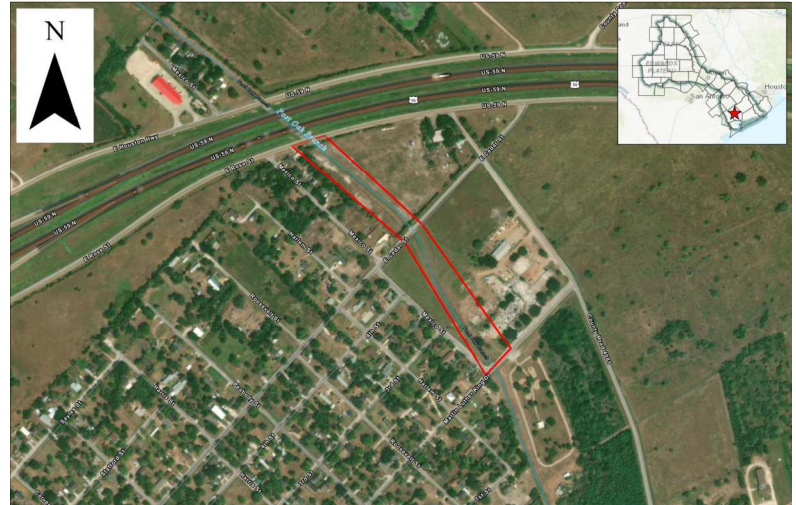
Title **MLK Blvd to Mexico St** ID# **101000062**
Sponsor (name of entity) **City of Edna** Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type Preliminary Project Engineering

Problem Area

City **City of Edna** County **Jackson County**
Watershed name **Lavaca**
Tributary(ies) **Post Oak Branch**
HUC# **12100101** Stream miles (est.) **2.00 miles**
Drainage area: square miles, est **1.51** or acreage, est **965**
Social vulnerability index **0.51**
Other **Roadway/Crossing Improvements & Storm Drainage System**



Flood Risk Description

The existing crossing is undersized and overtops. The existing crossing/bridge class structure is a multi-box (2) culvert-bridge. The proposed improvements include upgrades to the subject crossing. The existing road is a 2-lane road with an average daily traffic count of 180.

Population at risk **N/A** Structures at risk **N/A** Critical facilities at risk (number) **N/A**
Farm/Ranch land impacted (acres) **N/A** Roadway(s) impacted (miles) **0.06 miles**

Scope of Study

Conduct a study to evaluate upsizing the existing low water crossing. Study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall), preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000027 - Increase the number of entities that mitigate flood risk at vulnerable roadways or waterways (e.g., low-water crossings, irrigation canals).

Estimated Study Cost

Cost **\$100,000** Potential funding source(s) **Unknown**

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

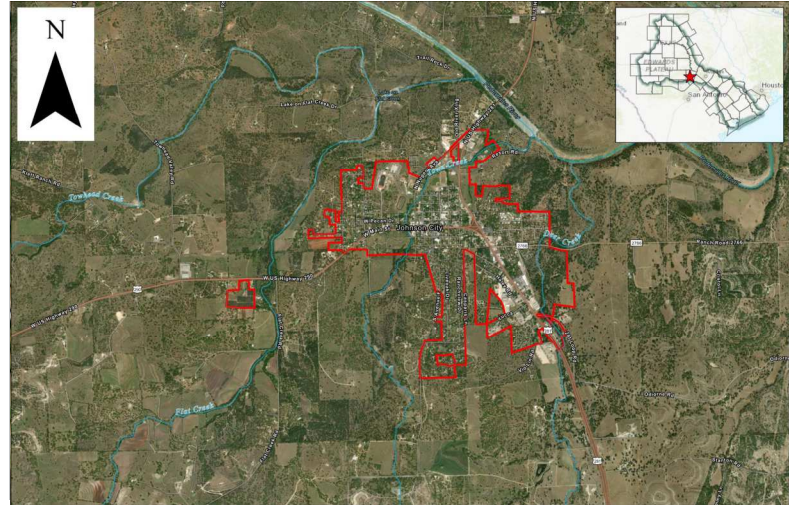
Title ID#
Sponsor (name of entity) Commitment ☒ Yes ☐ No
Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type

Problem Area

City County
Watershed name
Tributary(ies)
HUC# Stream miles (est.)
Drainage area: square miles, est or acreage, est
Social vulnerability index
Other



Flood Risk Description

The City has multiple local drainage problems and portions of the City are at risk of from the Pedernales River, Flat Creek, Town Creek, and Deer Creek.

Population at risk Structures at risk Critical facilities at risk (number)
Farm/Ranch land impacted (acres) Roadway(s) impacted (miles)

Scope of Study

The City-wide study will include hydrologic and hydraulic modeling (with Atlas 14 rainfall) to identify priority flood risk areas, flood risk reduction alternatives analysis, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000007 - Increase the number of entities that have evaluated priority flood risk areas and flood risk reduction measures (e.g., alternatives analysis and preliminary engineering).

Estimated Study Cost

Cost Potential funding source(s)

Flood Management Evaluation (FME) STUDY

Lower Colorado-Lavaca REGIONAL FLOOD PLANNING GROUP

Title ID#

Sponsor (name of entity) Commitment ☒ Yes ☐ No

Technical committee recommend ☐ Yes ☐ No RFPG recommend ☐ Yes ☐ No

REGION 10

Study Type

Problem Area

City County

Watershed name

Tributary(ies)

HUC# Stream miles (est.)

Drainage area: square miles, est or acreage, est

Social vulnerability index

Other



Flood Risk Description

The area of concern along Willis Creek has insufficient channel capacity and undersized bridge/culvert crossings. The area has experienced excessive flow depth and velocity, has structures at risk, historical flood damages, and channel erosion.

Population at risk Structures at risk Critical facilities at risk (number)

Farm/Ranch land impacted (acres) Roadway(s) impacted (miles)

Scope of Study

The study will build upon and update previously conducted flood risk reduction studies. Study will include hydrologic and hydraulic modeling, preliminary design of improvements, risk reduction analysis, verification of no adverse impacts, preparation of cost estimates and a benefit-cost-analysis, and an evaluation of potential constraints (environmental, utility conflicts, right-of-way needs, and constructability).

Related Goal(s)

10000025 - Reduce the number of structures and critical facilities that are at high risk of repetitive loss through the implementation of structural flood mitigation projects.

Estimated Study Cost

Cost Potential funding source(s)