A attack Novemb	Author Moore	David Nove 1	Tech Committee Rec	Tech Committee Rec	RFPG Rec	RFPG Rec
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103000014	Arroyo Doble/Twin Creeks Drainage Phases 3-7	4				
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# Flood Management Strategy (FMS)

Title	Floodplain Management and Regulation						10200	00001	
Spons	sor (name of entity)	Lower Co	lorado-L	avaca RF	PG	Comm	nitment	Yes	No
Techr	ical committee reco	mmend	Yes	No	RFPG recom	nmend	Yes	No	

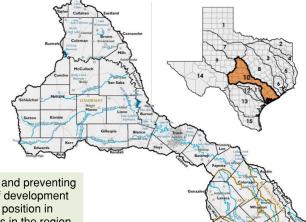


REGION 10

#### Stategy Type Strengthen floodplain management practices and floodplain regulation

### **Problem Area**

Regional Lower Colorado-Lavaca RFPG
·
Sub-regional Sub-regional
Counties
City
1



#### **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

# Flood Management Strategy (FMS)

Title	Flood Awareness and Education and Outreach						10200	02000002		
Spon	sor (name of entity)	Lower C	olorado-L	.avaca R	FPG	Comm	itment	Yes	No	
Techr	ical committee reco	mmend	Yes	No	RFPG recom	nmend	Yes	No		

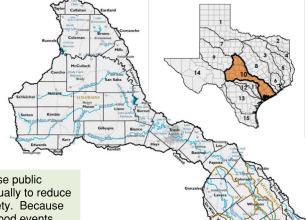
Lower	Colorad	lo-Lavaca
REGI	<b>ONAL</b>	<b>FLOOD</b>
PLAN	INING	GROUP

REGION 10

#### Stategy Type Flood awareness and preparation / education and outreach

#### **Problem Area**

Regional Lower Colorado-Lavaca RFPG
Sub-regional
Counties
City



#### **Need for Strategy**

An essential element of any comprehensive approach to flood risk reduction is to increase public awareness of flood risk and educate the public as to measures that can be taken individually to reduce risk to themselves and others. The goal is prevention, particularly in terms of public safety. Because flooding is episodic, public awareness often wanes over time as memories of previous flood events fade. It is therefore important that there be ongoing efforts to communicate regularly with the public about flood risk, personal behavior to minimize personal risk, and about preparedness measures that can be taken in advance of flood events. This can include the use of broadcast and other media (paid and free), school education programs, ready access to information sources during flood events, and other approaches. One example is "Turn Around Don't Drown" messaging.

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.

## **Description of Strategy**

This strategy consists of two parts. First would be ongoing TWDB grant funding of the Lower Colorado-Lavaca RFPG to continue its public outreach and engagement efforts during the interim between regional flood planning cycles. It is important that momentum gained through the first planning cycle be maintained and increased in advance of the second planning cycle. This would include the periodic e-mail news blasts, additional public meetings to present the Initial RFP, and continuing outreach to key stakeholders (e.g., state and local elected officials, floodplain administrators, emergency coordinators). Ongoing stakeholder engagement is particularly important to improve information about flood problem areas and increase local input with regard to potential Flood Management Evaluations, Flood Management Strategies, and Flood Mitigation Projects.

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).

#### Related Goals

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.

## **Estimated Strategy Cost**

Cost TBD

Potential funding source(s) TWDB, TXDEM, FEMA

# Flood Management Strategy (FMS)

Title	Low Water Crossin	ng Assessn	nent, Pri	oritizatio	n, and Mitigatio	on II	D# 10200	00003	
Spon	sor (name of entity)	Lower Col	lorado-La	avaca Ri	FPG	Com	mitment	Yes	No
Techr	nical committee reco	mmend	Yes	No	RFPG recom	mend	Yes	No	



REGION 10

#### Stategy 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)

Title Arroyo Doble/Twin Creeks Drainage Phases 3-7 ID# 103000014

Sponsor (name of entity) Travis County Commitment ✓ Yes No RFPG recommend Yes No



#### **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							
Waters	ned name Onion Creek							
Tributa	Tributary(ies) N/A							
HUC#)	120902050407 Stream miles (est.) N/A							
Draina	Drainage area: square miles, est or acreage, est 400							
Social	vulnerability index 0.15							
Other								



#### 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

Γitle	Shiloh Road Bridge	ID#	10100	0002						
Spon	sor (name of entity)	City of Ba	strop			Commi	ment	<b>√</b> Yes	No	כ
Гесhі	nical committee reco	mmend	Yes	No	RFPG recom	mend	Yes	No		



Study Type Preliminary Project Engineering

#### **Problem Area**

City C	ty of Bastrop	County Bastrop County						
Waters	Watershed name Lower Colorado - Cummins							
Tributa	Tributary(ies) Unnamed Tributaries							
HUC#)	12090301		eam miles (est.)	1.20 miles				
Drainad	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**

Title Willie May Way in Preci	nct 4 at Trib	ID# 101000003	
Sponsor (name of entity) City	of Webbervile	Commitment ✓ Yes No	o
Technical committee recommer	nd Yes No	RFPG recommend Yes No	



REGION 10

### Study Type Preliminary Project Engineering

#### **Problem Area**

City C	ty of Webbervile County Bastrop County						
Waters	hed name Lower Colorado - Cummins						
Tributa	Tributary(ies) Unnamed Tributary						
HUC#)	12090301 Stream miles (est.) 0.50 miles						
Drainad	Drainage area: square miles, est 0.37 or acreage, est 238						
Social	Social vulnerability index 0.61						
Other							



#### 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**

Title Green Valley Drive	e in Precinct 1	ID# 101000006
Sponsor (name of entity)	City of Bastrop	Commitment 🗸 Yes 📗 No
Technical committee reco	mmend Yes No	RFPG recommend Yes No



### Study Type Preliminary Project Engineering

#### **Problem Area**

City City of Bastrop			County Bastrop County				
Watershed name Lower Colorado - Cummins							
Tributary(	Tributary(ies) Unnamed Tributary						
HUC#) 1:	4.00.0004						
Drainage a	Drainage area: square miles, est 1.43 or acreage, est 912						
Social vulnerability index 0.61							
Other Ro	Roadway/Crossing Improvements						



#### 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 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**

Title	Old McDade Rd in Precinct 4 near Norwood Rd				ID#	10100	0007			
Spon	sor (name of entity)	City of Ba	strop			Commit	ment •	/ Yes	N/	0
Techr	nical committee reco	mmend	Yes	No	RFPG recom	mend	Yes	No		



Study Type Preliminary Project Engineering

#### **Problem Area**

City City of Bastrop County  Watershed name Lower Colorado - Cummins						
Tributary(ies) Unnamed Tributary						
3						
Drainage area: square miles, est 1.05 or acreage, est 672  Social vulnerability index 0.61						



#### 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**

Γitle	Old Sayers Rd & L	ittle Sandy Creek		ID# 101000012	
Spon	sor (name of entity)	City of Bastrop		Commitment 🗸 Yes	No
Гесhr	nical committee reco	mmend Yes	No RFPG reco	mmend Yes No	



Study Type Preliminary Project Engineering

#### **Problem Area**

City Cit	ity City of Bastrop			County Bastrop County			
Watersh	ned name	Lower Colora	do - Cun	nmins			
Tributar	Tributary(ies) Big Sandy Creek						
HUC#)	1209030	1	Str	eam miles (est.)	1.50 miles		
Drainag	Drainage area: square miles, est 87.27 or acreage, est 55,855						
Social vulnerability index 0.61							
	Roadway System	/Crossing Imp	rovemen	ts & Storm Drai	nage		



#### 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**

Title Paffen Rd & Grass	sy Creek Draw	ID# 101000013
Sponsor (name of entity)	City of Giddings	Commitment 🗸 Yes No
Technical committee reco	mmend Yes No	RFPG recommend Yes No



REGION 10

### Study Type Preliminary Project Engineering

#### **Problem Area**

City C	City of Giddings County	Bastrop County						
Waters	rshed name Lower Colorado - Cummins							
Tributa	Tributary(ies) Unnamed Tributary							
HUC#)	12090301 Stream miles	(est.) 1.25 miles						
Draina	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**

Title	Meduna Rd & Barton Oaks Draw 1					ID#	101000	0014	
Spons	sor (name of entity)	City of Sm	nithville			Commit	ment	Yes	No
Techn	ical committee reco	mmend	Yes	10	RFPG recom	mend	Yes	No	



Study Type Preliminary Project Engineering

#### **Problem Area**

City Ci	ity of Smithville	County Bastrop County					
Waters	hed name Lower Colorado - Cu	mmins					
Tributa	ry(ies) Unnamed Tributary						
HUC#)	12090301 st	ream miles (est.) 0.38 miles					
Drainaç	Drainage area: square miles, est 0.43 or acreage, est 273						
Social vulnerability index 0.61							
Other	Roadway/Crossing Improveme System	nts & Storm Drainage					



#### 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**

Title	Pine Canyon Dr & Wet Weather Creek  sor (name of entity)  City of Smithville  Commitment Size No RFPG recommend Yes No RFPG recommend Yes	101000	015					
Spon	sor (name of entity)	City of Smi	ithville		Commit	ment 🗸	Yes	No
Techi	nical committee reco	mmend	Yes No	RFPG recom	nmend	Yes	No	



REGION 10

### Study Type Preliminary Project Engineering

#### **Problem Area**

City C	City of Smithville County Bastrop C	County			
Waters	shed name Lower Colorado - Cummins				
Tributa	ary(ies) Unnamed Tributary				
HUC#)	12090301 Stream miles (est.) 0	.66 miles			
Draina	age area: square miles, est 0.24 or acreage, est	150			
Social vulnerability index 0.61					
Other	Roadway/Crossing Improvements & Storm Draina System	ige			



#### 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**

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



Study Type Preliminary Project Engineering

#### **Problem Area**

City C	ity 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						
	vulnerability index 0.61					
ooc.a.	valierability illaex					
Other	Roadway/Crossing Improve System	ements & Storm Drainage				



#### 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**

Title Friendship Rd &	Γurner Creek A and B	ID# 101000017
Sponsor (name of entity)	City of Giddings	Commitment <b>√</b> Yes No
Technical committee rec	ommend Yes No	RFPG recommend Yes No



REGION 10

### Study Type Preliminary Project Engineering

#### **Problem Area**

City City of G	iddings	County Bastrop County				
Watershed name Lower Colorado - Cummins						
Tributary(ies) Unnamed Tributary						
HUC#) 1209		Stream miles (est.) 2.70 miles				
•	square miles, est 2.5	'				
Social vulnerability index 0.61						
Social vulliera	bility ilidex					
	ther 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**

Title	e Patterson Rd & Barton's Creek					ID#	ID# 101000018			
Spon	Sponsor (name of entity) City of Smithville				Comm	itment	<b>√</b> Yes	No		
Techi	nical committee reco	mmend	Yes	No	RFPG recomi	mend	Yes	No		



Study Type Preliminary Project Engineering

#### **Problem Area**

City C	ty of Smithville County Bastrop County				
Watershed name Lower Colorado - Cummins					
Tributary(ies) Barton's Creek					
HUC#)	12090301 Stream miles (est.) 1.00 miles				
Drainad	e area: square miles, est 7.03 or acreage, est 4,501				
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 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 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**

Upper Elgin River Rd & Cotton Creek	ID# 101000019				
Sponsor (name of entity) City of Webberville	Commitment <b>√</b> Yes No				
Technical committee recommend Yes No	RFPG recommend Yes No				



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			ream miles (est.)	0.50 miles	
Drainage area: square miles, est 1.11 or acreage, est 713					st 713	
Social	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 398.

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**

Title C	le Old Sayers Rd & Big Sandy Creek			ID#	101000	0020			
Sponsor (name of entity) City of Elgin				Commit	ment 🔻	Yes	No		
Technic	al committee reco	mmend	Yes	No	RFPG recom	mend	Yes	No	



REGION 10

### Study Type Preliminary Project Engineering

#### **Problem Area**

City City	of Elgin	County Bastrop County				
Watershed name Lower Colorado - Cummins						
Tributary(ies) Little Sandy Creek						
HUC#) 1	12090301	Stream miles (est.) 0.75 miles				
Drainage a	19.54 or acreage, est 12,504					
Social vulnerability index 0.61						
	Roadway/Crossing Impr System	rovements & Storm Drainage				



#### 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 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) 0.1 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**

Title Caldwell Rd & We	t Weather Creek	ID# 101000021
Sponsor (name of entity)	City of Mustang Ridge	Commitment ✓ Yes No
Technical committee reco	ommend 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#)	HUC#) 12090301			Stream miles (est.) 0.50		
Drainage area: square miles, est 20.10			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**

Title	Farm Street, Pine	Street, Chestnut	Road, MLK	Drive	ID#	101000	022		
Spons	sor (name of entity)	City of Bastrop			Commit	ment 🗸	Yes	No.	0
Techr	ical committee reco	mmend Yes	No	RFPG recom	mend	Yes	No		



REGION 10

### Study Type Preliminary Project Engineering

#### **Problem Area**

City City of Bast	City of Bastrop			trop	County	
Watershed name	Watershed name Lower Colorado - Cummins					
Tributary(ies) Gill's Branch and Unnamed Tributaries						
HUC#) 1209030	)1	St	ream miles (es	st.) 2	2.30 miles	
		0.00	or acreage, est 1426.4		1426.4	
Social vulnerability index 0.61						
Jocial Vallierabilit	.y iiiuex					
Other Roadway	//Crossing Imp	roveme	nts & Channe	l Imp	rovements	



#### 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**

Title County Road 328 at Cow Creek	ID# 101000031
Sponsor (name of entity) City of Lago Vista	Commitment  ✓ Yes No
Technical committee recommend Yes No	RFPG recommend Yes No



### Study Type Preliminary Project Engineering

#### **Problem Area**

City C	ty of Lago Vista County Travis County					
Waters	Watershed name Austin - Travis Lakes					
Tributa	ry(ies) Cow Creek					
HUC#)	12090205 Stream miles (est.) 1.00 miles					
Drainage area: square miles, est 27.13 or acreage, est 17,364						
Social vulnerability index 0.15						
Other	Roadway/Crossing Improvements					



#### 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 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**

Title Edison & Creek Street	ID# 101000043
Sponsor (name of entity) City of Fredericksburg	Commitment <b>✓</b> Yes No
Technical committee recommend Yes No	RFPG recommend Yes No



Study Type Preliminary Project Engineering

#### **Problem Area**

City Ci	City City of Fredericksburg			County Gilles	oie County
Watersh	ned name	Pedernales			
Tributar	y(ies) Ur	named Tributa	ary		
HUC#)	1209020	6	St	ream miles (est.)	0.25 miles
Drainage area: square miles, est 0.06 or acreage, est 36				st 36	
Social vulnerability index 0.10					
Other	Roadway	/Crossing Imp	roveme	nts	



#### 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**

Title	le Downtown Fredericksburg Storm Drainage Improvements					ID#	10100	0047		
Spon	sor (name of entity)	City of Fre	edericks	burg		Commit	ment	<b>√</b> Yes	N	o
Techr	nical committee reco	mmend	Yes	No	RFPG recom	nmend	Yes	No		



Study Type Preliminary Project Engineering

#### **Problem Area**

City Ci	ty of Fredericksburg	County Gillespie County			
Watersh	Watershed name Headwaters Pedernales River				
Tributa	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 that 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  $^{\sim650}$  Structures at risk  $^{\sim700}$  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**

Title MLK Blvd to Mexico St	ID# 101000062
Sponsor (name of entity) City of Edna	Commitment <b>✓</b> Yes No
Technical committee recommend Yes No	RFPG recommend Yes No



### Study Type Preliminary Project Engineering

#### **Problem Area**

City City C	of Edna	County Jackson County		
Watershed	name Lavaca			
Tributary(i	es) Post Oak Branch			
HUC#) 12	2100101	Stream miles (est.) 2.00 miles		
Drainage area: square miles, est 1.51 or acreage, est 965				
Social vulnerability index 0.51				
	adway/Crossing Impr stem	rovements & Storm Drainage		



#### 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**

Title Cit	ywide Drainage	Plan				ID#	10100	0107		
Sponsor	(name of entity)	Johnson	City			Commi	tment •	<b>✓</b> Yes	No	
Technical	committee reco	mmend	Yes	No	RFPG recom	mend	Yes	No		



Study Type Preliminary Project Engineering

#### **Problem Area**

City Jo	ohnson City	County Blanco County		
Waters	hed name Pedernales			
Tributa	ry(ies) Town Creek, Deer Cree	k		
HUC#)	12090206 Si	tream miles (est.) 8.50 miles		
Drainage area: square miles, est 8.64 or acreage, est 5,526				
Social vulnerability index 0.07				
Other	Local Plans & Regulations			



#### 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 TBD Structures at risk TBD Critical facilities at risk (number) TBD

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

### 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**

City of Brown	vood Project 30 - Willis Creek Dete	ention ID# 101000112
Sponsor (name of en	city) City of Brownwood	Commitment <b>√</b> Yes No
Technical committee	recommend Yes No	RFPG recommend Yes No



Study Type Preliminary Project Engineering

#### **Problem Area**

City City of Brownwood				County Brown County	
Watershed name Pecan Bayou					
Tributary(ies) Willis Creek					
HUC#) 12090107 Stream miles (est.) 13.00 m					13.00 miles
Drainage area: square miles, est 23.69			or acreage	e, est 17,364	
Social vulnerability index 0.28					
	N/A	•			



#### 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 700+ Structures at risk 296 Critical facilities at risk (number) TBD

Farm/Ranch land impacted (acres) N/A Roadway(s) impacted (miles) TBD

## 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**